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StoryTellerApp

Technical Report

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EXECUTIVE SUMMARY

We are currently living in an era where many aspects of our daily lives are coordinated through mobile devices. The amount of mobile phone applications and social networks currently in the market are vast and growing at an exponential rate. Many applications offer users a unique experience to post a vast array of content such as messages, videos, pictures, recipes and so forth.

The purpose of this project is to show how important storytelling is in our daily lives and the impact that the stories could have on us through the application StoryTellerApp. This application will give the users the ability to perform many actions using voice recordings.

The users can record, store and share their stories with other users and the rest of the world through the application and social networks.

The intended audience of StoryTellerApp are the Android phone holders with a Facebook account who actively share information via the social networks such as Facebook, twitter or WhatsApp.

I have built this project using different technologies such as Android Studio to create the application layout and functionality, visual studio and Asp.Net to create a web API that interacts with the android application and SQL Server Management Studio to store the database.

STRUCTURE

There are six sections in this document:

The first section gives a brief overview of the project while setting out the main objective.

The second section details the project background and the main aims.

The third section details all the requirements needed for the development of the application.

The fourth section details the design and architecture of the application.

The fifth section details the Implementation and the technologies used in the application.

The sixth section details the results of the testing performed in the application.

There are other sections containing conclusions related to the project, description of further development, the bibliography and the appendix with the previous technical report and the monthly reflective journals.

INTRODUCTION

The idea for this project was to create a storytelling mobile application. In this application, a user can record a story and share it with other users. As an example, a father who lives far from his family could read a small story and record it for his children/wife. This storyteller application could be also used for other concepts too, such as to express an idea with other users via voice messages.

The scope of the project is to develop an android mobile application that the users can download from the play store and perform the following actions:

- Sign in with a Facebook account.
- Log in, keep logged and log out from the application.
- Browse, listen and share the stories of the Story wall.
- Record/Pause/Stop an audio story.
- Publish an audio story.
- Delete the audio story.
- Share the audio story with other users via email, message or social networks.
- Follow and be followed by other app users.

There is no other mobile app focusing exclusively on the personal voice recorded stories.

BACKGROUND

Like many other people, I use different mobile applications and social networks such as Facebook, LinkedIn, twitter, Instagram, WhatsApp etc.

The reason I chose this project is that I would like to create an application where users can be creative and share their audio stories. Many Social networks are mostly based on visual content like for example written comments, videos and pictures. Often users do not have the opportunity to express themselves in the form of a story.

With StoryTellerApp, the user could play a story, which has been scripted, by a friend (or a parent or relative in the case where the user is a child) without having to look at the mobile device. This could be an ideal alternative to the traditional book at bedtime and could be particularly engaging/fun experience for the child if the parents are away and has pre-recorded a story for them.

The application also has further potential (in later versions) to be enhanced with visual information such as pictures, animations or sound effects which would further improve the users experience. The user, for example, could listen to the pre-recorded story through their headphones whilst also 'swiping' through matching pictures of the story.

This App is designed to encourage people to play stories created by others and listen to their experiences through the use of mobile technology.

There are two main reasons for developing this project.

Storytelling is beneficial to us in many ways and it has been scientifically proven to have a positive effect on the brain. [3]

Storytelling affects the brain.

During the process of storytelling, the Human brain releases chemicals such as cortisol, oxytocin and dopamine. [3]. Such hormones are linked to neural pathways in the brain known as the reward system (mesolimbic pathway) which are activated when users engage in pleasurable activities (Bozarth,1994).

- **Cortisol** - Heightens brain arousal, increasing our attention.
- **Oxytocin** - Oxytocin is associated with caring, connectivity and empathy for others
- **Dopamine** – Improves the memory accuracy.

Storytelling is also associated with specific aspects of brain functioning which can also directly heighten the storytelling experience [3]

- **Neural coupling process** – Enabling the listeners to turn their creative thoughts or experiences into stories.
- **Cortical activity** – The listener processes the facts of the story through many areas of the cortex (motor, sensory and frontal cortex).

One of the most unique processes of storytelling is **mirroring** where both speaker and listener experience the same brain activities mentioned above.

There are further benefits related to storytelling, some of which are very important for our daily life. This might include the use of storytelling to improve:

- Public speaking skills.
- Listening skills.
- Creativity.
- Memory.
- Knowledge.
- Language vocabulary
- Social connection.

Storytelling is also important for children during their learning/developmental phases and additionally as a means to build a connective bond with their parents. (Thorat,1997)

StoryTellerApp will give the users the opportunity to share stories with the world.

Commercial potential:

StoryTellerApp is based on user contributed stories. This includes audio voice recordings enabling the user to relax and listen to the stories without viewing the mobile phone screen.

In the last 3-4 years, the mobile application market has experienced a rapid increase of applications based on audio.

For example, **WhatsApp** sends 200 million voice messages a day, which means that talking and recording messages may be more convenient or a preferred method than phone calls. [7]

"***Voice Messaging*** *allows you to send your recorded voice as a message. We made an effort to build a user experience across all of our platforms that are as similar as possible, but we encourage you also to spend time reading the articles below to better understand how Voice Messaging works on your smartphone*" [11]

Google introduced Voice search in 2013, "*a Google product that allows users to use Google Search by speaking on a mobile phone or computer".* [12]

Also, **Facebook** messenger uses the voice/audio services.

Therefore, there is commercial potential for voice and audio applications, and definitely for stories such as their increase use as an educational tool (Gils, 2005).

How is StoryTellerApp different from other storytelling applications?

The storytelling application market is quite small. The main difference between StoryTellerApp and other applications is that StoryTellerApp allows users to record their own voice stories and share them with other users who can then play or record their own unique story.

Other storytelling applications use text stories where the users have to read the stories, others use a standardized voice to tell the stories and others simply use Url's to YouTube videos. (To give some application examples Storyteller Audiobook player, Storyteller or Storyteller free).

Advertising in StoryTellerApp

- The ads can be embedded in the list of the first fragment "Home".
- The stories can also promote a product/destination/business etc.
- New concepts can be done using the same principles of the application.

AIMS

The purpose of this project was to develop professional native android storytelling application which gives everybody the opportunity to share their knowledge, experiences and stories using their own voice. The application users are able to perform a number of actions using voice recordings. For example, recording, sharing or playing stories made by other users. These stories can then be made public or shared privately with friends or family.

The app design should meet the following requirements:

1. Look attractive and serve a valuable purpose to the users.
2. Encourage and facilitate frequent and recurrent usage.
3. Keep Android standards, meaning strict adherence to the Android SDK and guidelines.
4. The application is user-friendly and easy to use.
5. Accessibility to anyone regardless of his or her familiarity with current Android apps.
6. The application loads quickly.

SYSTEM

The section presents the structure and description of the requirements of the Android application.

The first part of this section demonstrates a use case diagram with the interaction between the user and the application and all different scenarios required. In the next section the application technical requirements are explained in detail.

REQUIREMENTS

Once the user has downloaded the application from the store and the application is launched for the first time the user will be prompted to log in with his/her Facebook credentials. In this way, all the application users will be identified and the data can be extracted from their Facebook profiles.

FUNCTIONAL REQUIREMENTS

The functional requirements define the function of the application and indicate processes that the system has to perform.

Login activity: The first activity of the application prompts the user to log in using his/her Facebook credentials.

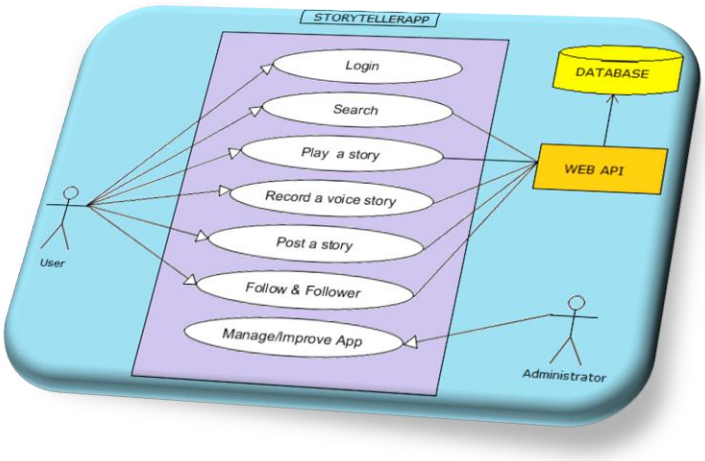
Home fragment: The fragment home is the first visible "activity" after log in. The fragment home displays a list of stories. The user can play or share the stories with other users.

Search fragment: The search fragment provides the use0sr with the function to Search and play or share a story.

Record fragment: The record fragment displays the functionality where the users can record and share a story.

Profile fragment: Once logged in, the application will provide the user with the function to access and edit any personal details

USE CASE DIAGRAM



REQUIREMENT 1: LOGIN

DESCRIPTION

The user logins into the application. This requirement is essential to the operating of the system.

USE CASE

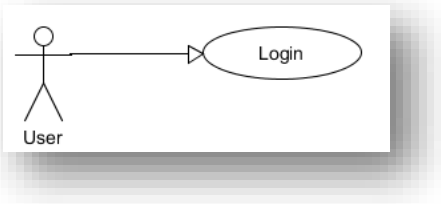
Scope

The scope of this use case is to allow the user to login into the application.

Description

This use case describes the process by which a user initializes the application.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user login in the application.

Main flow

1. The application identifies the user.
2. The user starts using the application.

Termination

The application launches the Home fragment.

Post-condition

The application goes into a wait state.

REQUIREMENT 2: RECORD A VOICE STORY.

DESCRIPTION

The user records a story.

USE CASE

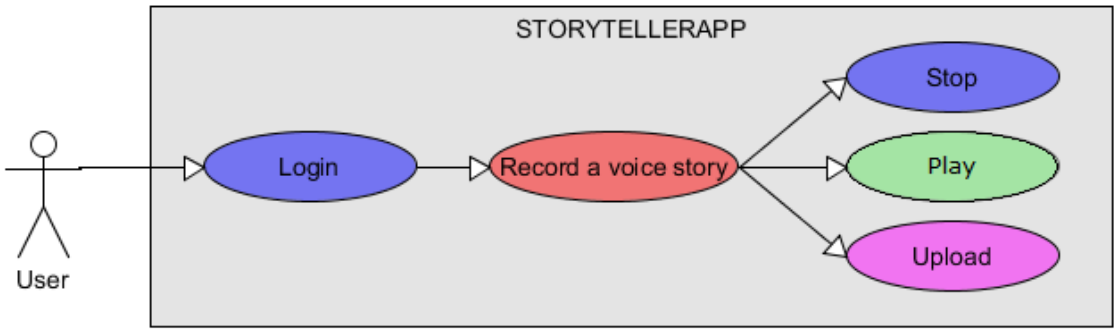
Scope

The scope of this use case is to allow the user to create a story (voice recording).

Description

This use case describes the process by which a user creates a story (voice recording).

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user clicks the button to record a story in the application.

Main flow

1. The application initialises.
2. The user selects the recording button.
3. The recording page opens up

Descriptive use case scenario:

user (Actor)	**StoryTellerApp**
1. The user turns on the app	
	2. The app turns on. The welcome message is displayed. The options are displayed a) Login with Facebook
	3. The app requests Facebook username and password.
4. The user inputs Facebook username and password.	
	5. The app validates Facebook username and password
	6.The user is given access to the app.
	7. The app displays the fragment Home.
8. The user sees the fragment Home.	
9. The user scrolls to the fragment record.	
10. The user press the recording button.	
	11. The app starts recording
12. The user clicks the stop button.	
	13. The app stops recording
14. The user chooses to upload the story on his user profile.	
	15. The app adds the story to the list in the user profile.

16. The user changes the status of the story to public.	
	17.The story is added to the list.
18. The user closes the application	
	19. The application closes.

Alternative flow(s):

- Operation failure: The user enters invalid data:
  - Invalid username.
  - Invalid password.
- Operation failure: In the case where the application is not working properly.
  - And/or the libraries are not functional.
- The user selects other options after the voice recording:
  - The user does not upload the voice recording
  - The user does not make the story public.
- The user chooses to login with a Facebook account.

REQUIREMENT 3: EXPLORE HOME AND PLAY A STORY FROM OTHER USER:

DESCRIPTION

The user will be able to explore the fragment home and listen to stories from other users.

USE CASE

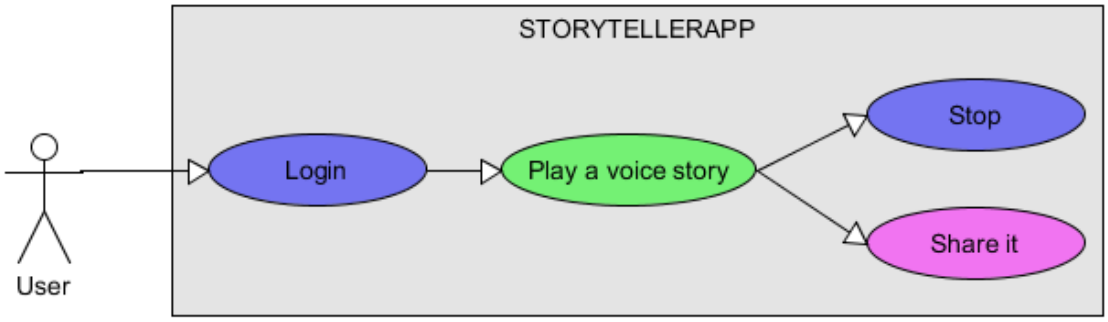
Scope

The scope of this use case is to allow the user to explore the Home fragment and play a story.

Description

This use case describes the process by which a user browses the story wall and plays of the stories.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user explores Home fragment and plays one of the stories.

Main flow

1. The application initialises.
2. The user is on the Home fragment and plays a story.
3. The story selected starts.

Descriptive Use case Scenario

user (Actor)	**StoryTellerApp**
1. The user turns on App	
	2. The app turns on. The welcome message is displayed. Options are displayed a) Sing in with Facebook account
3. The user sees the Facebook login request with email account	
	4. The app requests a Facebook account and password validation

5. The user enters facebook username and password and password.	
	6. The app validates facebook username and password
	7.The user profile is created
	8. The app displays the fragment home.
9. The user sees the story wall of the Home page.	
10. The user scrolls up/down	
11. The user selects one of the stories	
12. The user clicks the play button	
	13. The app plays the story selected
14. The user clicks the pause button	
	15. The app pauses the story
16. The user clicks the play button	
	17. The app continues playing the story
18. The user clicks the stop button	
	19. The app stops the story
20. The user closes the App	
	21. The app closes
Alternative flow(s): • The operation fails if the user enters invalid data: ○ Invalid username. ○ Invalid password.	

- The operation fails if the application is not working properly.
    - And/or the libraries are not functional.
- The user shares the story with other users.

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REQUIREMENT 4: FOLLOW ANOTHER USER

DESCRIPTION

The user will be able to follow other users.

USE CASE

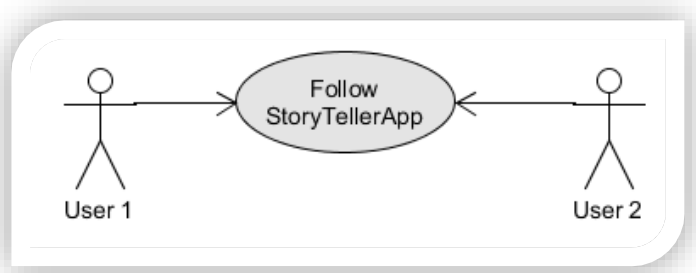
Scope

The scope of this use case is to allow the user to follow other users.

Description

This use case describes the process by which a user follows other users.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

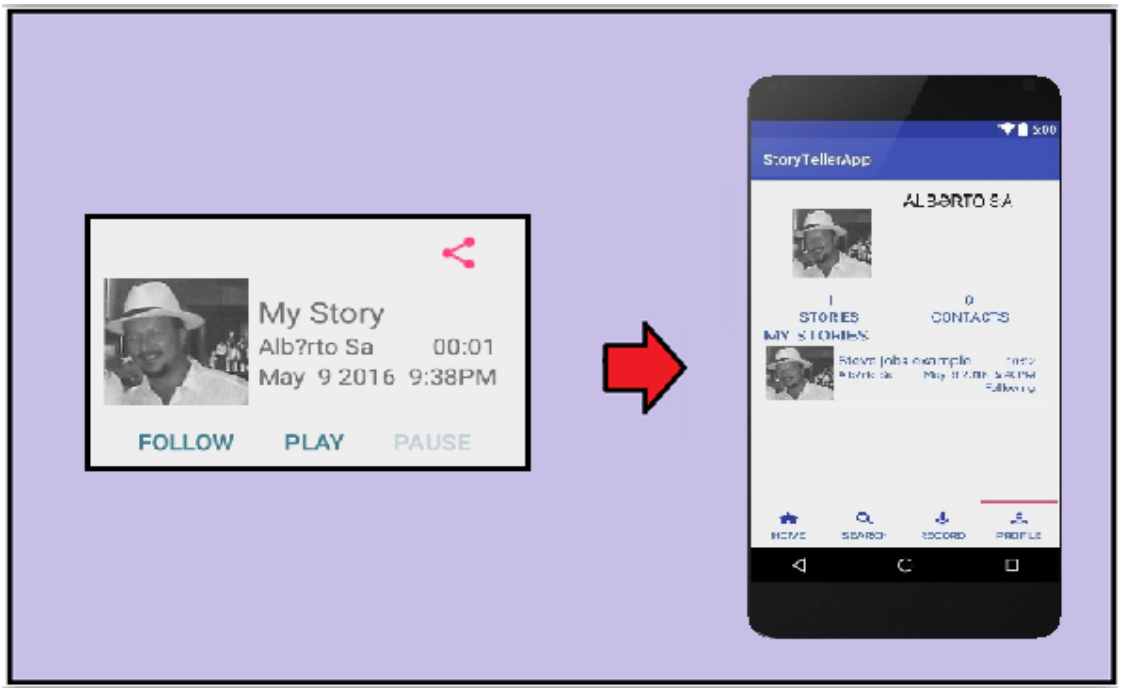
Activation

This use case starts when the user visits the profile of another user and click the follow button.

Main flow

4. The application initialises.
5. The user 1 sees and presses the user 2 profile picture.

6. The profile of user 2 is displayed.



Descriptive Use Case Scenario

user (Actor)	**StoryTellerApp**
1. The user turns on App	
	2. The app turns on. The welcome message is displayed. a) Sing in with Facebook account
3. The user sees the Facebook login request with email account	
	4. The app requests a Facebook account and password validation
5. The user inputs password and password validation.	
	6. The app validates facebook account and password
	7.The user profile is created

	8. The app displays the fragment home.
9. The user sees the Home.	
10. The user scrolls up/down	
11. The user selects one of the stories	
12. The user press a random user profile picture.	
	13. The app opens the profile of the selected user.
14. The user clicks the follow button	
	15. The follow button change status to followed
16. The user closes the App	
	17. The app closes

Alternative flow(s):

- The operation fails if the user enters invalid data:
    - Invalid username.
    - Invalid password.
- The operation fails if the application is not working properly.
    - And/or the libraries are not functional.
- The user shares the story with other users.

REQUIREMENT 5: SEARCH FOR A STORY OR ANOTHER USER

DESCRIPTION

The user will be able to search for a story or another user.

USE CASE

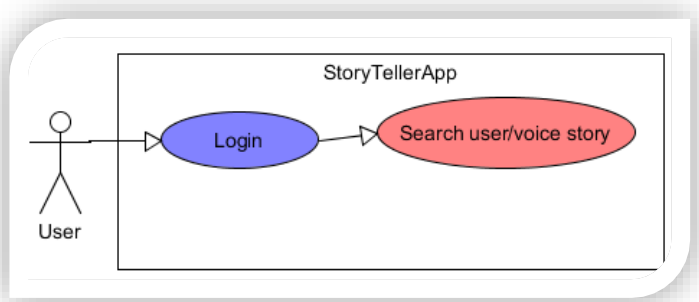
Scope

The scope of this use case is to allow the user to find other users or stories.

Description

This use case describes the process by which a user search for other users or stories.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user visits the search fragment and enters a user name or story title.

Main flow

- The application initialises.
- The user is in the search fragment enters a user name or story title.
- The story selected or the user profile displayed.

Descriptive Use Case Scenario

user (Actor)	StoryTellerApp
1. The user turns on App	
	2. The app turns on. The welcome message is displayed.

	a) Sing in with Facebook account
3. The user sees the facebook login request with email account	
	4. The app requests a Facebook account and password validation
5. The user inputs password and password validation.	
	6. The app validates email and password
	7. The app displays the home fragment.
8. The user sees the home fragment.	
9. The user changes to search fragment.	
10. The user enters a user name	
11. The user clicks search	
	12. The app displays the profile of the user searched.
15. The user closes the App	
	16. The app closes

Alternative flow(s):

- The operation fails if the user enters invalid data:
    - Invalid username.
    - Invalid password.
- The operation fails if the application is not working properly.
    - And/or the libraries are not functional.
- The user searches for a story name.

The main functionality of the application is to record, store and share the stories (voice recordings).

The user will have to follow the steps below:

- The red button to start recording.
- Stop button to stop recording
- Share button to share the story
- Checkbox to make the story public or private

The user will have three options once he stops recording:

- Delete the voice recording (by not uploading it).
- Add it to profile
- Publish it on the home fragment

The functional requirements of the mobile application are described in the use cases along with the description of each. These use case requirements are the basic functional requirements too.

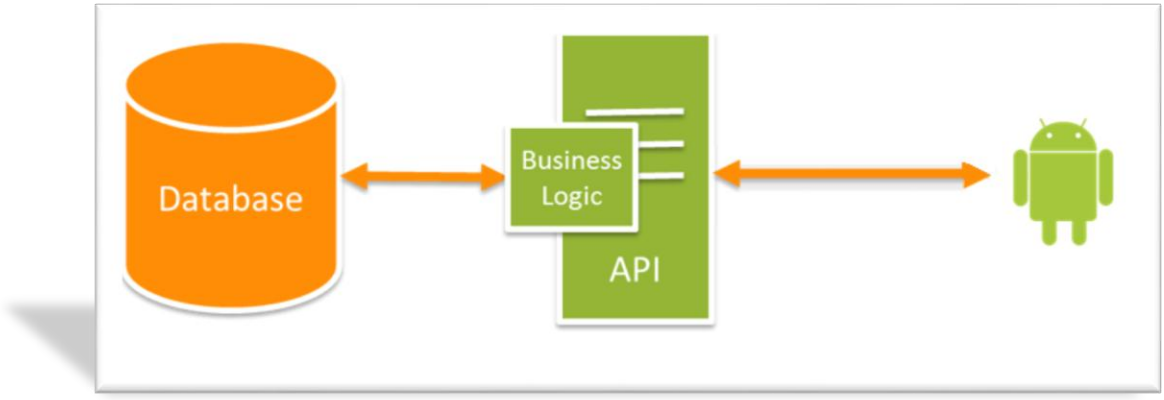
DATA REQUIREMENTS

The data requirements will be outlined and detailed in this section. The data will be stored in an SQL database hosted online. The database hold all the stories and users information

SQL Requirements: The application will retrieve and store all data on an SQL database hosted on a webserver. This will be the database for this application, with tables storing stories and user's data.

Web API

The data is accessed by the use of a web API's created in ASP.Net and connected to the database.



USER REQUIREMENTS

The user requirements and the use cases would be based on the requirements. The figure below represents the overall requirements of the system. Each use case requirement would be further discussed.

The user should have:

- **Mobile phone Android**: The operating system of the application is Android.
- **Facebook account**
- **Android 4.1, Jelly Bean**: The application is aimed at Android 4.10 or higher. The 88.7% of Android users will be able to use the application.
- **Internet access, WIFI & 3G**: The user needs internet connection to perform the following actions:
  - Access to Play Store
  - Download the application

  Allow the application to perform services and requests.
- **Play Store**: The user needs the Play Store Application installed to be able to download the application.

ENVIRONMENTAL REQUIREMENTS

The presence of the following requirements is essential throughout the development process of the Android Application.

- **Laptop**: A laptop, with enough resources to build and run the application i.e. 4GB+ of RAM, 50GB of Disk Space, 1.8GHz Processor+.

- **Windows OS**: This application was developed using a Windows laptop with Android development IDE, Visual Studio and SQL Management studio.
- **Android Device**: An android mobile phone is needed to test the capability of multiple requests, layout and compatibility.
- **Internet Access:** Internet access was required in order to test some functions in my application and connecting to database.
- **Paint and Illustrator**: Illustrator and paint were used to customize the logo and images during the development of the application.
- **Host:** This is required to hold the database in the server.

USABILITY REQUIREMENTS

This section highlights the usability requirements. These requirements provide concrete objectives during the interface and design process.

- **Understandable**: The Graphic user interface is easy to follow. All the activities of the application are very easy to understand.
- **Operable**: All the actions should be consistent. The application should explain where and when hypothetic errors occur enabling the user to solve the problem.
- **Ease of Use**: The application GUI is easy to use. A new user should figure out how to perform an action very easily.
- **Attractiveness**: The layout of the application and the bright colour scheme should be appealing to the user to create an enjoyable user interface.

PERFORMANCE/RESPONSE TIME REQUIREMENT

The recording system must respond to 99% of user requests within 1 seconds of the request.

AVAILABILITY REQUIREMENT

The application should be available to the users at all times.

The table below shows the availability percentage:

Availability Percentage	Approximate Downtime Per Year
95%	18 days
99%	4 days
99.9%	9 hours
99.99%	1 hour
99.999%	5 minutes

RECOVERY REQUIREMENT

The application will automatically save the stories in the case of failure.

The user will be able to click again on the app logo and continue using the application.

MAINTAINABILITY REQUIREMENT

In the case of failure, the expected data will not be corrupted.

If the application fails while a story is being recorded, the story will not be saved in the device database. If the story has not been recorded completely, the user will have to start the recording process again. (This scenario will be enhanced in future versions).

EXTENDIBILITY REQUIREMENT

The application may be updated with additional functionality over time with the objective of improving and offer more options to the users.

SECURITY REQUIREMENT

StoryTellerApp is a simple application that allows the user to post and share stories with other users. It is difficult to corrupt the system, as there is an optimal logic behind it.

The Application can be tested with accuracy and strict quality controls to bring the best service level to the user.

These tests are done every time there is a new improved release.

IMPLEMENTATION

The purpose of this section of the documentation defines and describes the technologies and methods used in the implementation of the Android Application.

TECHNOLOGY OVERVIEW

The original idea was to develop a native android application for android users as the number of android applications are growing considerably.

I used Android studio to develop the GUI and the functionality of the android application as this is the official IDE recommended by google. The reason behind this choice is that I am an android mobile holder and Android studio allowed me to use all the android device features. Android studio also provides consistency with the operating system and this will help the users to get familiar with the application.

I created a web API in ASP.Net which provides data to the android application and communicates with an SQL database hosted in the server.

Also, JSON has been used to communicate to the Web API and to retrieve data from the SQL database.

TECHNOLOGIES

Android Studio - Android Studio is the official integrated development environment (IDE) for Android platform development.

Java JDK - This is the programming language used to develop Android applications in Android studio. Java is used in the development of object-orientated software.

XML - Stands for extensible mark-up language. It is a self-descriptive language, which carries data for use in the Android Application. In Android, XML defines the initial user interface, provides localisation and internalisation.

SQL – This is the programming language which manages data held in the database management system.

SQL Express Server - This language will be used to connect the hosted database with the application

ASP.NET - Open-source server-side web application framework designed for web development to produce dynamic web pages. This is the environment used to create the Web API that communicates with the android application.

JSON - JavaScript Object Notation - open-standard format that uses human-readable text to transmit data objects consisting of attribute–value pairs. This data format sends data and receives the echoes from the SQL database.

Illustrator/Paint – Both programs have been used for the creation of the logo application and the buttons.

Libraries:

- **Gson -** open source Java library to serialize and deserialize Java objects to (and from) JSON.
- **Commons-IO -** Library of utilities to assist with developing IO functionality.
- **Volley -** HTTP library that makes networking for Android apps easier and faster.
- **Genymotion** – Android studio debugs emulator used for testing purposes.
- **Fabric SDK** –Crashlytics, Crash reporting solutions for testing purposes**.**
- **Facebook SDK** – Facebook Login and other features such as Facebook ads and graph API can be implemented in the application.

Developer Machine

A machine was used for development with the following specifications –

- Operating System: 64-bit Windows 10.
- RAM: 8GB.
- Processor: x64-based Intel Core i7-3612QM @ CPU @ 2.10GHz.
- Hard-drive: 1TB.

PROCEDURES

APPLICATION

In this document, I will describe the development of the different activities of the application.

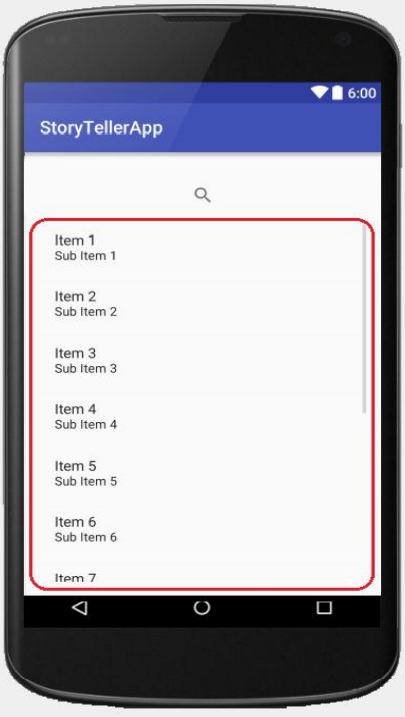
STORYADAPTER

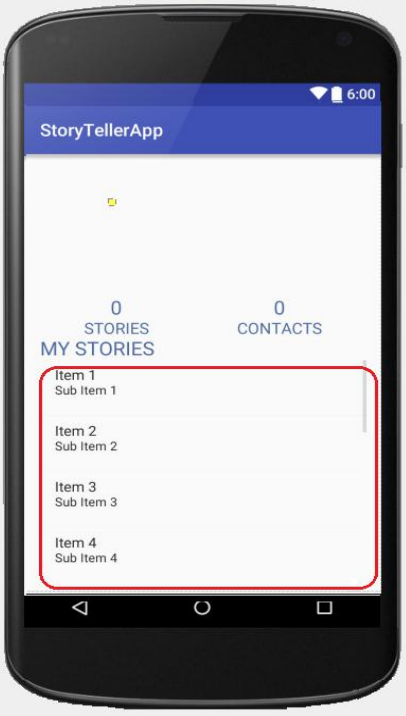
There are ListViews implemented in three fragments of the application. The mentioned fragments are fragment_home.xml, fragment_search.xml and fragment_profile.xml. In android studio a ListView always needs and adapter to be able to display the items (for example the messages of WhatsApp or the items for sale on eBay). In the case of this application, I created a common adapter for all the three fragments containing a ListView in order to display the content of the stories. The adapter displays the stories using the format of row_story.xml.

Design of row_story.xml

StoryAdapter.java

```
@Override
public View getView(int position, View convertView, ViewGroup parent) {
    View row = convertView;
    Holder holder;

    // Acquiring item to add in the list
    Story item = items.get(position);

    if (row == null) {

        // Inflating layout representing each item of list view
        LayoutInflater inflater = ((Activity) context).getLayoutInflater();

        row = inflater.inflate(R.layout.row_story, parent, false);

        // Initializing holder
        holder = new Holder();
        holder.titleView = (TextView) row.findViewById(R.id.title_textView);
        holder.createDateView = (TextView) row.findViewById(R.id.date_textView);
        holder.usernameView = (TextView) row.findViewById(R.id.username_textView);
        holder.durationView = (TextView) row.findViewById(R.id.duration_textView);
        holder.publicView = (TextView) row.findViewById(R.id.public_textView);
        holder.photoView = (ImageView) row.findViewById(R.id.photo_imageView);
        row.setTag(holder);

    } else {

        // Getting holder form existing view
        holder = (Holder) row.getTag();
    }

    // Setting values to holder
    holder.initValues(item);

    return row;
}
```





JSON REQUESTS TO LOAD DATA FROM SERVER

The three fragments mentioned before use JSON requests to load the data and display the content of the stories. The client communicates with the server sending data requests and the server replies with the requested data.

The screenshot below shows an example of how data is loaded in the home fragment.

```
private void loadDataFromServer() {
    JsonArrayRequest req = new JsonArrayRequest(String.format("%s/Stories", Common.getServerUrl(getActivity())),
```

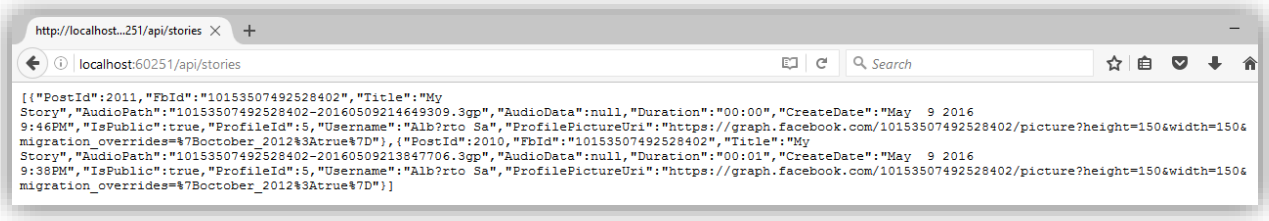
JSON invokes the method *Common.getServerURL (Method declared in folder Common) which is the URL of the localhost where the Web API provides the information.*

```
public static String getServerUrl(Context context) {
    String ip = getSharedPreference(context, "server_url", "192.168.1.14:60251");
    return String.format("http://%s/api/", ip);
}
```

Once data is retrieved I added to the list using the following for loop

```
// looping through json and adding to stories list
for (int i = 0; i < response.length(); i++) {

    try {
        JSONObject story = response.getJSONObject(i);
        stories.add(gson.fromJson(story.toString(), Story.class));
    } catch (JSONException e) {
        e.printStackTrace();
    }
}
```

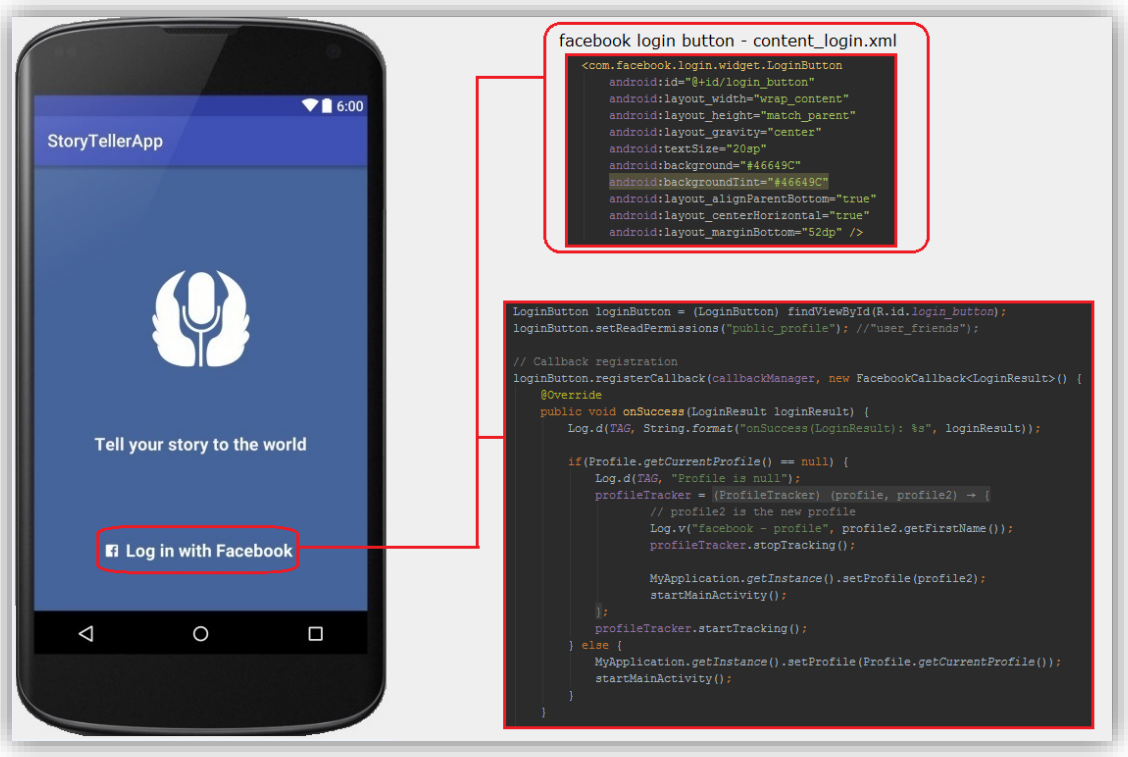
The Web API shows the data stored in the SQL database.



HomeFragment. java, ProfileFragment.java and Searchfragment.java use basically the same code to retrieve data from the server.

LOGIN ACTIVITY

The Login activity displays the application logo, the starting message "Tell your story to the world" and the facebook login button. One of the first steps in the development of application was to set up a facebook developer profile in order to do that I downloaded the facebook sdk and followed the instructions to implement the facebook login. All the instructions and code to implement the facebook login are provided in the developers.facebook.com website.



HOME – HOME FRAGMENT

The fragment home will be the first visible "activity" once the user has logged in the application. Each time the user records and posts a new public story this will be added to the list.

The data is loaded from the server and displayed with the layout of the row_story.xml

SEARCH FRAGMENT

The search fragment is the second fragment of the application. It can be accessed by swiping to the left or pressing the lens button. This fragment also has a ListView and the stories are visible once the user has entered a query.

It uses the same JSON request to retrieve the queried data from the server.

```
JsonArrayRequest req = new JsonArrayRequest(String.format("%s/Stories?token=%s", Common.getServerUrl(getActivity()), token),
```

RECORD FRAGMENT

This is the fragment where the user records and uploads the voice stories. The media recorder functionality of the device is used to perform the actions of recording the audios.

The user has to press the stop button to stop recording, the play button to play the story and if the user is happy with the upload button will allow the user to upload the story to one of the lists or both.

Every time a user uploads a story a new post is created and data is stored in the server database.

```
// Uploading
JsonObjectRequest req = new JsonObjectRequest(Request.Method.POST, String.format("%s/Posts", Common.getServerUrl(getActivity())),
        jsonObject,
```

PROFILE FRAGMENT

The last fragment visible to the user contains a list of private stories that the user can make public anytime. It loads data from the server using the same JSON requests as the previous fragments.

STORY DIALOG

The story dialog is displayed in the application when the user selects one of the stories of the list. The layout can be found in fragment_story_dialog.xml.

Story Dialog contains the following:

- Facebook user profile picture and name.
- Four buttons (Make public, Follow, Play and Pause) and one ImageButton to share stories with other social media applications.

In this document I will outline three of the functionalities of the dialog:

- Share the story
- Make it public
- Play a story

Share the story

The screenshot below demonstrates the layout of the story dialog and the method to share stories.

The code starts a new activity on the android device using an intent:

```
startActivity(Intent.createChooser(share, "Share Your Story"));
```

Change the status of the story

The code below shows how JSON request updates the status of the story.

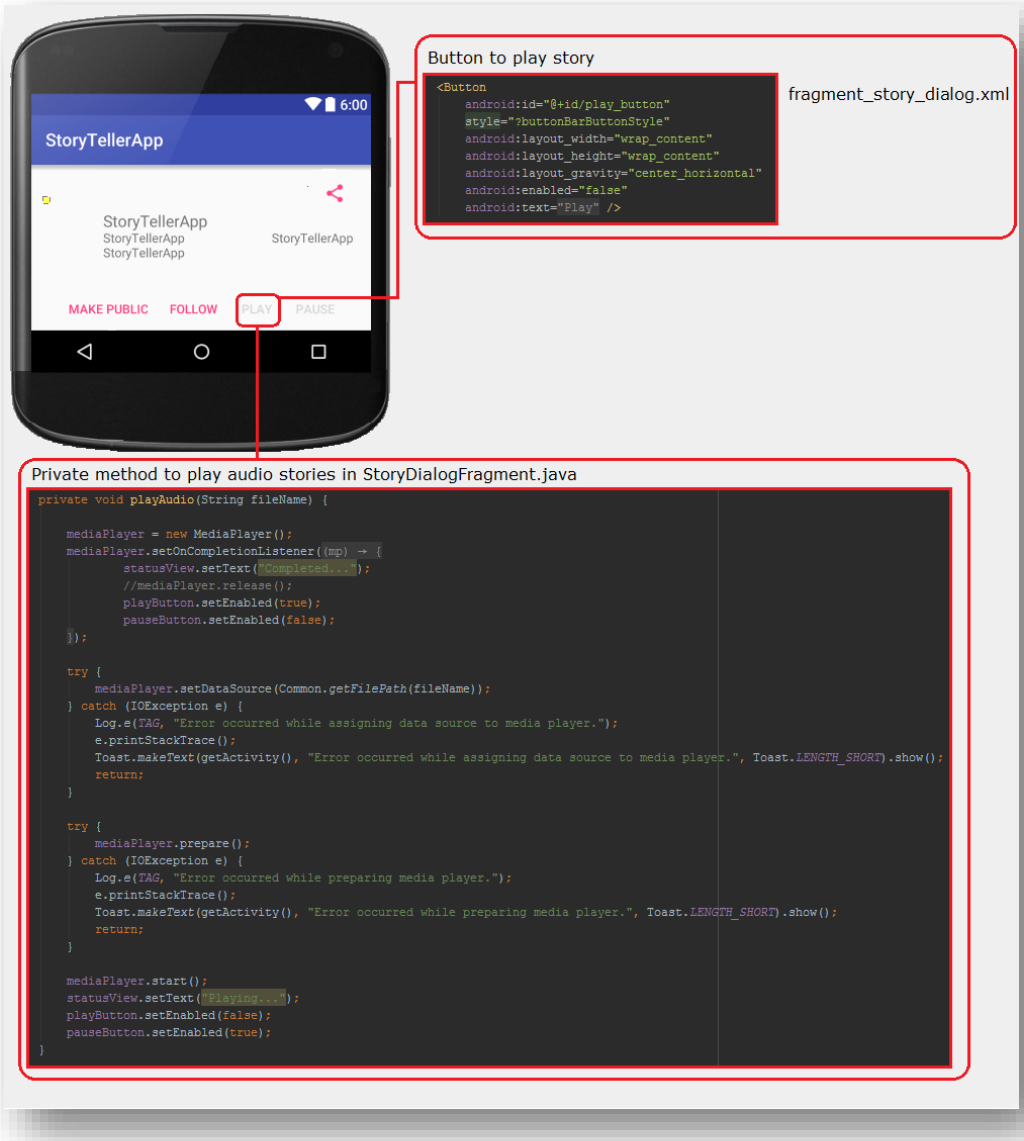
```
JsonObjectRequest req = new JsonObjectRequest(Request.Method.PUT, String.format("%s/Posts/%d", Common.getServerUrl(getActivity()), post.getPostId()),
        jsonObject,
```

Play a story

The layout of the button is visible in the screenshot.

The application loads data from the server and then connects the media player to play the stories selected.

```
private void downloadAudio(int postId) {

    JsonObjectRequest req = new JsonObjectRequest(
            String.format("%s/Posts/%d", Common.getServerUrl(getActivity()), postId),
            (response) → {
```



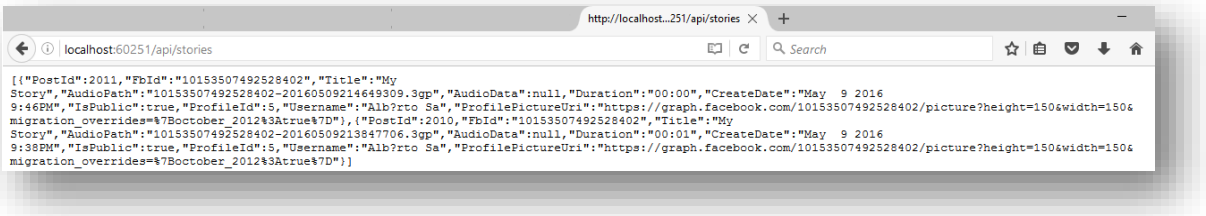
SERVER SIDE AND DATABASE

Web API's were created in ASP.NET to communicate and query the database.

The code below shows an example of one of the queries.

```
// GET: api/Stories
public IQueryable<StoryDto> GetStories([FromUri]string fbid = "", [FromUri] string token = "")
{
    var query = db.Stories
        .Select(s => new StoryDto
        {
            PostId = s.PostId,
            ProfileId = s.ProfileId,
            FbId = s.FbId,
            AudioPath = s.AudioPath,
            Username = s.Username,
            Title = s.Title,
            ProfilePictureUri = s.ProfilePictureUri,
            Duration = s.Duration,
            CreateDate = s.CreateDate,
            IsPublic = s.IsPublic,
            AudioData = null
        })
        .AsQueryable();

    if (string.IsNullOrEmpty(fbid))
    {
        query = query.Where(s => s.IsPublic);
    }
    else
    {
        query = query.Where(s => s.FbId.Equals(fbid));
    }

    if (!string.IsNullOrEmpty(token))
    {
        query = query.Where(s => s.Title.Contains(token) || s.Username.Contains(token));
    }

    return query.OrderByDescending(s => s.PostId);
}
```

And the result displayed on the local server.

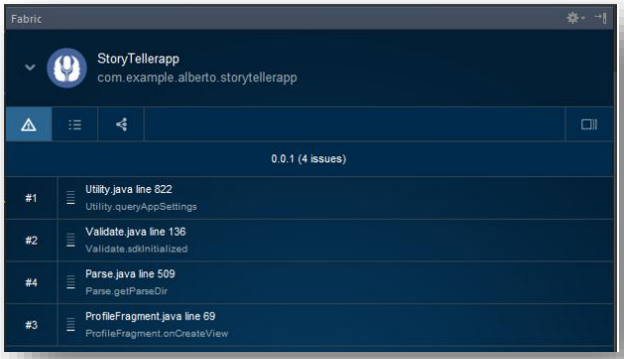


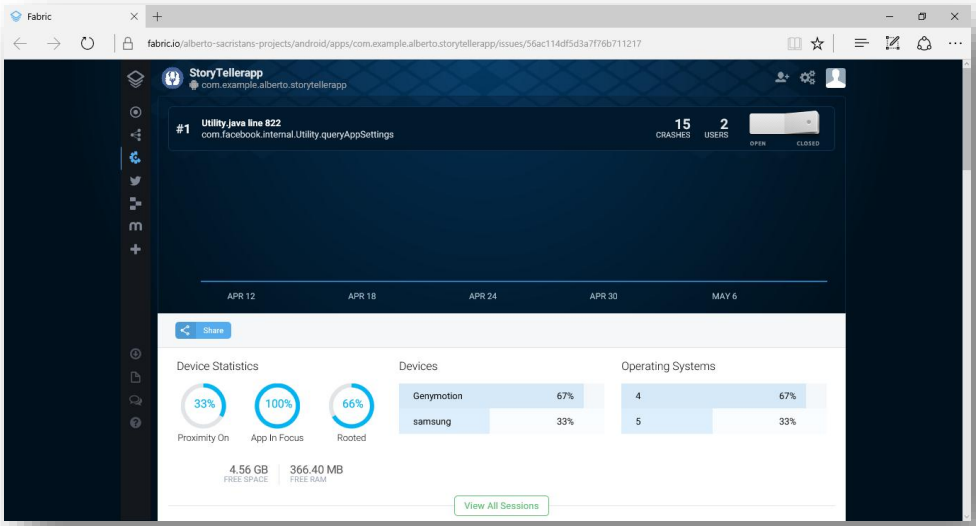
TESTING

Testing is a vital part of the development of the project. I have performed a number of actions in order to fully test my application. Also, I set a number of voluntary testers in order to get feedback for further development.

UNIT TESTING

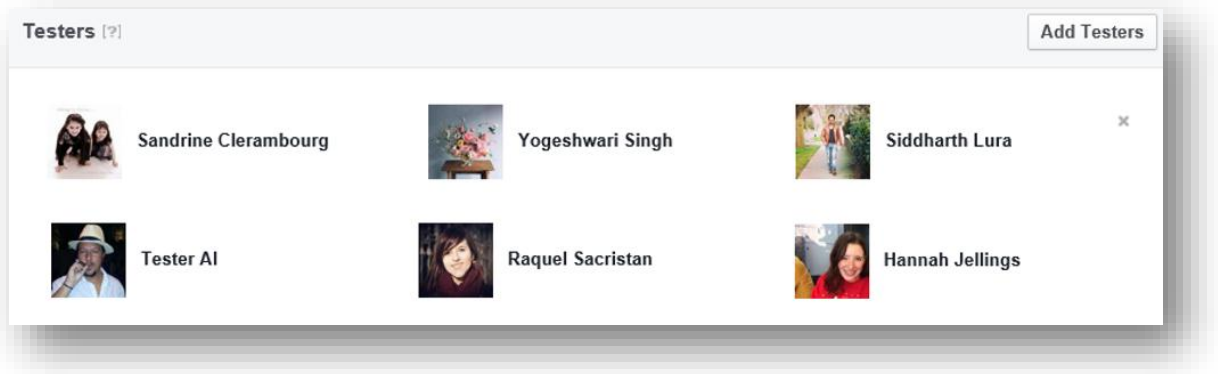
I conducted tests with the application from the initial stages of the project until the applications completion. Each function or change I made to the application was immediately tested using an android mobile device. I also used Crashlytics a testing application tool to force crashes and find possible vulnerabilities.





MANUAL TESTING

I requested from a certain number of people to become the first application testers and provide some feedback, information or report possible bugs.



Tester AI - I created another account on facebook in order to test the application from the tester point of view.

Sandrine Clerambourg - Married, 2 daughters

"I like the application; it is very easy to use. I will use it with my girls to script audiobooks and post them so everybody can listen to us."

Yogeshwari Singh – Married, 2 daughters

"The application is great; It is like the Instagram of audios. The design looks similar to facebook. I like the logo."

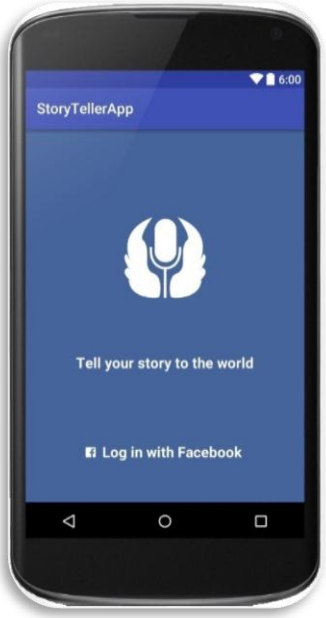
Siddarth Lura – Single, no children

"I like the application and definitely I will use it once the application is in the store. I could be using it to comment and post my travelling experiences/stories".

Hannah Jellings - Single, no children

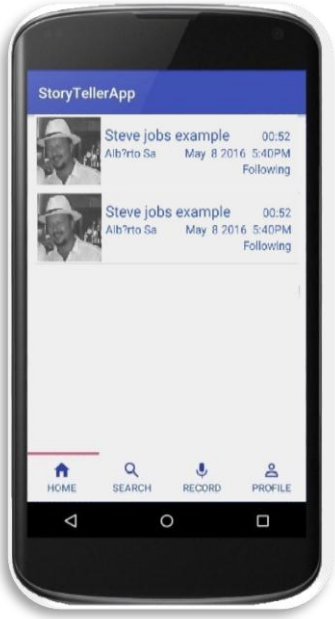
"I think it is a great idea. I will definitely will use it with my family and friends. It is a good application to tell your thoughts and listen to the thoughts of other people."

GRAPHICAL USER INTERFACE (GUI) LAYOUT



Sign in

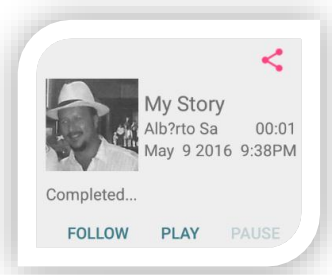
- Facebook – User can login using a Facebook account.

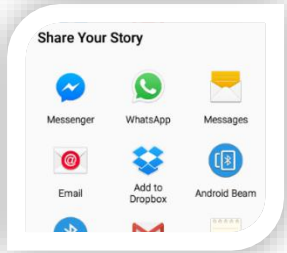


Home fragment

- Play a story – User can browse and play a story
- Pause – User can pause the story
- Stop – User can stop the story.
- The user can move from home page to search record or profile pages.

Story dialog

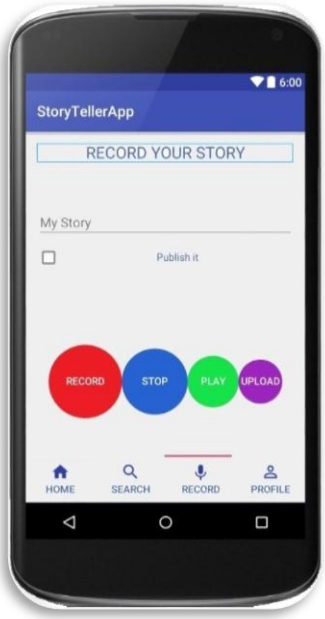




- **Play button**: The user clicks the play button to play the story.
- **Pause button**: The user clicks the pause button to pause the story.
- **Stop button**: The user clicks the stop button to stop the story.
- **Share stories**: The user can share the stories via the social networks.

Search fragment

- The user can search stories or users
- The user can scroll from the search fragment to the other fragments.



Record fragment

- Record – User can record a story.
- Stop – User can pause the story.
- Play – User can play the story.
- Upload – User can save the story in the database.
- Share – User can share the story in the social networks
- The user can scroll to other fragments.

Profile page

- Play story – The user can play the stories of the profile.
- Pause – The user can pause the story.
- Stop – The user can stop the story.
- Follow user – The user can follow other users.
- Options –The user will be logged out.

CONCLUSIONS

I have been imagining how my final year project would be since a long time. I have to say that I have enjoyed developing my project. I found Android studio easy to use and helpful tool to develop mobile applications. The android emulators are not great so I had to use my own device for testing purposes. The fact that I had to test the application on my own device made the experience even better.

During the project journey I have encountered many errors, some of them were the simple things to resolve but it took me some time to figure them out. I remember the method of "divide and conquer" to find error causes in communications and this is what I have applied in this project to not be overwhelmed.

I found very important time management for the final year project.
When I designed the project plan for the first time I was not sure about the time allocated to each of the tasks and if I would really have that time.

I am happy to have delivered a project meeting the majority of the requirements. There is something I could not complete and is the follow/follower functionality. Facebook sdk provides this functionality to websites only, not to android mobile phones. Another feature I would have liked to implement would be a rating system that would allow users to rate each other stories. Both things will be implemented in future versions as I will continue improving this application after the project.

I am overall very happy with the progress I made through my project and I will continue working on it.

FURTHER DEVELOPMENT OR RESEARCH

The concept of this application can be applied to other applications. I think we will have more and more application involving audio features. I intend to publish the application soon and seek feedback from the users in order to continue improving it.

I will improve some of the features a part of the follow/follower and the rating system mentioned before. For example, one of them coming to my mind right now is that the user could swipe images while listening the story or implement stories with different paths so the users can choose their own story ending.

I would like to implement voice features to use application without holding the phone. For example, be able to make a query in the search activity using only the voice.

I have seen other storytelling applications on the stores and I think this one will make the difference as all the stories will be personalised. It will be interesting the feedback that I get at the presentation and the showcase to explore new ideas or implementations for the application.

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MONTHLY JOURNALS

SEPTEMBER

I have been thinking about the final year project since the first year of college. I did not realize that I am already in the fourth year and this is the moment where I have to start doing it.

But what am I going to do for the final year project? Why? How? When? All of them typical questions of final year students involved in the final year project.

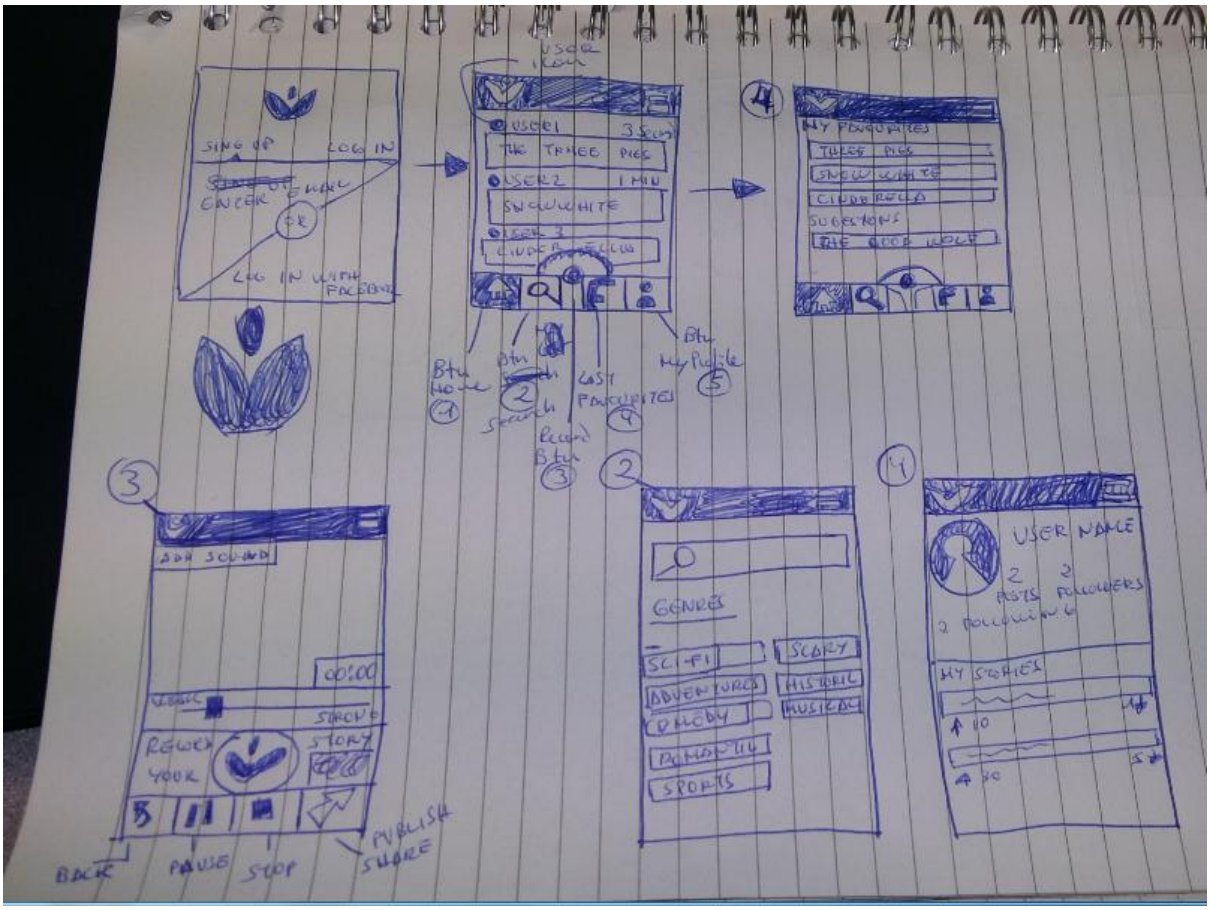
My mind was in blank, I did not have any idea. I was imagining myself at the final year presentation inventing and telling a story of how I was unable to do something.

Public speaking is not one of my strengths. I always admired how the storytellers speak in public, the way they use to capture the attention of the audience and the way they make them play with their imagination.

I had the idea for the project straight in front of me. Why not create a storyteller mobile app?

But how?

I started to imagine the app in my mind and I drew it in paper:



The picture above (I know it is not that great) shows the first idea of what the app would be.

I started the research once I took the decision to go ahead with this idea. Then I started writing the project proposal and send few emails to the lectures for opinions.

I received the following opinions:

"It is a very interesting project. I would advise you to be as ambitious as possible with it. It has the potential for very good marks."

"I don't think it is a good project idea. Social networks are not built around one type of technology or media type distribution. Those are built around a value creation aspect that drives masses to participate. Why would people use your app if there is YouTube, Vine, Instagram, even Coub etc? Yes, the videos there are short (Vine, Instagram, Coub), but they do tell a story the same way you are describing. If you would like to create an app simply for recording audio books read by parents for their children – that can be an interesting project from my personal point of view, if it is done right and put in right context."

"You have something here, especially the "Listening" one"

I will start the creation of the requirements and diagrams in this month.

The next update of the journal will be soon and I will be adding few bits of what the project will be.

OCTOBER

My Achievements

During the month of October, I continued with my research about the project. I came across to very good ideas and tools to develop it. I had a better idea about how the project would be and the best approach to use.

I designed the GUI of the application using paint and then I started to create diagrams for the software requirements documents.

While I was preparing the documentation I started to prepare the software required. I downloaded Android studio, bought some Android tutorials and loaned a couple of books from the NCI library.

By the end of October, I was able to complete the software requirements specification document.

My Reflection

Once all the requirements documentation is completed, it will become the bible of the project, a guide to follow to create the application following the steps and in an easily way.

I met my supervisor to have a first contact and have feedback about the project and about the documentation. The feedback was good, and that motivates me to deliver a good project at the end of the final year.

Intended Changes

As mentioned in my previous journal, I will be using tools that I never used before like Android studio.

The objectives for the month of November are:

- Start Design and analysis.
- Complete the Android tutorials.
- Start coding for the mid-term presentation.

Supervisor Meetings

Date of Meeting: 05/11/2015

Items discussed: Project, design, deliverables, support, availability

NOVEMBER

My Achievements

During the month of November, I continued working in the design.

Even if I already delivered part of the application design in the requirement specification document I added more diagrams and thought about how the application development and database will be.

I continued with my research and android tutorials to start building the application.

By the end of November, I was able to complete the analysis and design specification document.

My Reflection

So far I am happy with the idea and the documents delivered.

I like the idea of start developing the application and see if I was right with my design and requirements.

I will contact my supervisor again after this deliverable and before the midterm presentation.

Intended Changes

There will be changes while I will be building the application. Those changes will come while I work on it

The objectives for the month of December are:

Finish the Android tutorials.

Start building the application.

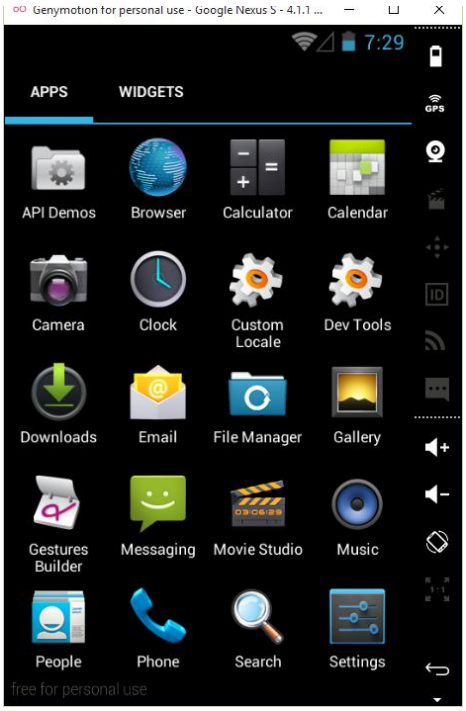
Supervisor Meetings

I have not meet my supervisor during the month of November but I intend to communicate with him in December.

DECEMBER

Finished one of the android tutorials.

Installed in Android Studio the emulator Genymotion which is much faster than the Android emulator.



Research more information and tips to build the application.

My Reflection

This month and the month of January is where I will have more work.

I found the tutorials very useful and now is time to start preparing the app for the midterm presentation.

During these two months I will be basically coding.

Intended Changes

The objectives for the month of December are:

- Start building the application.
- Prepare midterm presentation.

Supervisor Meetings

I have not meet my supervisor during the month of November but I intend to communicate with him in January.

JANUARY

Reflective Journal - January

Student name: Jose Alberto Sacristan Alvarez

Programme: BSc in Computing

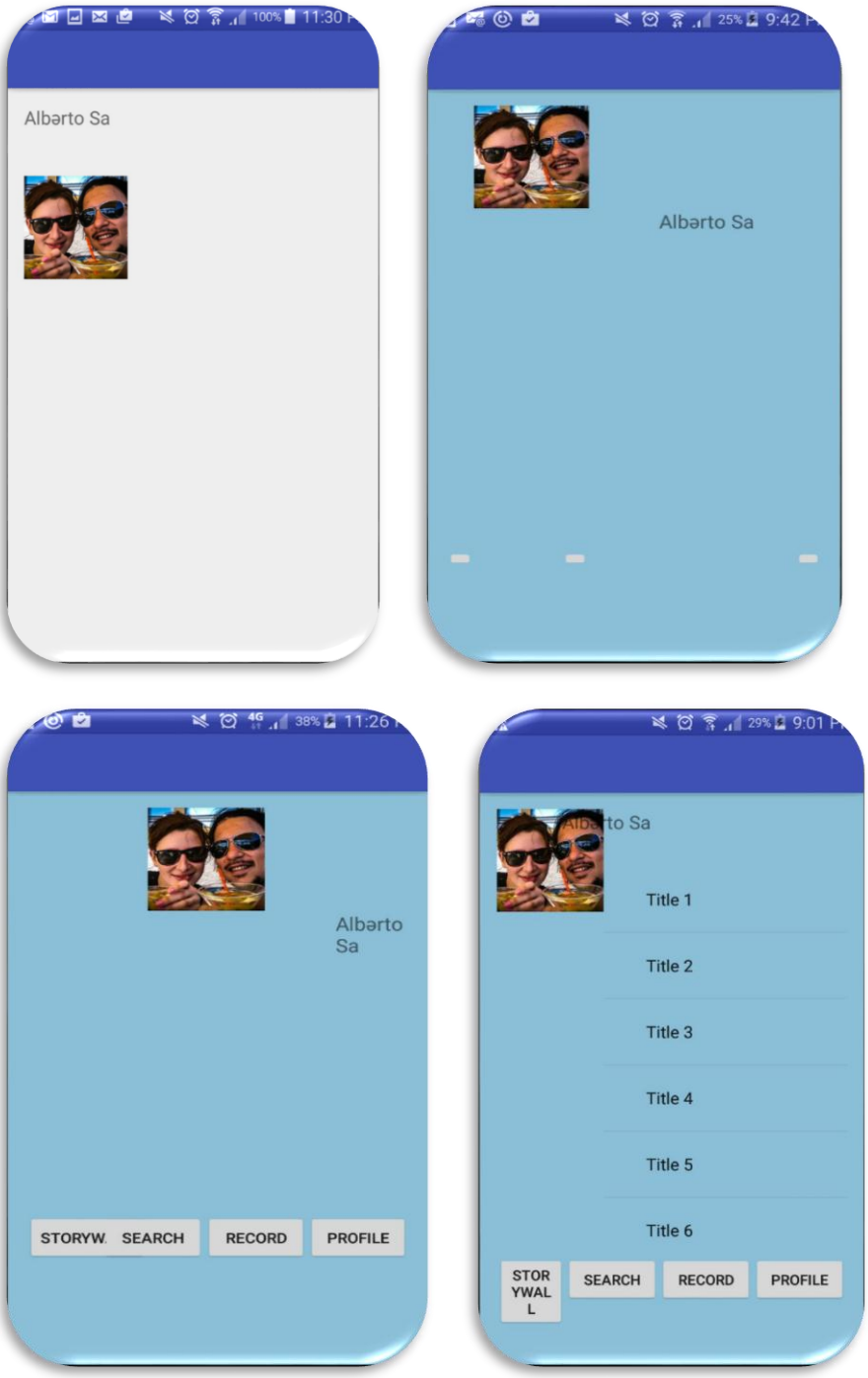
Month: January

My Achievements

After Christmas and exam period I focused more in the prototype application.

I implemented the Facebook Sdk and the Facebook login

And I experimented with the tabs, buttons and list views.



I managed to build the prototype for the presentation and I set the bases to continue with the media recording implementation.

I found Fabric.io and I installed Fabric sdk.

I will be using Crashlytics, which will help me with the resting reports

My Reflection

During the month of January, I made some changes and took the decisions on how to make the app and I started to build it.

Then I started to build the app.

Intended Changes

I will cancel the email login. I will leave only Facebook login for the following reasons:

- Security – Users have to provide phone number /email to have a Facebook account.
- Data – Facebook API provides user data that can be stored in the database.

In further development this can be added alongside other social networks logins.

Other change is that all the audio files from the wall and from the profile will be stored in the server database. The reason behind is that in that way the audio files are not stored in the SD card.

Supervisor Meetings

I have not meet Paul after the Christmas/exams period but I intend to talk to him soon.

FEBRUARY

Student name: Jose Alberto Sacristan Alvarez

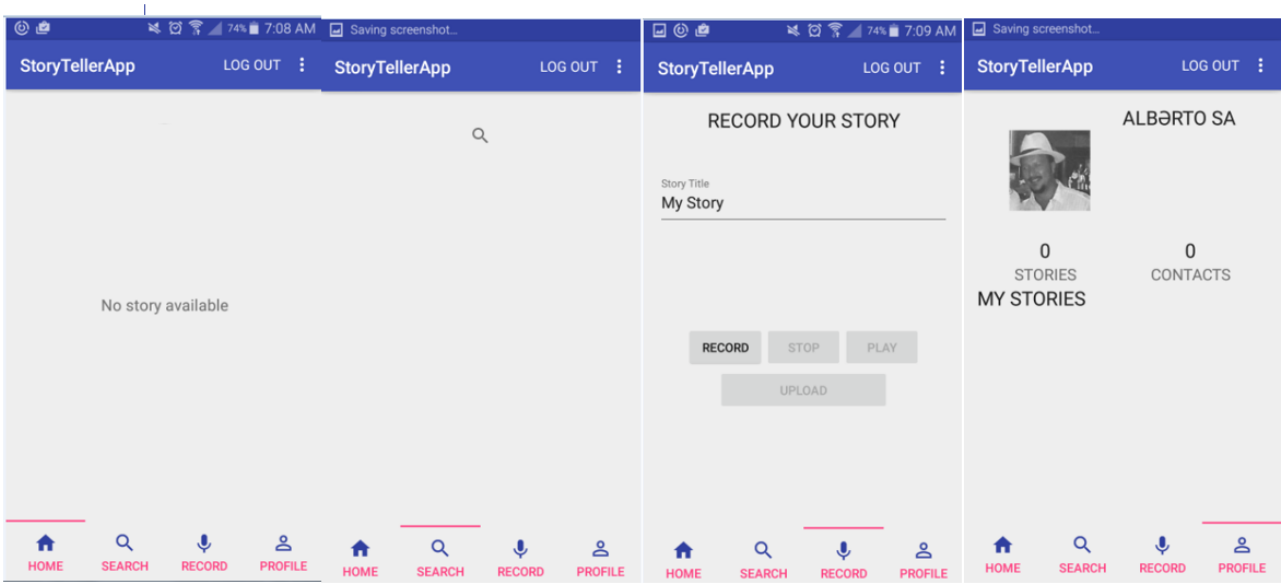
Programme: BSc in Computing

Month: February

My Achievements

February was the month of the midterm presentation

I completed the prototype with different activities before the presentation and I implemented the media recording functionality.



My Reflection

With the media implementation I feel I am on track to deliver the project as planned even though other assignments requires more time than expected.

Next step is start working in the server side.

Intended Changes

In previous journal I mentioned changes about login and storage.

I am planning to make other change and is to replace the initial idea of using php and mysql and use .net instead.

The reasons for this change would be the following:

- College recommendation

- I could use visual studio at work and gain some time to work in the project.
- I feel more comfortable using visual studio.
- .Net is a very solid option

Supervisor Meetings

No meetings for me moment. I intend to meet Paul during this month

MARCH

Student name: Jose Alberto Sacristan Alvarez

Programme: BSc in Computing

Month: March

MY ACHIEVEMENTS

This month I have organised my time to be able to work in the final project and the projects for other modules. Mainly I have been working in the database and the server side of the application. The application functionality and design is done and is working as the audio recordings are being stored in the phone memory but not displayed yet.

I also have created the application logo.

MY REFLECTION

March has been a difficult month for the project as I had to be allocated more time to deliver other projects and combine college with working hours.

Overall I am happy with the project but I wish to have had more time to work on it.

I will dedicate more time to the project after the exams.

SUPERVISOR MEETINGS

I have not met my supervisor last month. I will meet after the final year exams.

APRIL

Student name: Jose Alberto Sacristan Alvarez

Programme: BSc in Computing

Month: April

MY ACHIEVEMENTS

This month I managed to develop most of the deliverables of the application. Server and database are communicating as expected and android application is loading the data from the server. I could not manage to complete the follow/follower functionality.

MY REFLECTION

Overall I am happy with the project and I will continue improving the application to put it in the android store.

PREVIOUS TECHNICAL REPORT

National College of Ireland

BSc in Computing

2015/2016

Jose Alberto Sacristan Alvarez

X12108286@student.ncirl.ie

StoryTellerApp

Technical Report

CONTENTS

EXECUTIVE SUMMARY

The purpose of this report is to show how important storytelling is in our daily lives through the mobile application named "StoryTellerApp". This application will give the users the ability to perform many actions using voice recordings.

The users can record, store and share their stories (voice recordings) with other users and the rest of the world through social networks.

The intended audience would be all Android phone holders with a Facebook account who actively share information via the social networks such as Facebook, twitter or WhatsApp.

STRUCTURE

There are three main sections in this document; (1) proposal (2) requirements and (3) design.

The first section details the project background, the main aims and the technologies used.

The second section details the functional requirements, data requirements, environmental requirements and usability requirements present.

The third section details the design and architecture of the application.

There are other sections following containing conclusions related to the project, description of further development, the bibliography and the appendix with the documents previously submitted alongside the monthly reflective journals.

INTRODUCTION

We are currently living in an era where many aspects of our lives are coordinated through devices such as mobile phones. The amount of mobile phone applications and social networks currently in the market are vast and growing at an exponential rate. Many applications offer users a unique experience to post a vast array of content such as messages, videos, pictures, recipes and so forth.

The idea for this project is to create a story telling mobile application. In this application, a user can record a story and share it with other users. As an example, a father who lives far from his family could read a small story and record it for his children/wife. This storyteller application could be also used for other concepts too, such as to express an idea or verbal comments with other users via voice messages.

The scope of the project is to develop an android mobile application that the users can download from the store and perform the following actions:

- Sign in with a Facebook account.
- Log in, keep logged and log out from the application.

- Browse, listen and share the stories of the Story wall.
- Record/Pause/Stop a voice recording.
- Publish a voice recording.
- Delete the voice recording.
- Share the voice recording with other users via other social networks.
- Follow and be followed by other app users.

There is no other mobile app that focuses exclusively on the personal voice recorded stories.

BACKGROUND

Like many other people, I am a user of different mobile apps and social networks such as Facebook, LinkedIn, twitter, Instagram, WhatsApp etc.

The reason I have chosen this project is that I would like to create a social network application where users can share their creative experiences and also; be creative. Social networks are mostly based on written comments, videos and pictures and offer users little opportunity to vocally express themselves.

With this application, the user, such as a child, could play a story which has been scripted by a parent or relative without having to look at the mobile device. (They would also be able to do so safely with the application having x y parental/safety features installed). This could be an ideal alternative to the traditional book at bedtime and could be particularly engaging/fun experience for the child if the parent is away and has pre-recorded a story for them.

The application also has further potential (in later versions) to be enhanced with visual information such as pictures or animations or sound effects which would further enhance the users experience. The user, for example, could listen to the pre-recorded story through their headphones whilst also 'swiping' through matching pictures of the story.

This App will teach people to play the other's stories and listen to the experiences of others through the use of mobile technology.

There are two main reasons for developing this project.

Storytelling is beneficial to us in many ways and it has been scientifically proven. [3]

Storytelling affects the brain.

During the process of storytelling, the Human brain releases substances like cortisol, oxytocin and dopamine. [3]

- Cortisol heightens brain arousal, increasing our attention.
- Oxytocin is associated with caring, connectivity and empathy for others
- Dopamine release helps to improve the accuracy of memory

Storytelling is also associated with specific aspects of brain functioning [3]

- Neural coupling process – Enabling the listeners to turn their creative thoughts or experiences into stories??
- Cortical activity – The listener processes the facts of the story through many areas of the cortex (motor, sensory and frontal cortex).

One of the most interesting processes of story teller is mirroring where both speaker and listener experience the same brain activities mentioned above.

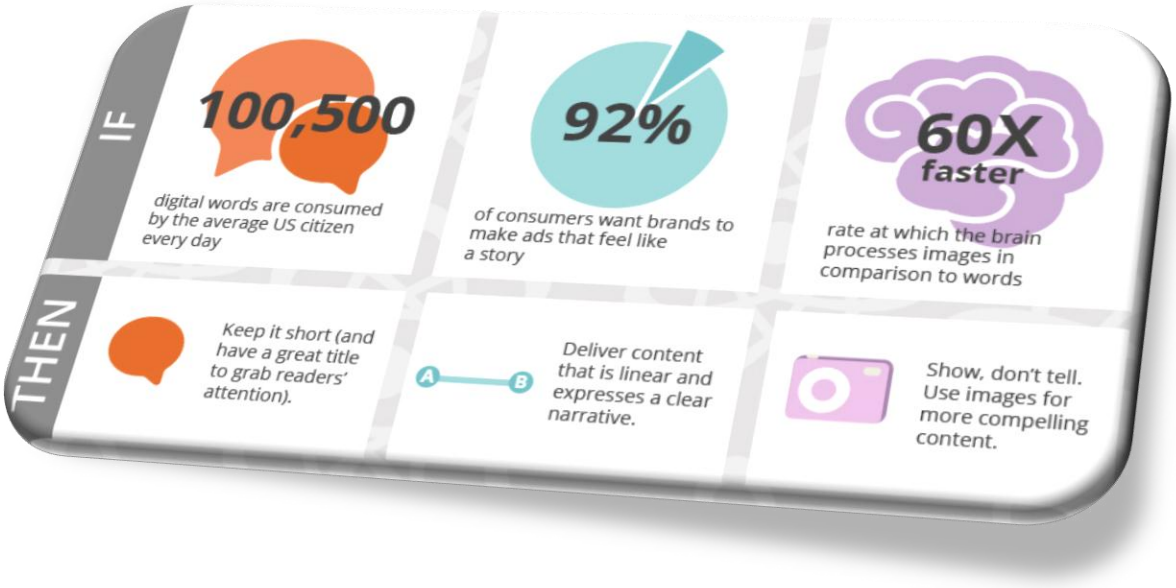
There are more benefits related to storytelling, some of them very important for our daily life:

Some of them are:

- Public speaking skills.
- Listening skills.
- Creativity.
- Memory.
- Knowledge.
- Language vocabulary
- Social connection.

Storytelling is also important for children during their learning/developmental phases and additionally as a means to build a connective bond with their parents.

StoryTellerApp will give everybody the opportunity to share stories with the world.



Commercial potential:

StoryTellerApp is based on user contributed stories. This includes audio voice recordings enabling the user to relax and listen to the stories without viewing the mobile phone screen.

In the last 3-4 years, the mobile application market has experienced a growth of applications based on audio.

For example **WhatsApp,** sends 200 million voice messages a day, which means that talking and recording messages may be more convenient than phone calls. [7]

"***Voice Messaging*** *allows you to send your recorded voice as a message. We made an effort to build a user experience across all of our platforms that are as similar as possible, but we encourage you also to spend time reading the articles below to better understand how Voice Messaging works on your smartphone*" [11]

Google introduced Voice search in 2013, "*a Google product that allows users to use Google Search by speaking on a mobile phone or computer".* [12]

Also, **Facebook** messenger uses the voice/audio services.

So there is commercial potential for voice and audio applications, and stories.

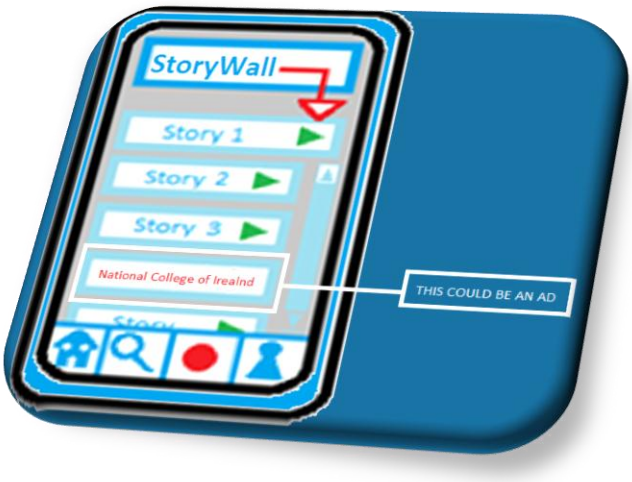
What differences StoryTellerApp from other storytelling applications?

The storytelling market is quite small. The main difference with the StoryTellerApp is it allows users to record their own voice stories and share them with the entire world.

Other story telling applications use text stories where the users have to read the stories, others use the same voice to tell the stories and others simply are links to a youtube video. (For example Storyteller Audiobook player, Storyteller, Storyteller or Storyteller free).

Advertising in StoryTellerApp

The ads can be embedded in the list "StoryWall" (ex. Every ten stories).



The stories can also promote a product/destination/business etc.

New concepts can be done using the same principles of the application.

AIMS

One of the main aims of this project is to give everybody the opportunity to share their knowledge, experiences and stories through this application and with their voices. The application users will be able to perform a number of actions using voice recordings. For example, recording a story, sharing the story or playing stories made by other users. These stories can then be made public or to share privately with friends or family.

A further aim of the project is for the application to be user friendly for Android phone holders.

TECHNOLOGIES

Android Studio 1.5.1 - As we were developing an Android mobile application, Android Studio was the obvious choice for this development.

Java JDK - This programming language is the most used language to develop Android applications in Android studio.

SQLite - SQLite Database – Comes as a free downloadable plugin to work with either NetBeans or Android Studio.

PHP - Server-side scripting language designed for web development but also used as a general-purpose programming language. This language will be used to connect the hosted database with the application

MySQL - Open source relational database management system. The database where all the audio files will be stored

Genymotion – Android studio debugs emulator used for testing purposes.

Fabric SDK –Crashlytics, Crash reporting solutions for testing purposes

Facebook SDK – Facebook Login and other features such as Facebook ads and graph API can be implemented in the application.

Byet.host (https://byet.host/free-hosting) - Host chosen to hold the files database.

SYSTEM

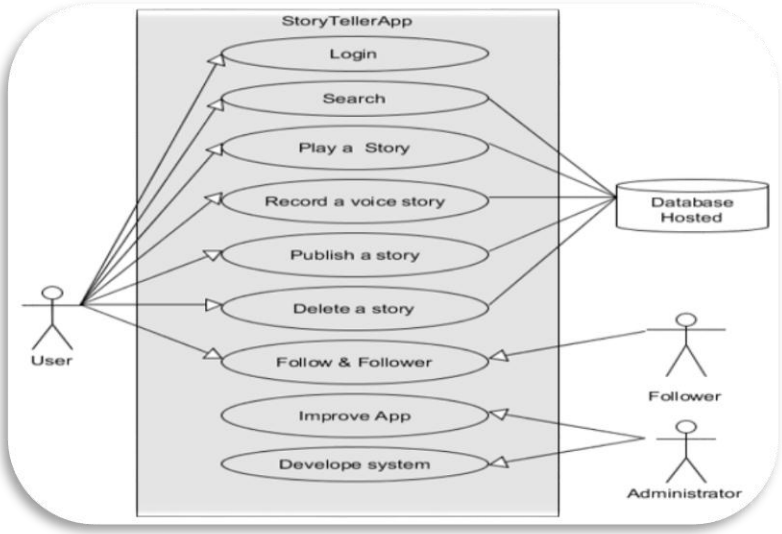
REQUIREMENTS

In the original requirements the application user had the option to login with email address and this has been changed in the redrafted version. There are many reasons for this, however the main reason is for security purposes. This is to ensure that all users are identified through their phone number and email address. Another reason is that it will be easier to extract all the users' information through the Facebook accounts.

FUNCTIONAL REQUIREMENTS

The functional requirements define the function of the application.

USE CASE DIAGRAM



REQUIREMENT 1: LOGIN

DESCRIPTION

The user logins into the application. This requirement is essential to the operating of the system.

USE CASE

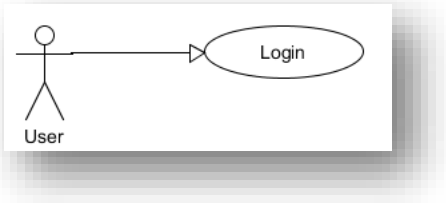
Scope

The scope of this use case is to allow the user to login into the application.

Description

This use case describes the process by which a user initializes the application.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user login in the application.

Main flow

3. The application identifies the user.
4. The user starts using the application.

Termination

The application loads the story Wall age

Post-condition

The application goes into a wait state.

REQUIREMENT 2: RECORD A VOICE STORY.

DESCRIPTION

The user records a story.

USE CASE

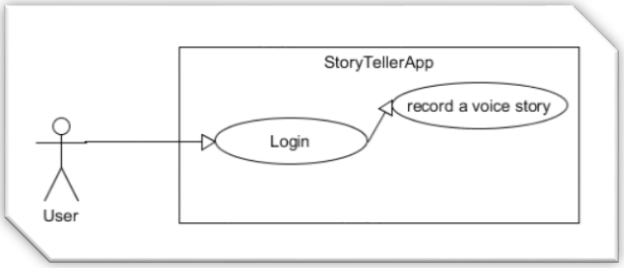
Scope

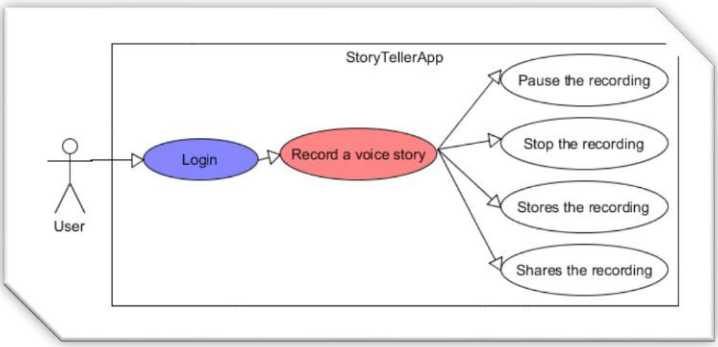
The scope of this use case is to allow the user to create a story (voice recording).

Description

This use case describes the process by which a user creates a story (voice recording).

Use Case Diagram





Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user clicks the button to record a story in the application.

Main flow

4. The application initialises.
5. The user selects the recording button.
6. The recording page opens up

Descriptive use case scenario:

user (Actor)	**StoryTellerApp**
1. The user turns on the app	
	2. The app turns on. The welcome message is displayed. The options are displayed a) Login with Facebook
	3. The app requests Facebook username and password.
4. The user inputs Facebook username and password.	
	5. The app validates Facebook username and password
	6.The user is given access to the app.
	7. The app displays the "StoryWall" activity screen.
8. The user sees the "StoryWall" activity screen.	
9. The user clicks the recording button page	
10. The user clicks the recording button.	
	11. The app starts recording
12. The user clicks the pause button	

	13. The app pauses the voice recording
14. The user clicks the recording button to continue recording.	
	15. The app continues recording.
16. The user clicks the stop button.	
	17. The app stops recording
	18. The app shows three options to the user: Delete, save or publish the story.
19. The user chooses to publish the story in the "StoryWall".	
	20. The app adds the story to the list in the user profile.
	21. The app adds the voice recording to the "StoryWall".
22. The user closes App	
	23. The app closes

Alternative flow(s):

- Operation failure: The user enters invalid data:
  - Invalid username.
  - Invalid password.

- Operation failure: In the case where the application is not working properly.
  - And/or the libraries are not functional.

- The user selects other options after the voice recording:
  - The user deletes the story recorded.
  - The user saves the story recorded.

- The user chooses to login with a Facebook account.

REQUIREMENT 3: EXPLORE THE "STORYWALL" AND PLAY A STORY FROM OTHER USER:

DESCRIPTION

The user will be able to explore the "StoryWall" and listen stories from other users.

USE CASE

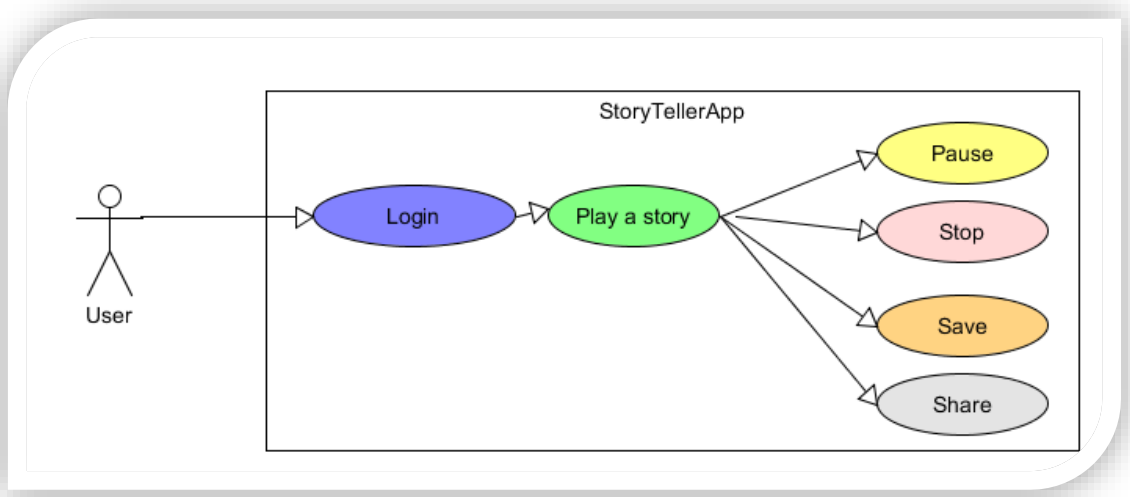
Scope

The scope of this use case is to allow the user to explore the "StoryWall" and play a story.

Description

This use case describes the process by which a user browses the story wall and plays of the stories.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user explores the "StoryWall" and plays one of the stories.

Main flow

7. The application initialise.
8. The user is on the "StoryWall" and plays a story.
9. The story selected starts.

Descriptive Use case Scenario

user (Actor)	**StoryTellerApp**
1. The user turns on App	
	2. The app turns on. The welcome message is displayed. Options are displayed a) Sing in with Facebook account
3. The user sees the Facebook login request with email account	
	4. The app requests a Facebook account and password validation
5. The user inputs password and password validation.	
	6. The app validates email and password
	7.The user profile is created
	8. The app displays the story wall. Stories from other users.
9. The user sees the story wall of the Home page.	
10. The user scrolls up/down	
11. The user selects one of the stories	
12. The user clicks the play button	
	13. The app plays the story selected

14. The user clicks the pause button	
	15. The app pauses the story
16. The user clicks the play button	
	17. The app continues playing the story
18. The user clicks the stop button	
	19. The app stops the story
20. The user closes the App	
	21. The app closes

Alternative flow(s):

- The operation fails if the user enters invalid data:
    - Invalid username.
    - Invalid password.
- The operation fails if the application is not working properly.
    - And/or the libraries are not functional.
- The user login with a Facebook account.
- The user shares the story with other users.
- The user saves the story in the database.

REQUIREMENT 4: FOLLOW ANOTHER USER

DESCRIPTION

The user will be able to follow other users.

USE CASE

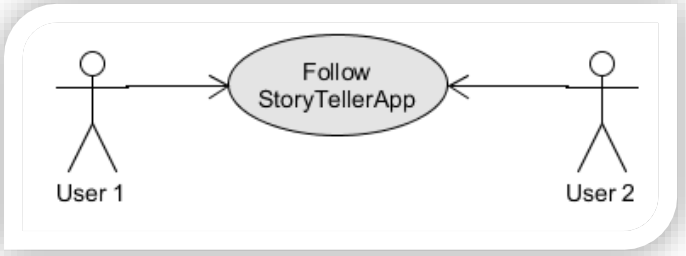
Scope

The scope of this use case is to allow the user to follow other users.

Description

This use case describes the process by which a user follows other users.

Use Case Diagram



Flow Description

Precondition

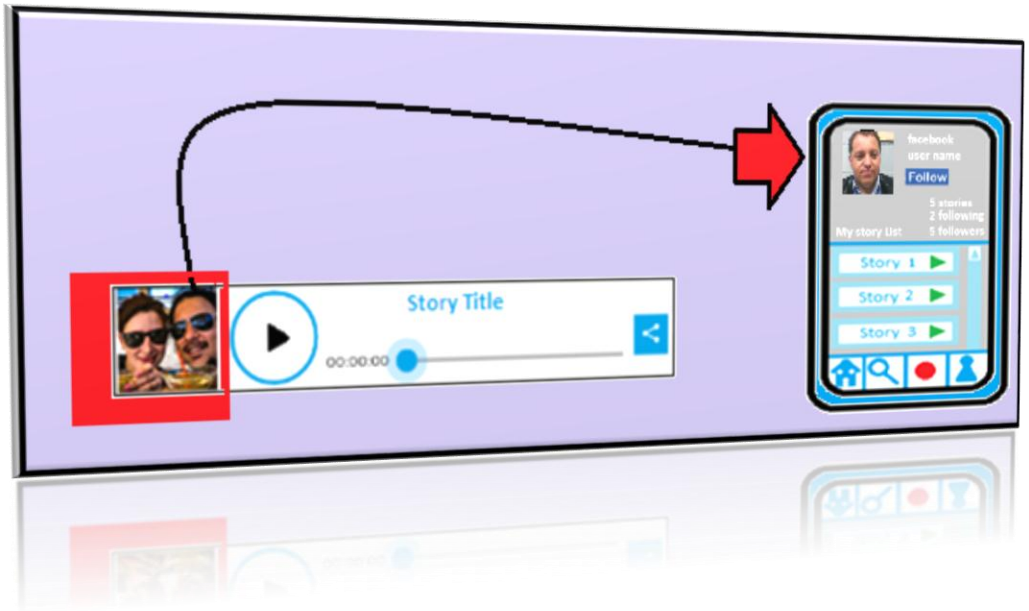
The application is in initialization mode

Activation

This use case starts when the user visits the profile of another user and click the follow button.

Main flow

10. The application initialise.
11. The user 1 is on the "StoryWall" and clicks on the profile picture of user 2.
12. The profile of user 2 is displayed.



Descriptive Use case Scenario

user (Actor)	StoryTellerApp
1. The user turns on App	
	2. The app turns on. The welcome message is displayed. a) Sing in with Facebook account
3. The user sees the Facebook login request with email account	
	4. The app requests a Facebook account and password validation
5. The user inputs password and password validation.	
	6. The app validates email and password
	7.The user profile is created
	8. The app displays the "StoryWall". Stories from other users.

9. The user sees the "StoryWall".	
10. The user scrolls up/down	
11. The user selects one of the stories	
12. The user clicks on the user profile picture.	
	13. The app opens the user profile picture
14. The user clicks the follow button	
	15. The follow button change status to followed
16. The user closes the App	
	17. The app closes

Alternative flow(s):

- The operation fails if the user enters invalid data:
    - Invalid username.
    - Invalid password.
- The operation fails if the application is not working properly.
    - And/or the libraries are not functional.
- The user shares the story with other users.
- The user saves the story in the database.

REQUIREMENT 5: SEARCH FOR A STORY OR ANOTHER USER

DESCRIPTION

The user will be able to search for a story or another user.

USE CASE

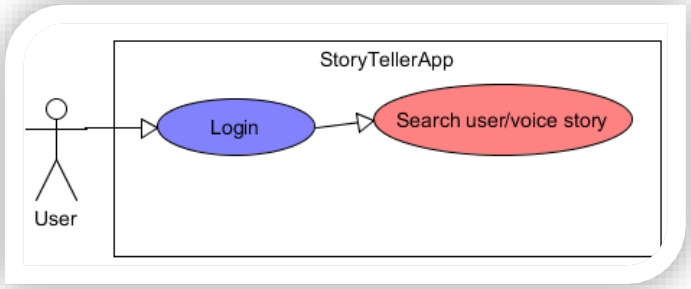
Scope

The scope of this use case is to allow the user to find other users or stories.

Description

This use case describes the process by which a user search for other users or stories.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user visits the search activity and enters a user name or story title.

Main flow

13. The application initialise.
14. The user is on the search activity enters a user name or story title.
15. The story selected or the user profile displayed.

Descriptive Use case Scenario

user (Actor)	**StoryTellerApp**
1. The user turns on App	
	2. The app turns on. The welcome message is displayed. a) Sing in with Facebook account
3. The user sees the Facebook login request with email account	
	4. The app requests a Facebook account and password validation
5. The user inputs password and password validation.	
	6. The app validates email and password
	7. The app displays the "StoryWall". Stories from other users.
8. The user sees the "StoryWall".	
9. The user changes to search activity	
10. The user enters a user name	
11. The user clicks search	
	12. The app displays the profile of the user searched.
15. The user closes the App	
	16. The app closes
Alternative flow(s): • The operation fails if the user enters invalid data:	

- Invalid username.
- Invalid password.

- The operation fails if the application is not working properly.
    - And/or the libraries are not functional.

- The user searches for a story.

The main functionality of the application is to record, store and share the stories (voice recordings).

The user will have to follow the steps below:

- The red button to start recording.
- Pause button to pause the recording.
- Stop button to stop recording

The user will have three options once he stops recording:

- Delete the voice recording
- Add it to profile
- Publish it in the "StoryWall"

The functional requirements of the mobile application are described in the use cases along with the description of each. These use case requirements are the basic functional requirements too.

Sign in

- Email – User can register and login using an email address
- Facebook – User can login using a Facebook account.

”StoryWall”

- Play a story – User can browse and play a story
- Pause – User can pause the story
- Stop – User can stop the story.
- The user can move from home page to search, record or profile pages.

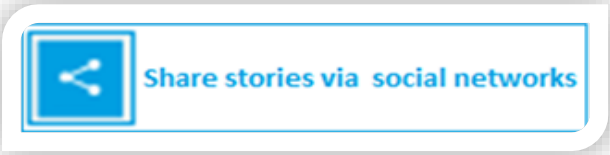
Story bar

- **Play button**: The user clicks the play button to play the story.

- **Pause button**: The user clicks the pause button to pause the story.

- **Stop button**: The user clicks the stop button to stop the story.

- **Share stories**: The user can share the stories via the social networks.



Search button

- The user can search stories
- The user can move from the search page to the Story wall, record or profile tabs.

Record button

- Record – User can record a story
- Pause – User can pause the story
- Stop – User can pause the story
- Delete - User can delete the story
- Store – User can save the story in the database.
- Share – User can share the story in the social networks
- The user can move from record page to home, search or profile tabs.

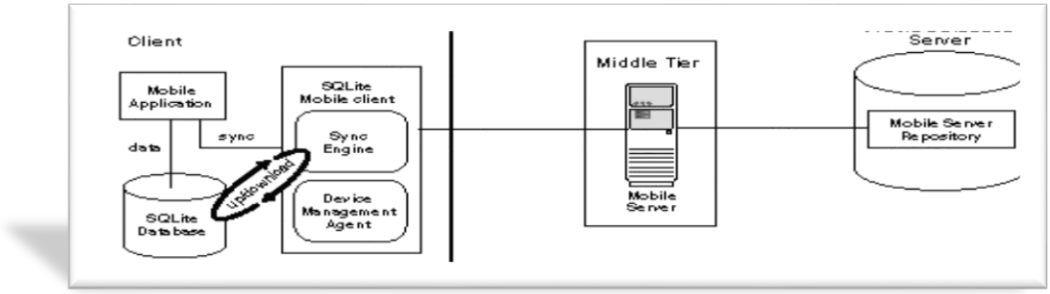
Profile page

- Play story – The user can play the stories of the profile.
- Pause – The user can pause the story.
- Stop – The user can stop the story.
- Follow user – The user can follow other users.
- Options –The user will be logged out.

DATA REQUIREMENTS

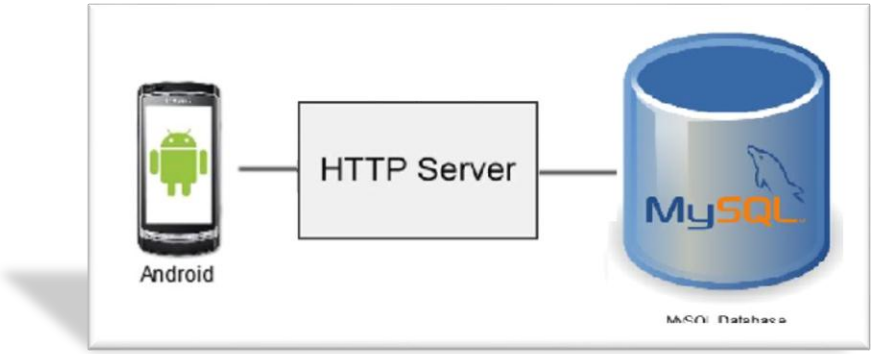
The data requirements will be outlined and detailed in this section. The data will be stored in two databases one in SQLite and the other one hosted online in MySQL.

- **SQLite Database**: The application will hold an SQLite database. This database will store the stories saved by the users in the mobile device.



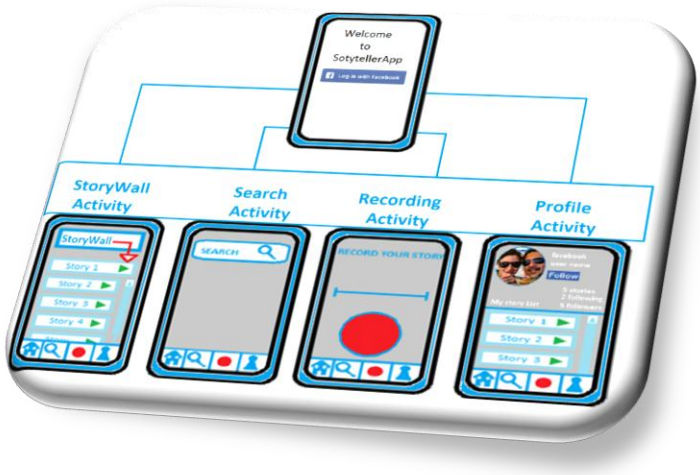
(Oracle® Database Lite SQLite Mobile Client Guide - http://docs.oracle.com/cd/E12095_01/doc.10303/e16214/soverview.htm)

- **MySQL Database:** A database will be hosted online. This database will be the major database for this application as it will store the voice recordings of all the users.



USER REQUIREMENTS

The user requirements and the use cases would be based upon the requirements. The figure below represents the overall requirements of the system. Each use case requirement would be further discussed.



The user should have:

- **Mobile phone Android**: The operating system of the application is Android.
- **Android 4.1, Jelly Bean**: The application is aimed at Android 4.10 or higher. The 88.7% of Android users will be able to use the application.
- **Internet access, WIFI & 3G**: The user needs internet connection to perform the following actions:
  - Access to Play Store
  - Download the application

  Allow the application to perform services and requests.
- **Play Store**: The user needs the Play Store Application installed to be able to download the application.
- **Facebook account**

ENVIRONMENTAL REQUIREMENTS

The presence of the following requirements is essential throughout the development process of the Android Application.

- **Laptop:** A laptop, with enough resources to build and run the application i.e. 4GB+ of RAM, 50GB of Disk Space, 1.8GHz Processor+.
- **Android Phone:** An android mobile phone is needed to test the capability of multiple requests, layout and compatibility.
- **Android Studio:** The official Google android IDE for developing Android Applications.
- **Android SDK:** Software Development Kit, supplied by developer.android.com, provides the tools needed to develop an Android Application.

- **SQLite Database:** The SQLite database is used to store data in the personal device Available from http://www.sqlite.org/
- **MySQL Database:** The MySQL database is used to store data on the server.
- **Internet Access:** This is required to access the various Android documents on developer.android.com, and other online resources.
- **Host:** This is required to hold the database in the server.
- **Illustrator/Paint:** Needed to develop and edit graphics and icons that are used in the application.

NON-FUNCTIONAL REQUIREMENTS

The non-functional requirements of the system are:

- Operating system used during development of system
- Java version used during development
- Other non-functional requirements are efficiency requirements, dependability requirements, and security requirements, ethical, regulatory and legislative requirements.

PERFORMANCE/RESPONSE TIME REQUIREMENT

The recording system must respond to 99% of user requests within 1 seconds of the request.

AVAILABILITY REQUIREMENT

The application should be available to the users at all times.

The table below shows the availability percentage:

Availability Percentage	Approximate Downtime Per Year
95%	18 days
99%	4 days
99.9%	9 hours
99.99%	1 hour
99.999%	5 minutes

RECOVER REQUIREMENT

The application will automatically save the stories in the case of failure.

The user will be able to click again on the app logo and continue using the application.

MAINTAINABILITY REQUIREMENT

In the case of failure, the expected data will not be corrupted.

If the application fails while a story is being recorded, the story will be saved in the device database. If the story has not been recorded completely, the user will have to start the recording process again.

EXTENDIBILITY REQUIREMENT

The application may be updated with additional functionality over time with the objective of improving and offer more options to the users.

SECURITY REQUIREMENT

StoryTellerApp is a simple application that allows the user to publish and share stories with other users. It's difficult to corrupt the system as there is an optimal logic behind it.

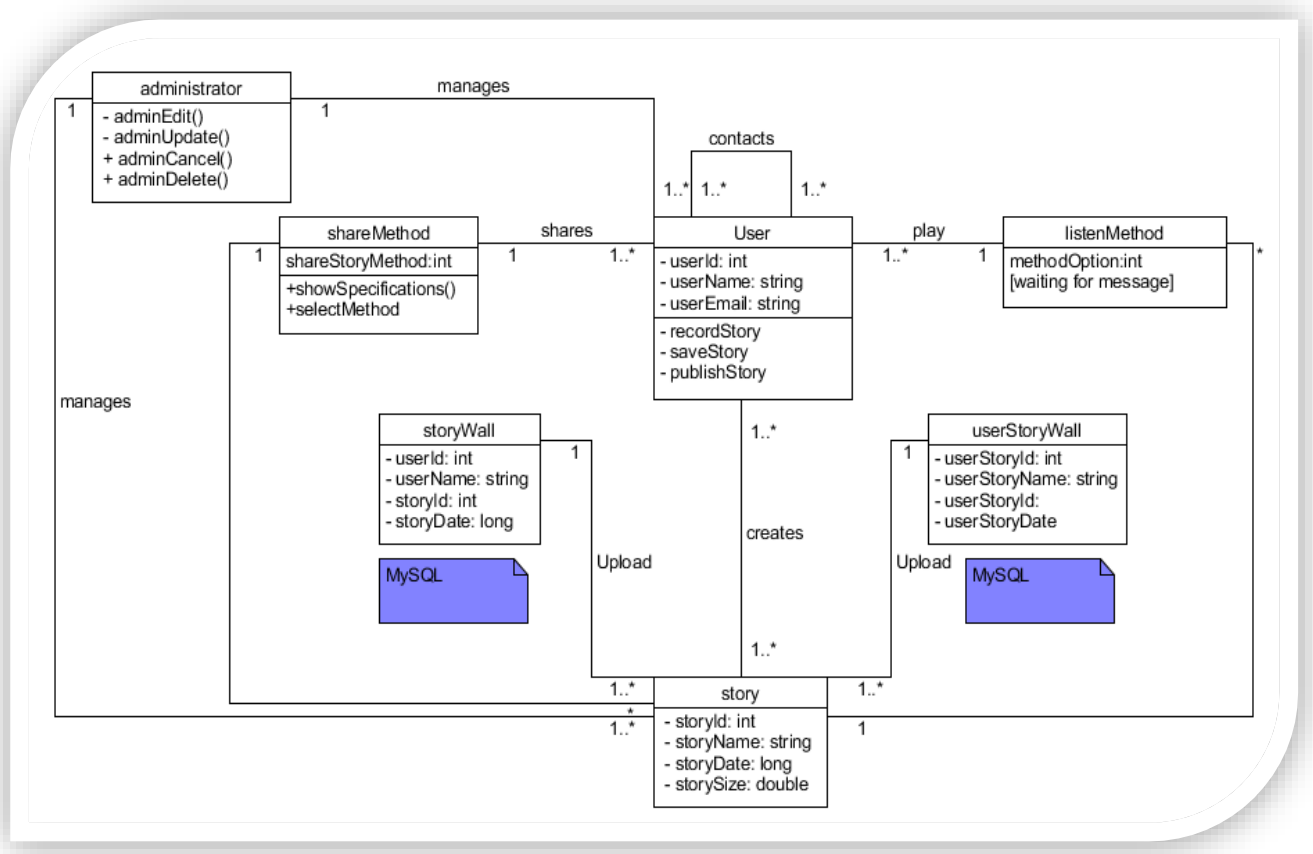
The Application can be tested with accuracy and strict quality controls to bring the best service level to the user.

These tests are done every time there is a new improved release.

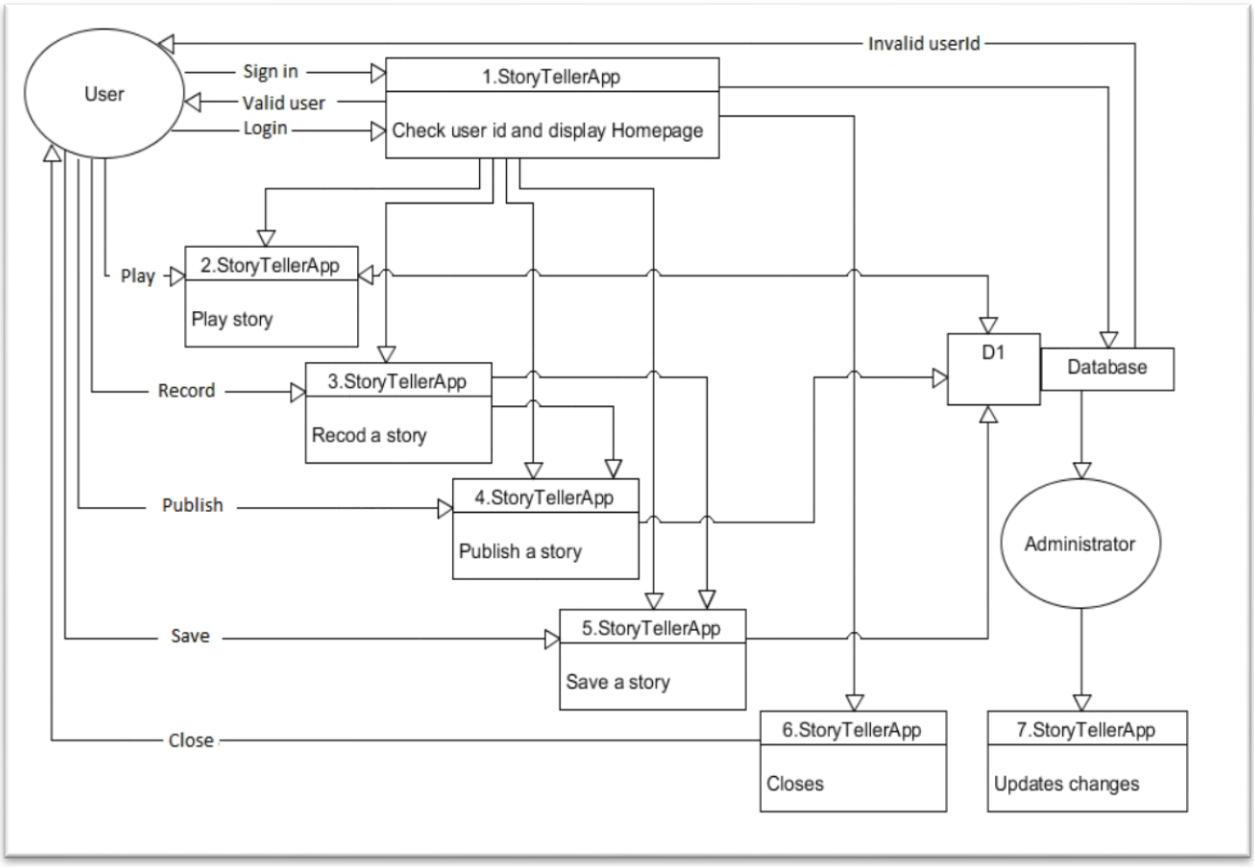
DESIGN AND ARCHITECTURE

STORYTELLERAPP CLASS DIAGRAM

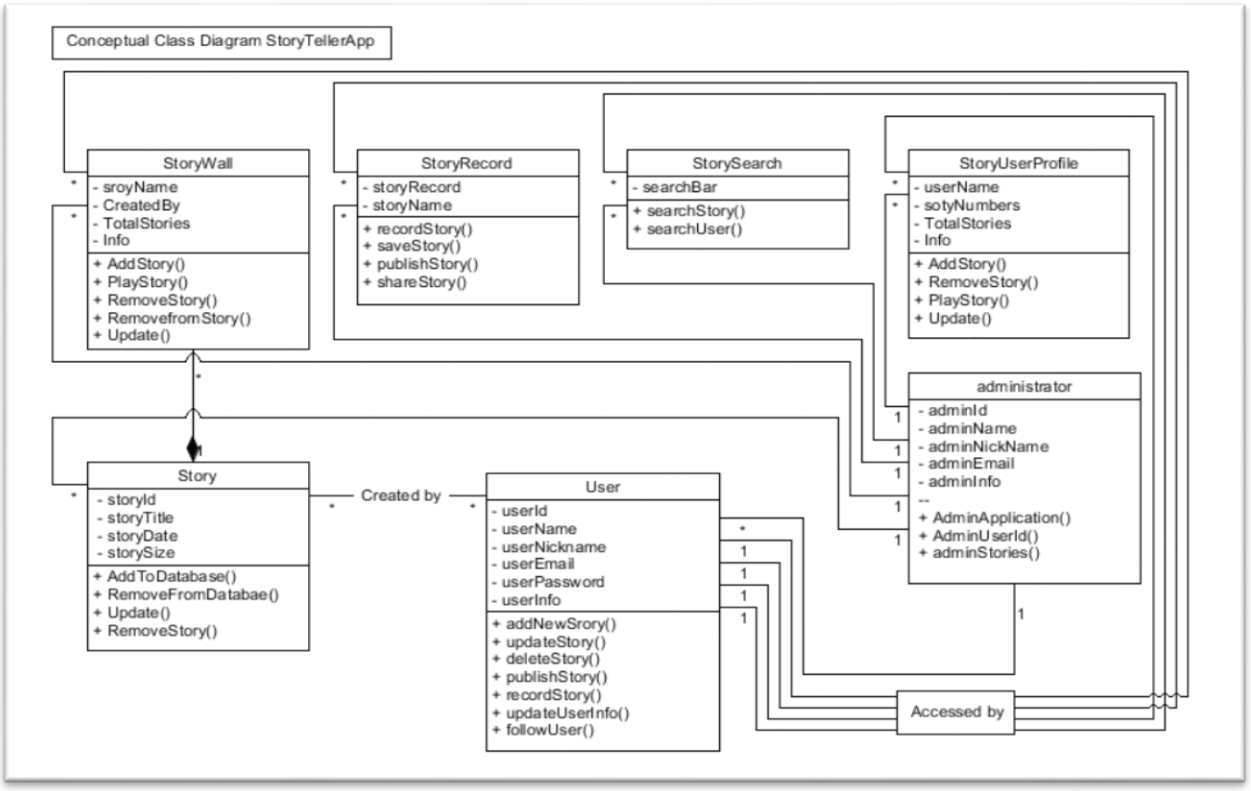
The class diagram below shows what the structure of the application is. There is a user that can create share and play stories. The administrator will manage the user profiles and the stories recorded.



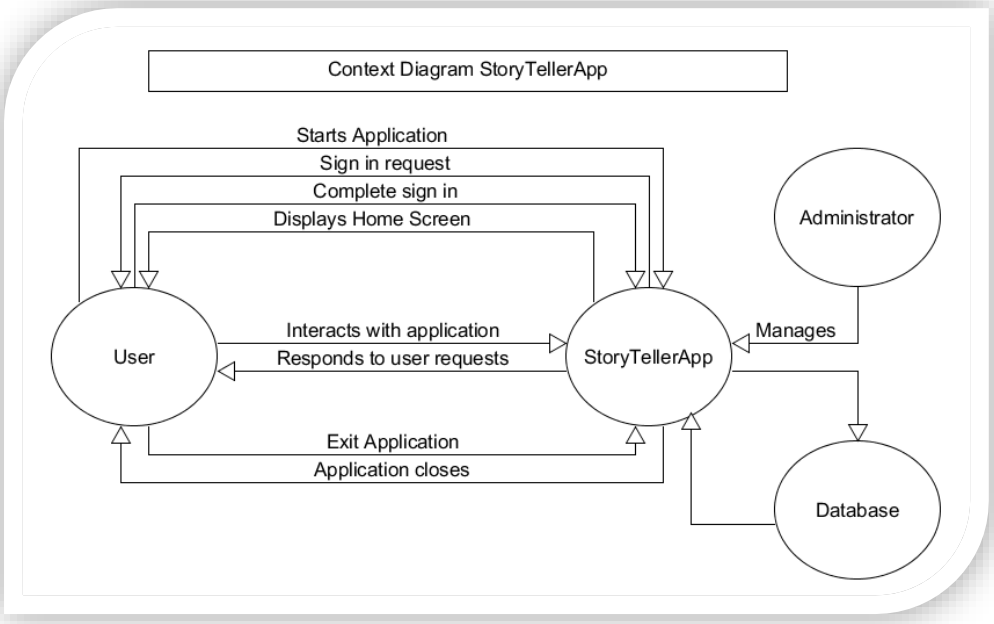
LEVEL 1 PHYSICAL DATA FLOW DIAGRAM

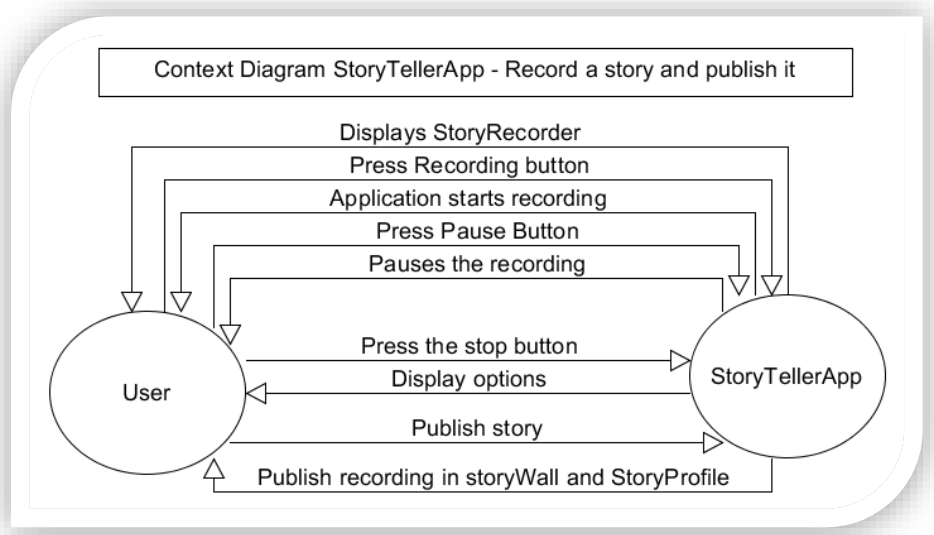


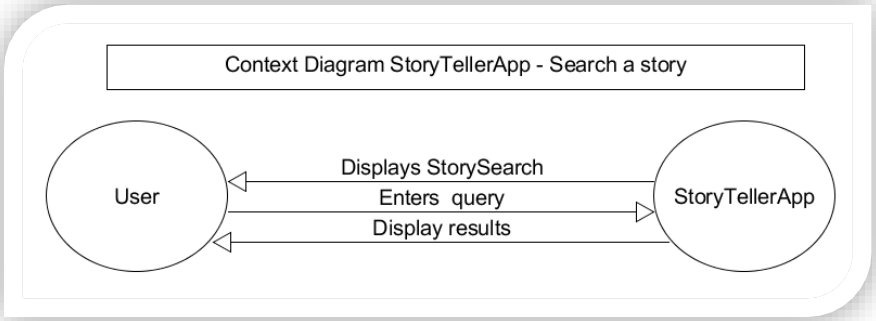
CONCEPTUAL CLASS DIAGRAM

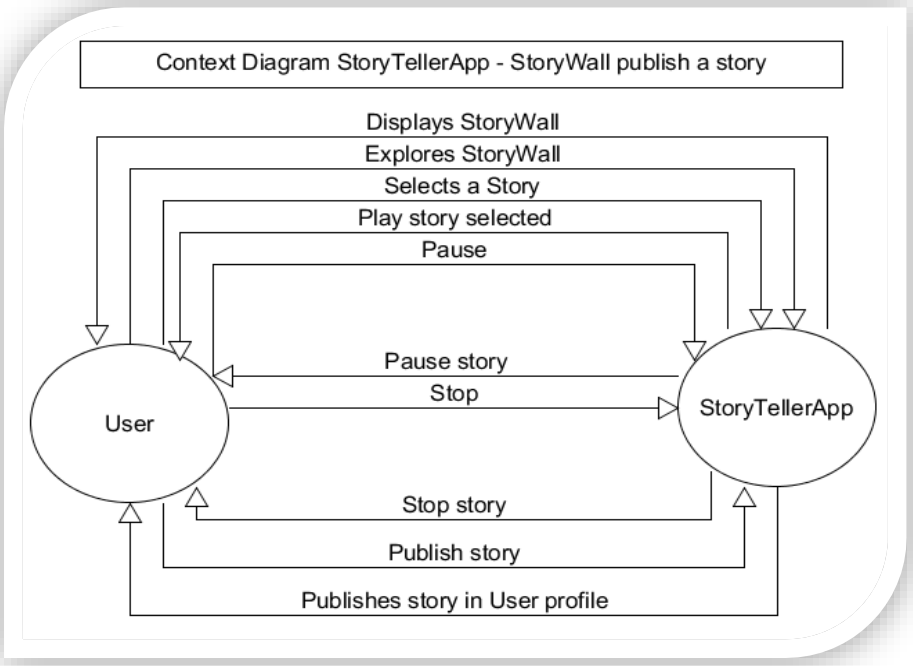


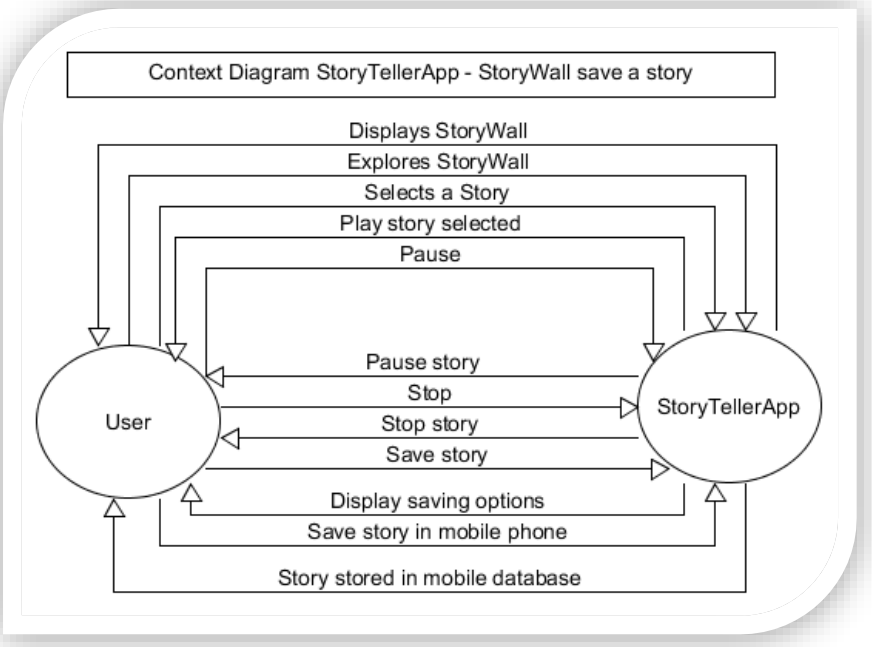
CONTEXT DIAGRAMS

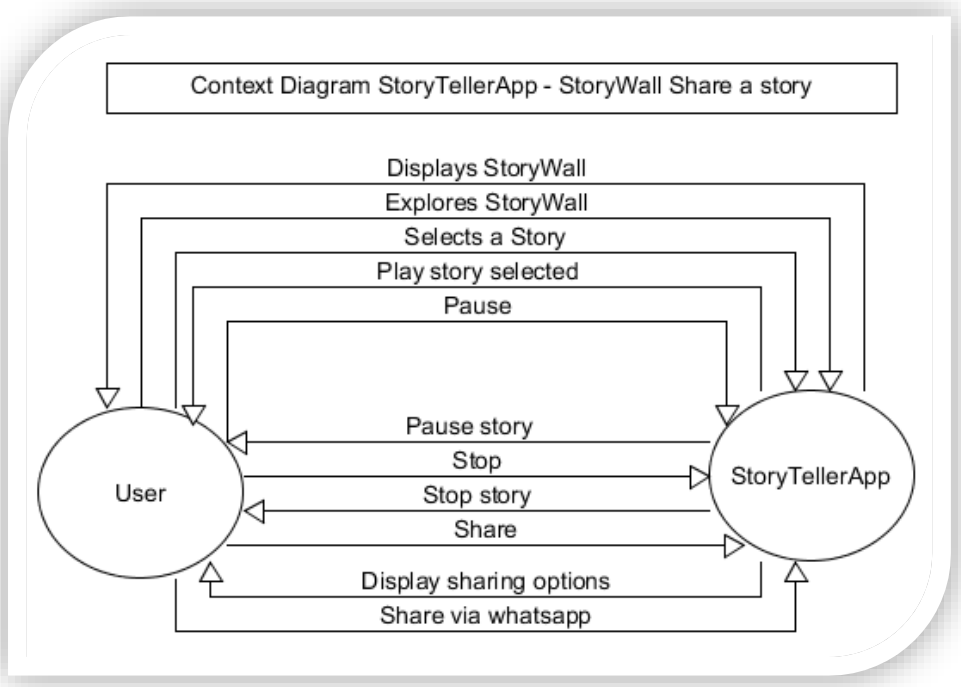



Context Diagram StoryTellerApp - Record a story and publish it
Displays StoryRecorder
Press Recording button
Application starts recording
Press Pause Button
Pauses the recording
Press the stop button
Display options
Publish story
Publish recording in storyWall and StoryProfile
User
StoryTellerApp


Context Diagram StoryTellerApp - Search a story
Displays StorySearch
Enters query
Display results
User
StoryTellerApp

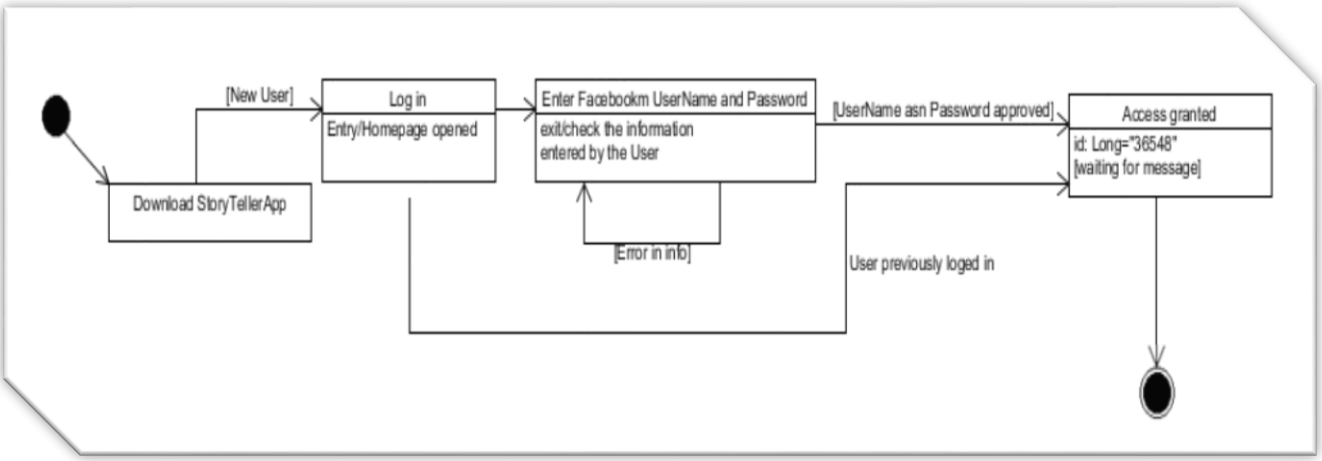

Context Diagram StoryTellerApp - StoryWall publish a story
Displays StoryWall
Explores StoryWall
Selects a Story
Play story selected
Pause
Pause story
Stop
User
StoryTellerApp
Stop story
Publish story
Publishes story in User profile


Context Diagram StoryTellerApp - StoryWall save a story
Displays StoryWall
Explores StoryWall
Selects a Story
Play story selected
Pause
Pause story
Stop
User
StoryTellerApp
Stop story
Save story
Display saving options
Save story in mobile phone
Story stored in mobile database



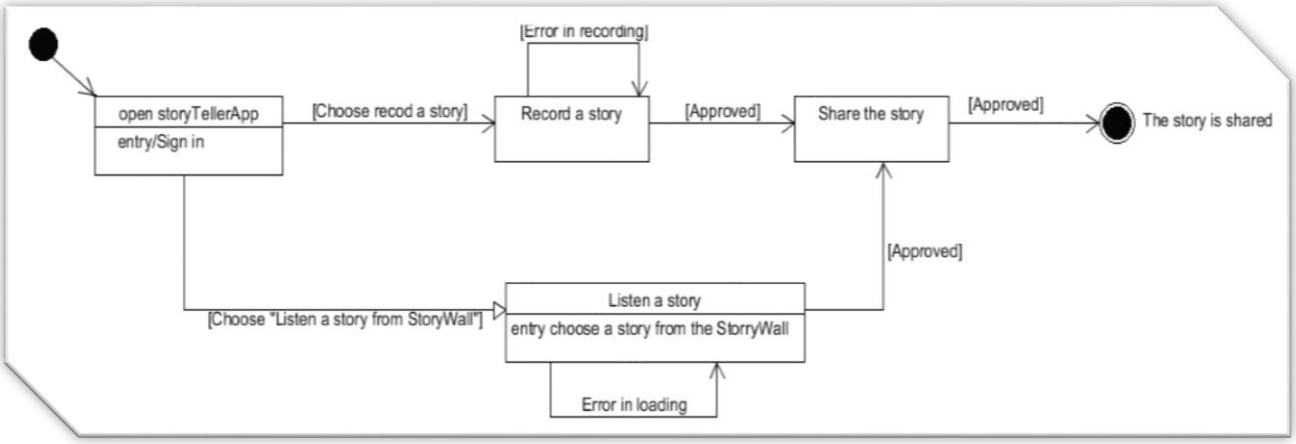
STORYTELLERAPP STATE CHART DIAGRAM - OPEN AN ACCOUNT

The below diagram shows the steps that the user has to follow since the application is downloaded until the application account is opened.



STORYTELLERAPP STATE CHART DIAGRAM - RECORD AND SHARE OR PLAY A STORY

The below diagram shows the steps that the user has to follow to record and share or play a story.



IMPLEMENTATION

Describe the main classes/functions used in the code. Consider to show and explain interesting code snippets where appropriate.

TESTING

Describe any testing tools, test plans and test specifications used in the project

GRAPHICAL USER INTERFACE (GUI) LAYOUT

Provide screenshots of key screens and explain.

CUSTOMER TESTING

Provide evidence for and results of customer testing. This may include ratings or quotes from the customer.

EVALUATION

How the system evaluated and what was are the results? In many cases, this will include usage data and user feedback. It may also include performance evaluations, scalability, correctness, etc. depending on the focus of the project.

Quantitate results may be reported in tables or figures. Note that tables have their caption above the table and need to be cross referenced in the text (see **Error! eference source not found.**). In many cases, tables are better to read if you skip the vertical lines.

Table 1: Performance with and without caching

	$N_{without}$	N_{with}	$Std.\text{-}Deviation_{with}$	$Std.\text{-}Deviation_{without}$	p
Records	100	200	2.54	3.97	.002
Data (GB)	100	200	2.54	3.97	.002
Speed	100	200	2.54	3.97	.002

Figures have their caption below the figure as shown in **Error! Reference source ot found.** Make sure that if you use colour, the figure is still readable when printed in black & white, e.g., by using additional symbols, patterns, etc.

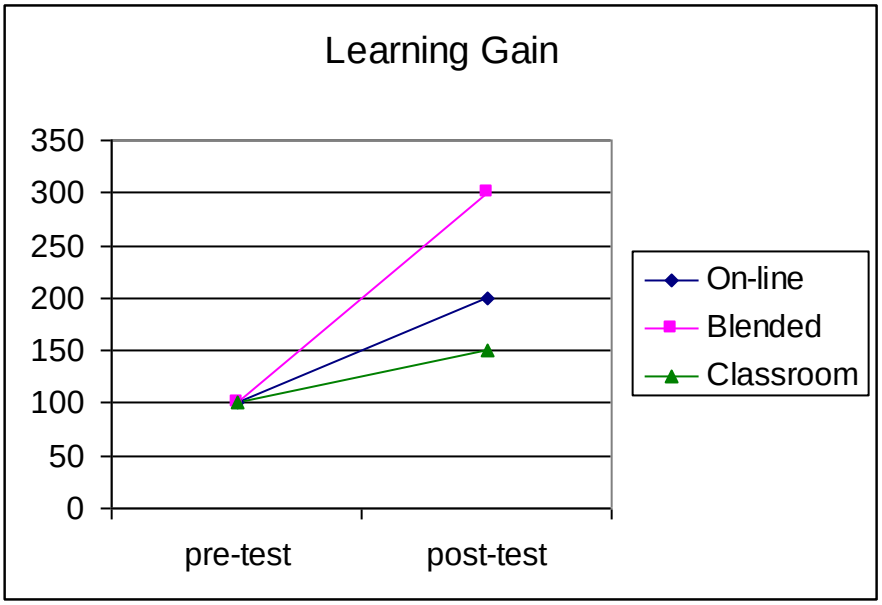


Figure 1: Learning gain across different experimental groups

CONCLUSIONS

Describe the advantages/disadvantages, opportunities and limits of the project.

FURTHER DEVELOPMENT OR RESEARCH

With more resources, where could the results of this project lead to?

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[4]magicalmaths (2014) *Develop the art of storytelling by understanding how telling a story affects the brain! WOW!* Available at: http://www.magicalmaths.org/develop-the-art-of-story-telling-by-understanding-how-telling-a-story-affects-the-brain-wow/ (Accessed: 4 February 2016).

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[7]Smith, C., run, I. and SmithDMR, C. (2014) '50 amazing WhatsApp statistics', *Mobile Marketing*, 23 April. Available at: http://expandedramblings.com/index.php/whatsapp-statistics/2/ (Accessed: 4 February 2016).

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[11]WhatsApp FAQ - how do I use voice messaging? (no date) Available at: https://www.whatsapp.com/faq/en/iphone/23702247 (Accessed: 4 February 2016).

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APPENDIX

PROJECT PROPOSAL

CONTENTS

PROJECT JUSTIFICATION

We are currently living in an era where many aspects of our lives are controlled by devices such as mobile phones. The number of mobile phone applications and social networks are growing exponentially. Many applications offer users a unique experience to post a vast array of content such as messages, videos, pictures, recipes and so forth.

Creating another successful social network is not an easy project. It will require a lot of work and creativity to offer something unique in the current social network marketplace.

The original idea I have in mind is a story telling mobile application. In this application, a user could record a story and share it with other users. I imagined a father who lives far from his family reading a story and recording it for his children/wife. I then started to think more about a social network, where the users are able to record their stories or opinions, publish them and share them in other social networks such as Facebook or twitter.

There is no other mobile app which focuses exclusively on the voice recorded stories.

OBJECTIVES

The objective of the project is to create a mobile app where the users are able to share their stories or opinions with their contacts and the rest of the world.

The user will be able to download the application and perform the following steps:

- Sign in with email.
- Sign in as a Facebook user.
- Log in/out.
- Record a story/opinion.
- Publish a story/opinion.
- Save the story/opinion.
- Delete the Story/opinion.
- Share it with other users via other social networks.

Another objective is to create a user friendly app so all the users are happy to use it and increase the app popularity.

BACKGROUND

Like many other people, I am a user of different mobile apps and social networks such as Facebook, LinkedIn, twitter, Instagram, WhatsApp etc.

The reason I have chosen this project is that I would like to create a social network application where users can share their creative experiences and also; be creative. Social networks are mostly based on written comments, videos and pictures and offer users little opportunity to vocally express themselves.

With this application the user, such as a child, could play a story which has been scripted by a parent or relative without having to look at the mobile device. (They would also be able to do so safely with the application having x y parental/safety features installed). This could be an ideal alternative to the traditional book at bedtime and could be particularly engaging/fun experience for the child if the parent is away and has pre-recorded a story for them.

The application also has further potential (in later versions) to be enhanced with visual information such as pictures or animations or sound effects which would further enhance the users experience. The user for example could listen to the pre-recorded story through their headphones whilst also 'swiping' through matching pictures of the story.

This App will teach people to play the other's stories and listen to the experiences of others through the use of mobile technology.

TECHNICAL APPROACH

Once I decided "what to do" and "how I might do it", I then made the decision to create my project using the following components:

Editor - Android studio

Programing language - Java.

Database - MySQL

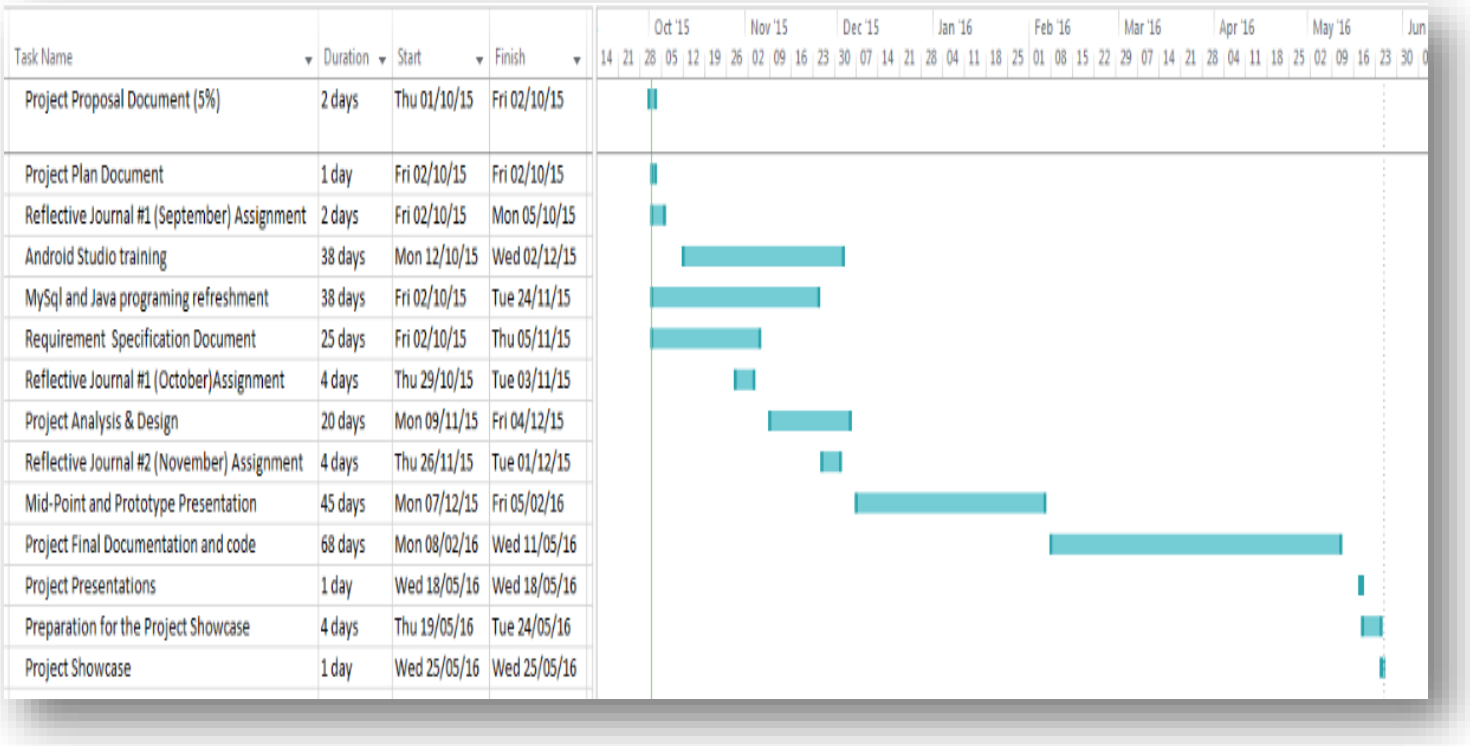
Social networks integrated

SPECIAL RESOURCES REQUIRED

I have not previously used Android studio before therefore my learning experience will be to learn how to use it from scratch. This aspect will potentially make the project more challenging for me.

Through my research, I found many tutorials online. Some examples include: tutorialspoint, pluralsight, youtube etc.

PROJECT PLAN



Task Name	Duration	Start	Finish
Project Proposal Document (5%)	2 days	Thu 01/10/15	Fri 02/10/15
Project Plan Document	1 day	Fri 02/10/15	Fri 02/10/15
Reflective Journal #1 (September) Assignment	2 days	Fri 02/10/15	Mon 05/10/15
Android Studio training	38 days	Mon 12/10/15	Wed 02/12/15
MySql and Java programing refreshment	38 days	Fri 02/10/15	Tue 24/11/15
Requirement Specification Document	25 days	Fri 02/10/15	Thu 05/11/15
Reflective Journal #1 (October)Assignment	4 days	Thu 29/10/15	Tue 03/11/15
Project Analysis & Design	20 days	Mon 09/11/15	Fri 04/12/15
Reflective Journal #2 (November) Assignment	4 days	Thu 26/11/15	Tue 01/12/15
Mid-Point and Prototype Presentation	45 days	Mon 07/12/15	Fri 05/02/16
Project Final Documentation and code	68 days	Mon 08/02/16	Wed 11/05/16
Project Presentations	1 day	Wed 18/05/16	Wed 18/05/16
Preparation for the Project Showcase	4 days	Thu 19/05/16	Tue 24/05/16
Project Showcase	1 day	Wed 25/05/16	Wed 25/05/16

Project plan uploaded with project proposal.

TECHNICAL DETAILS

The project will be written using Java programming language and the database will be created in MySQL. I have used both of these tools in the past and I believe they are an ideal combination to create the mobile App.

EVALUATION

The project will be tested by myself and other colleagues in order to obtain feedback from real users. In this way I will be able to make corrections or new additions.

I will perform manual test and also I will look for automation scripts to test the application.

CONSULTATIONS

Eamon Nolan

"*You have something here, especially the "Listening" one"*

Paul Hayes

"It is a very interesting project. I would advise you to be as ambitious as possible with it. It has the potential for very good marks."

Mikhail Timofeev

"I don't think it is a good project idea. Social networks are not built around one type of technology or media type distribution. Those are built around a value creation aspect that drives masses to participate. Why would people use your app if there is YouTube, Vine, Instagram, even Coub etc? Yes, the videos there are short (Vine, Instagram, Coub), but they do tell a story the same way you are describing. If you would like to create an app simply for recording audio books read by parents for their children – that can be an interesting project from my personal point of view, if it is done right and put in right context."

CONTENTS

OVERVIEW

StoryTellerApp is an Android mobile application where the users can record, listen and share voice stories with other users.

PROJECT PURPOSE AND SCOPE

PROJECT PURPOSE

The purpose of this requirement documentation is to set out the requirements for the development of an application named StoryTellerApp, which would give the users the ability to perform many actions using voice recordings.

The users can record, store and share their stories (voice recordings) with other users and the rest of the world through social networks.

The intended audience would be all the android phone holders that actively share information via the social networks such as Facebook, twitter or WhatsApp.

PROJECT JUSTIFICATION

We are currently living in an era where many aspects of our lives are coordinated through devices such as mobile phones. The amount of mobile phone applications and social networks currently in the market are vast and growing at an exponential rate. Many applications offer users a unique experience to post a vast array of content such as messages, videos, pictures, recipes and so forth.

The idea for this project is to create a story telling mobile application. In this application, a user can record a story and share it with other users. As an example a father who lives far from his family could read a small story and record it for his children/wife. This storyteller application could be also used for other concepts too, such as to express an idea or verbal comments with other users via voice messages.

PROJECT SCOPE

The scope of the project is to develop an android mobile application that the users can download from the store and perform the following actions:

- Sign in with email or as a Facebook user.
- Log in/out from the application.
- Browse, listen and share the stories of the feed wall.
- Record/Pause/Stop a voice recording.
- Publish a voice recording.
- Save the voice recording.
- Delete the voice recording.
- Share the voice recording with other users via other social networks.

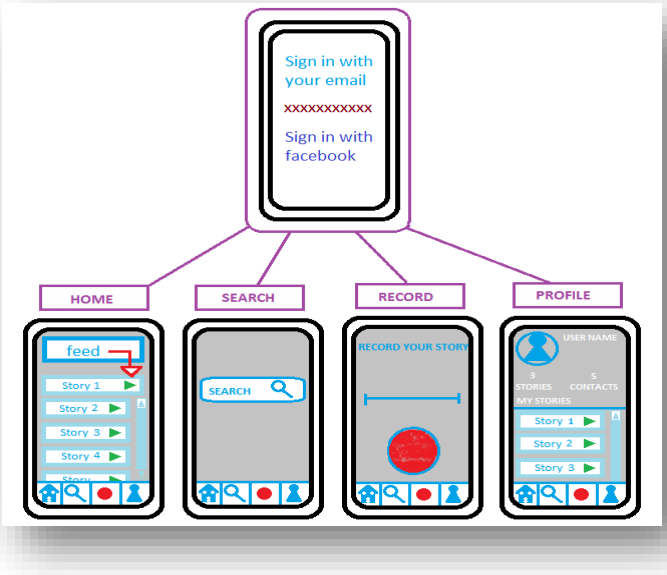
There is no other mobile app that focuses exclusively on the voice recorded stories.

DEFINITIONS, ACRONYMS AND ABBREVIATIONS

- **DB – Database:** A collection of information used by a computer. Similar to an electronic filing system.
- **GUI – Graphical User Interface:** The interface allowing interaction with the device through graphical icons.
- **IDE – Integrated Development Environment**: Software application that provides the facilities for developing software/code.
- **XML – Extensible Mark-up Language:** Mark-up language that defines rules for encoding documents and allowing usability across the internet.

USER REQUIREMENTS DEFINITION

The user requirements and the use cases would be based upon the requirements. The figure below represents the overall requirements of the system. Each use case requirement would be further discussed.



The user should have:

- **Mobile phone Android**: The operating system of the application is Android.
- **Android 4.1, Jelly Bean**: The application is aimed at Android 4.10 or higher. The 88.7% of Android users will be able to use the application.
- **Play Store**: The user needs the Play Store Application installed to be able to download the application.
- **Internet access, WIFI & 3G**: The user needs internet connection to perform the following actions:
  - Access to Play Store
  - Download the application

  Allow the application to perform services and requests.

REQUIREMENTS SPECIFICATION

The main priority of this project specification is to design a user-friendly application. This is to enable users to navigate within the application and perform actions without difficulties. A manual will be added in the application for those users who require assistance with the application.

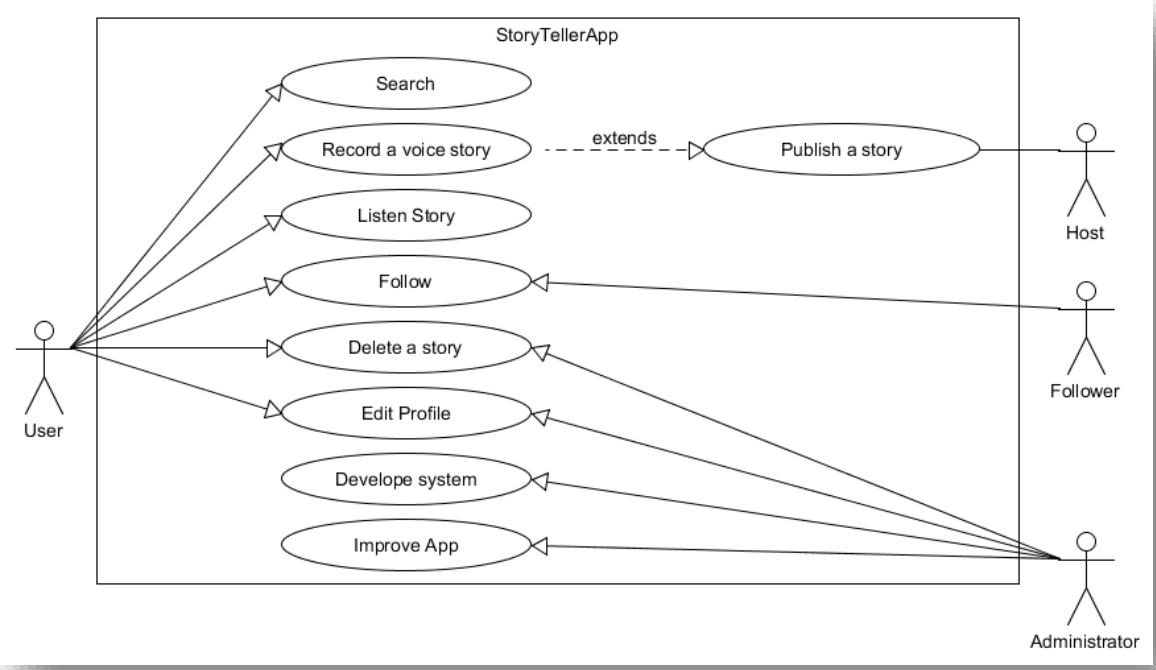
The user should be able to perform the following actions:

- Sign in with email.
- Sign in as a Facebook user.
- Log in/out.
- Record/Pause/Stop a voice recording.
- Publish a voice recording.
- Save the voice recording.
- Delete the voice recording.
- Share the voice recording with other users via other social networks

FUNCTIONAL REQUIREMENTS

The functional requirements define the function of the application.

USE CASE DIAGRAM



REQUIREMENT 1: LOGIN

DESCRIPTION

The user logins into the application. This requirement is essential to the operating of the system.

USE CASE

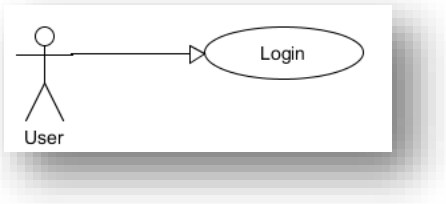
Scope

The scope of this use case is to allow the user to login into the application.

Description

This use case describes the process by which a user initialises the application.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user login in the application.

Main flow

5. The application identifies the user.
6. The user starts using the application.

Termination

The application loads the feed home page

Post condition

The application goes into a wait state.

REQUIREMENT 2: RECORD A VOICE STORY.

DESCRIPTION

The user records a story.

USE CASE

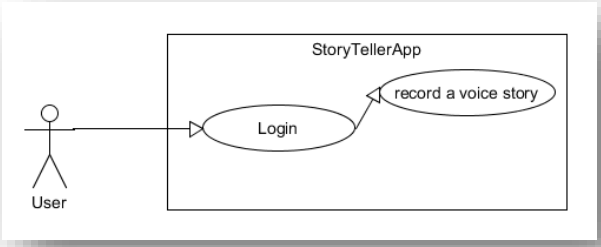
Scope

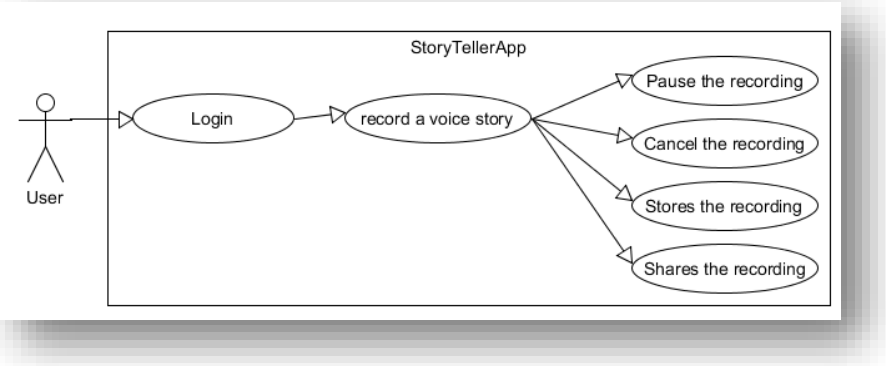
The scope of this use case is to allow the user to create a story (voice recording).

Description

This use case describes the process by which a user creates a story (voice recording).

Use Case Diagram





Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user clicks the button to record a story in the application.

Main flow

7. The application initialises.
8. The user selects the recording button.
9. The recording page opens up

Descriptive use case scenario:

user (Actor)	**StoryTellerApp**
1. The user turns on the app	
	2. The app turns on. The welcome message is displayed. The options are displayed a) Sign in with email b) Sign in with Facebook
3. The user chooses to sign in with email	
	4. The app requests email address
	5. The app requests password and password validation
6. The user inputs password and password validation.	
	7. The app validates email and password
	8.The user profile is created
	9. The app displays the home page screen.
10. The user sees Homepage screen.	
11. The user clicks the recording button page	

12. The user clicks the red button to start recording.	
	13. The app starts recording
14. The user clicks the pause button	
	15. The app pauses the voice recording
16. The user clicks the red button to continue recording.	
	17. The app continues recording.
18. The user clicks the stop button.	
	19. The app stops recording
	20. The app shows three options to the user: Delete, save or publish the story.
21. The user chooses to publish the story.	
	22. The app adds the story to the list in the user profile.
	23. The app adds the voice recording to the stories feed
23. The user closes App	
	24. The app closes

Alternative flow(s):

- Operation failure: The user enters invalid data:
  - Invalid email address.
  - Invalid password.

- Operation failure: In the case where the application is not working properly.
  - And/or the libraries are not functional.

- The user selects other options after the voice recording:
  - The user deletes the story recorded.
  - The user saves the story recorded.

- The user chooses to login with Facebook account.

REQUIREMENT 3: EXPLORE THE STORY WALL OF THE HOME PAGE AND LISTEN A STORY FROM OTHER USER:

DESCRIPTION

The user will be able to explore the story wall of the home page and to play the stories from other users.

USE CASE

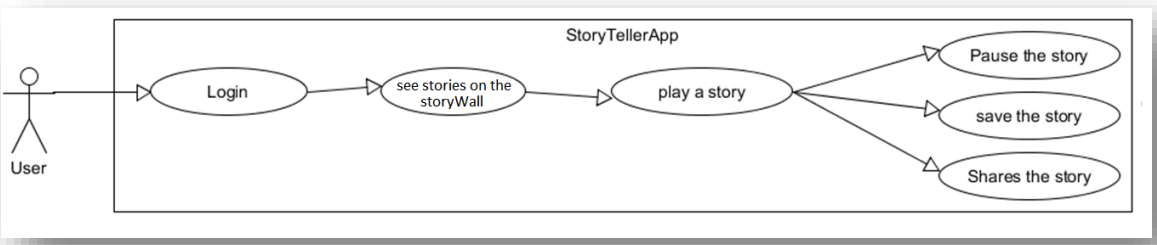
Scope

The scope of this use case is to allow the user to explore the homepage and listens to a story.

Description

This use case describes the process by which a user browses the story wall and listens to one of the stories.

Use Case Diagram



Flow Description

Precondition

The application is in initialization mode

Activation

This use case starts when the user explores the "StoryWall" and plays one of the stories.

Main flow

16. The application initialise.
17. The user is on the home page and plays a story.
18. The story selected starts.

Descriptive Use case Scenario

user (Actor)	**StoryTellerApp**
1. The user turns on App	
	2. The app turns on. The welcome message is displayed. Options are displayed a) Sign in with email account b) Sing in with Facebook account
3. The user signs with email account	
	4. The app requests email account
	5. The app requests password and password validation
6. The user inputs password and password validation.	
	7. The app validates email and password
	8.The user profile is created
	9. The app displays the story wall. Stories from other users.
10. The user sees the story wall of the Home page.	
11. The user scrolls up/down	

12. The user selects one of the stories	
13. The user clicks the play button	
	15. The app plays the story selected
16. The user clicks the pause button	
	17. The app pauses the story
18. The user clicks the play button	
	19. The app continues playing the story
20. The user clicks the stop button	
	21. The app stops the story
22. The user closes the App	
	23. The app closes

Alternative flow(s):

- The operation fails if the user enters invalid data:
    - Invalid email address.
    - Invalid password.
- The operation fails if the application is not working properly.
    - And/or the libraries are not functional.
- The user login with Facebook account.
- The user shares the story with other users.
- The user saves the story in the database.

The main functionality of the application is to record, store and share the stories (voice recordings).

The user will have to follow the steps below:

- The red button to start recording.
- Pause button to pause the recording.
- Stop button to stop recording
- Store the story recorded in the database.
- Share it in the social networks.

The user will have three options once he stops recording:

- Delete the voice recording
- Store it
- Publish it

The functional requirements of the mobile application are described in the use cases along with the description of each. These use case requirements are the basic functional requirements too.

Sign in

- Email – User can register and login using an email address
- Facebook – User can login using a Facebook account.

Home screen button - Story wall

- Play a story – User can browse and play a story
- Pause – User can pause the story
- Stop – User can stop the story.
- The user can move from home page to search, record or profile pages.

Story bar

- Play button: The user clicks the play button to play the story.

Pause button: The user clicks the pause button to pause the story.

Share stories: The user can share the stories via the social networks and WhatsApp.

Search button

- The user can search stories
- The user can move from the search page to home, record or profile pages.

Record button

- Record – User can record a story
- Pause – User can pause the story
- Stop – User can pause the story
- Delete - User can delete the story
- Store – User can save the story in the database.
- Share – User can share the story in the social networks

- The user can move from record page to home, search or profile pages.

Profile page

- Play story – The user can play the stories of the profile
- Pause – The user can pause the story
- Stop – The user can stop the story
- Options –The user will be logged out
- SQLite Database

NON-FUNCTIONAL REQUIREMENTS

The non-functional requirements of the system are:

- Operating system used during development of system
- Java version used during development
- Other non-functional requirements are efficiency requirements, dependability requirements, and security requirements, ethical, regulatory and legislative requirements.

PERFORMANCE/RESPONSE TIME REQUIREMENT

The recording system must respond to 99% of user requests within 1 seconds of the request.

AVAILABILITY REQUIREMENT

The application should be available to the users at all times.

The table below shows the availability percentage:

Availability Percentage	Approximate Downtime Per Year
95%	18 days
99%	4 days
99.9%	9 hours
99.99%	1 hour
99.999%	5 minutes

RECOVER REQUIREMENT

The application will automatically save the stories in the case of failure.

The user will be able to click again on the app logo and continue using the application.

MAINTAINABILITY REQUIREMENT

In the case of failure, the expected data will not be corrupted.

If the application fails while a story is being recorded, the story will be saved in the device database. If the story has not been recorded completely, the user will have to start the recording process again.

EXTENDIBILITY REQUIREMENT

The application may be updated with additional functionality over time with the objective of improving and offer more options to the users.

SECURITY REQUIREMENT

StoryTellerApp is a simple application that allows the user to publish and share stories with other users. It's difficult to corrupt the system as there is an optimal logic behind it.

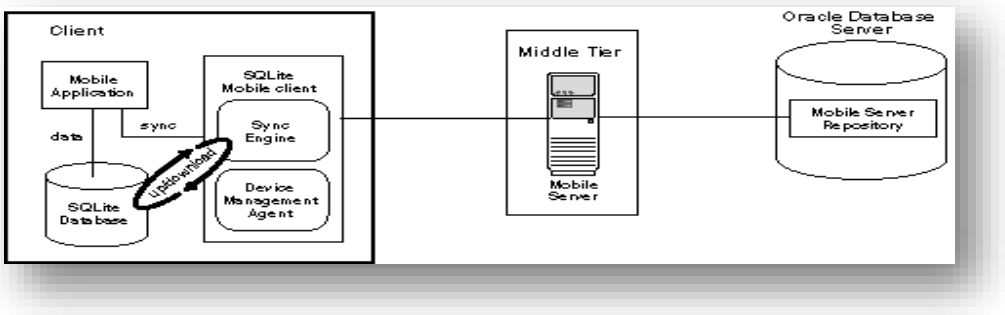
The Application can be tested with accuracy and strict quality controls to bring the best service level to the user.

These tests are done every time there is a new improved release.

DATA REQUIREMENTS

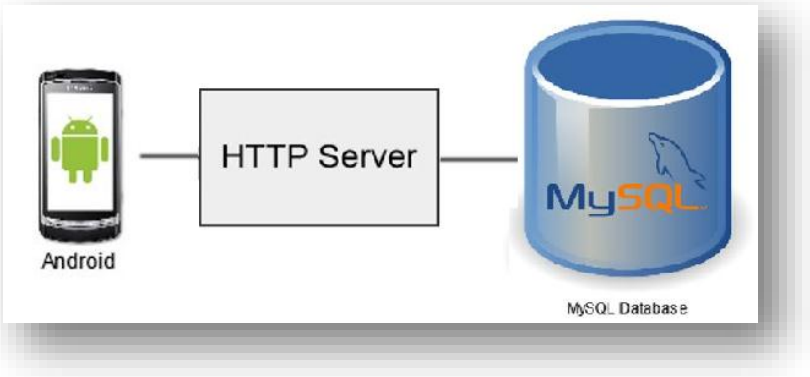
The data requirements will be outlined and detailed in this section. The data will be stored in two databases one in SQLite and the other one hosted online in MySQL.

- **SQLite Database**: The application will hold a SQLite database. This database will store the stories saved by the users in the mobile device.



(Oracle® Database Lite SQLite Mobile Client Guide - http://docs.oracle.com/cd/E12095_01/doc.10303/e16214/soverview.htm)

- **MySQL Database:** A database will be hosted online. This database will be the major database for this application as it will store the voice recordings of all the users.



ENVIRONMENTAL REQUIREMENTS

The presence of the following requirements are essential throughout the development process of the Android Application.

- **Laptop:** A laptop, with enough resources to build and run the application i.e. 4GB+ of RAM, 50GB of Disk Space, 1.8GHz Processor+.
- **Android Phone:** An android mobile phone is needed to test the capability of multiple requests, layout and compatibility.
- **Android Studio:** The official Google android IDE for developing Android Applications.
- **Android SDK:** Software Development Kit, supplied by developer.android.com, provides the tools needed to develop an Android Application.
- **SQLite Database:** The SQLite database is used to store data in the personal device Available from http://www.sqlite.org/
- **MySQL Database:** The MySQL database is used to store data in the server.
- **Internet Access:** This is required to access the various Android documents on developer.android.com, and other online resources.
- **Illustrator/Paint:** Needed to develop and edit graphics and icons that are used in the application.

TECHNOLOGIES USED

Java –This programming language is the most used language to develop Android applications in Android studio.

Android – Used due to its overwhelming popularity in the mobile device market and easily accessible plugins and tutorials.

Android Studio – As we were developing an Android mobile application, Android Studio was the obvious choice for this development.

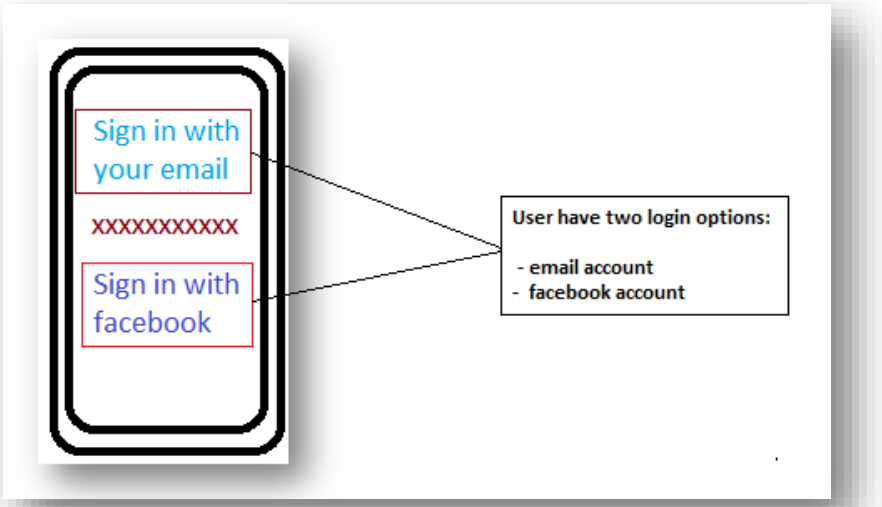
SQLite Database – Comes as a free downloadable plugin to work with either NetBeans or Android Studio.

MySQL – Open source relational database management system

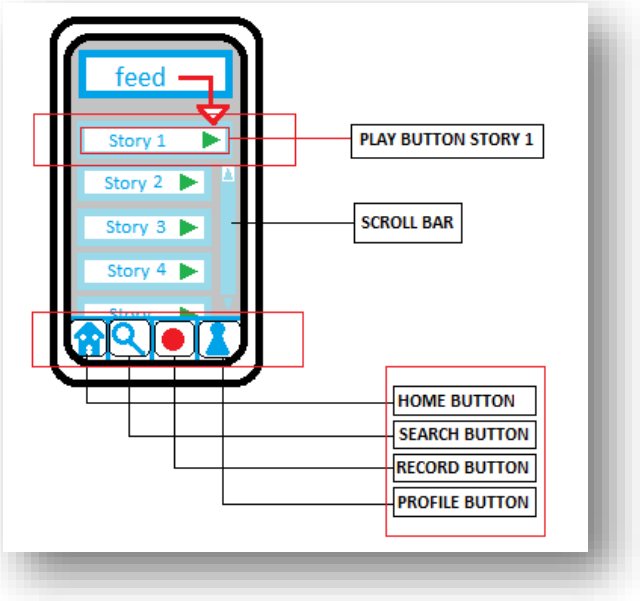
GUI

The user interface requirements are described as below:

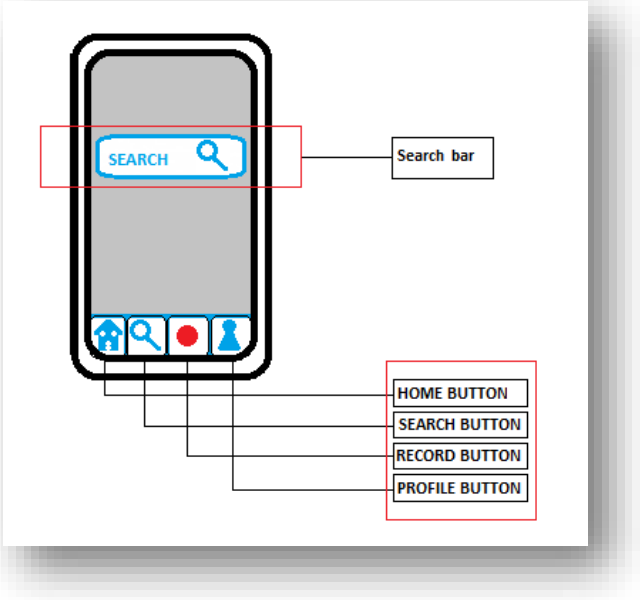
MAIN PAGE



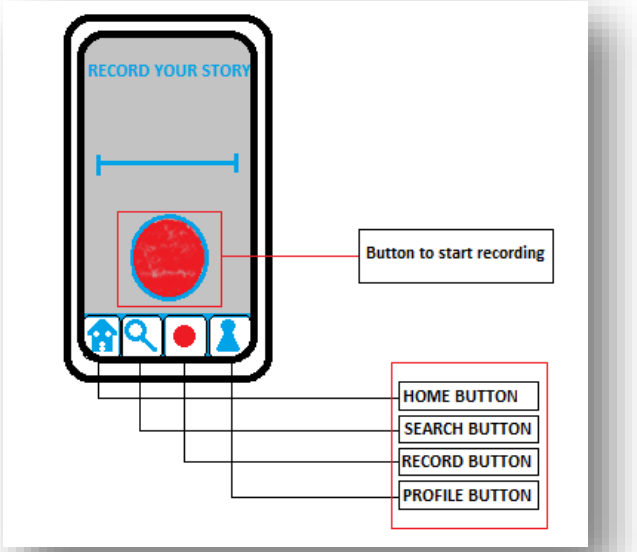
HOMEPAGE - STORY



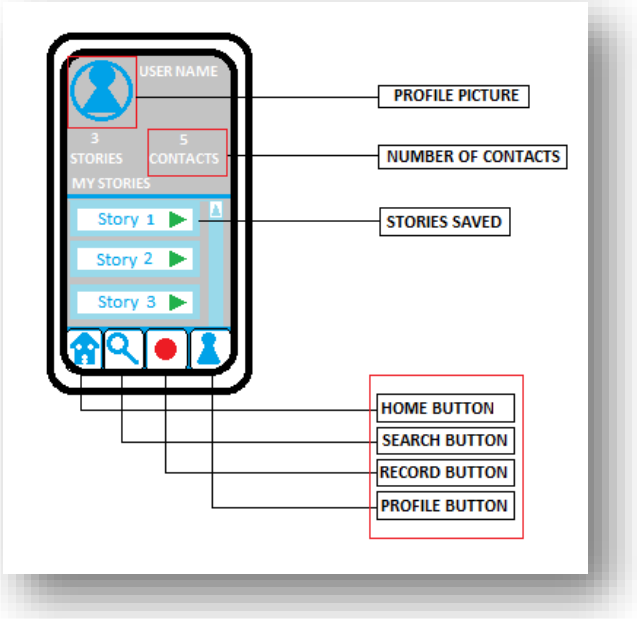
SEARCH PAGE



RECORD PAGE

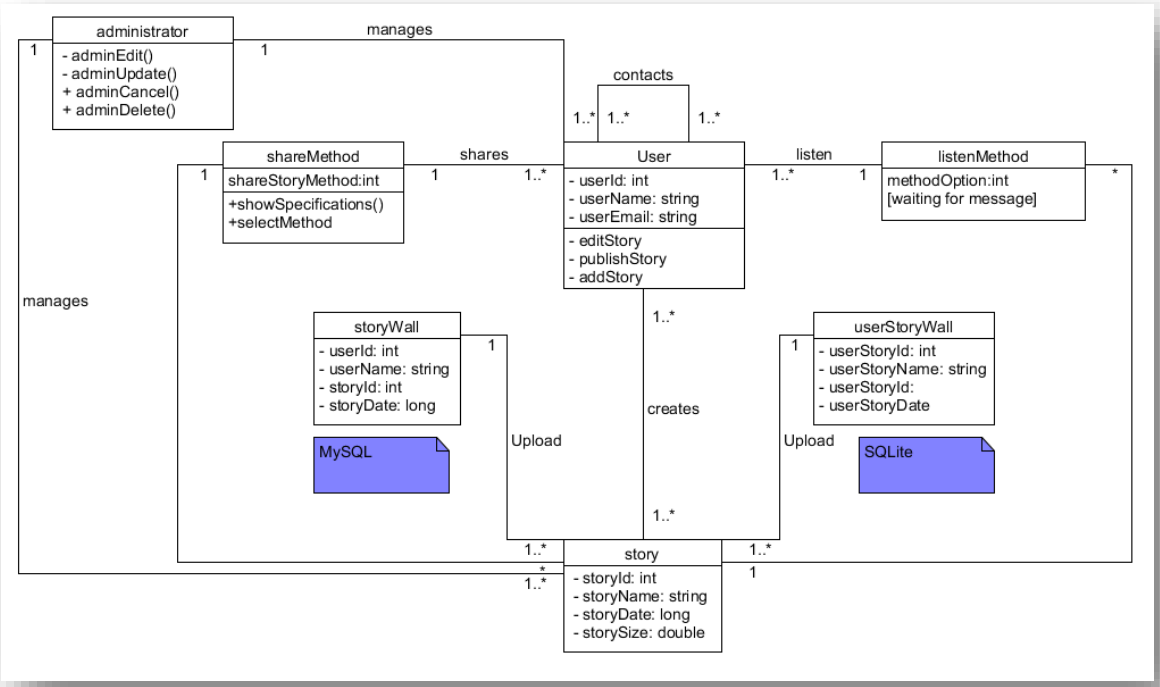


PROFILE PAGE



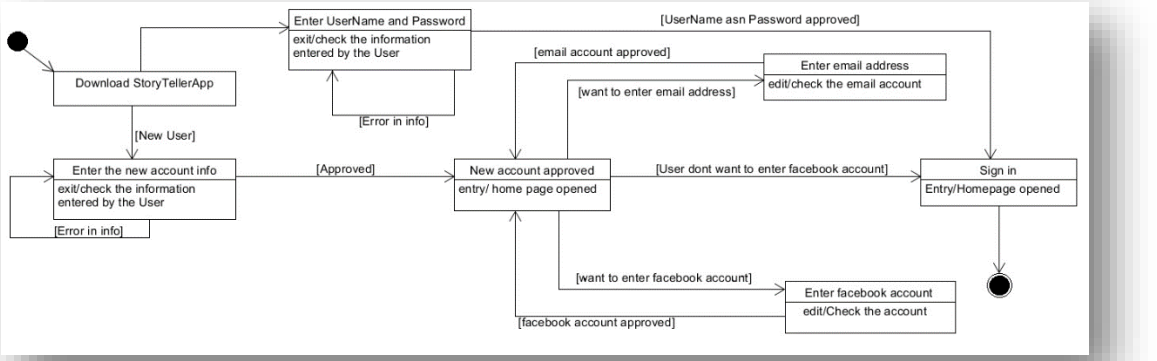
STORYTELLERAPP CLASS DIAGRAM

The class diagram below shows what the structure of the application is. There is a user that can create share and play stories and an administrator that will manage the user profiles and the stories recorded.



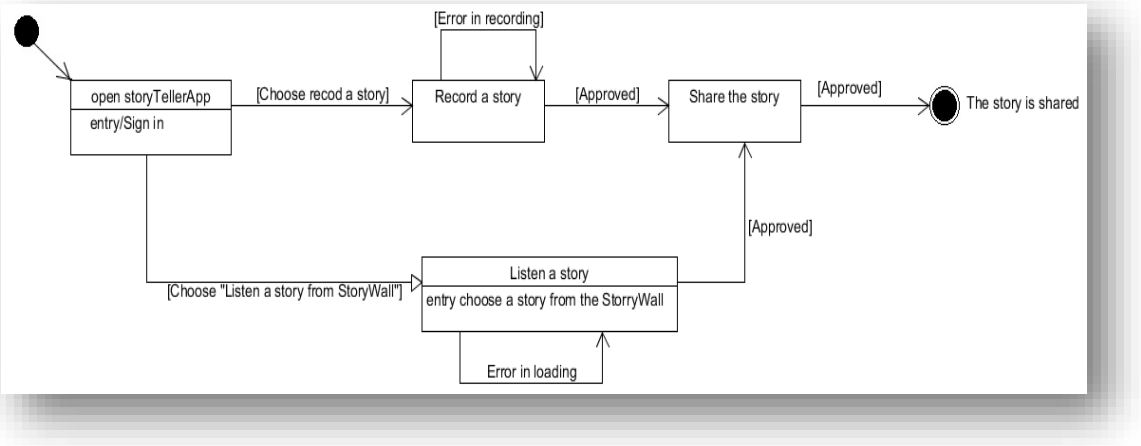
STORYTELLERAPP STATE CHART DIAGRAM - OPEN AN ACCOUNT

The below diagram shows the steps that the user has to follow since the application is downloaded until the application account is opened.



STORYTELLERAPP STATE CHART DIAGRAM - RECORD AND SHARE OR LISTEN A STORY

The below diagram shows the steps that the user has to follow to record and share or play a story.



SYSTEM EVOLUTION

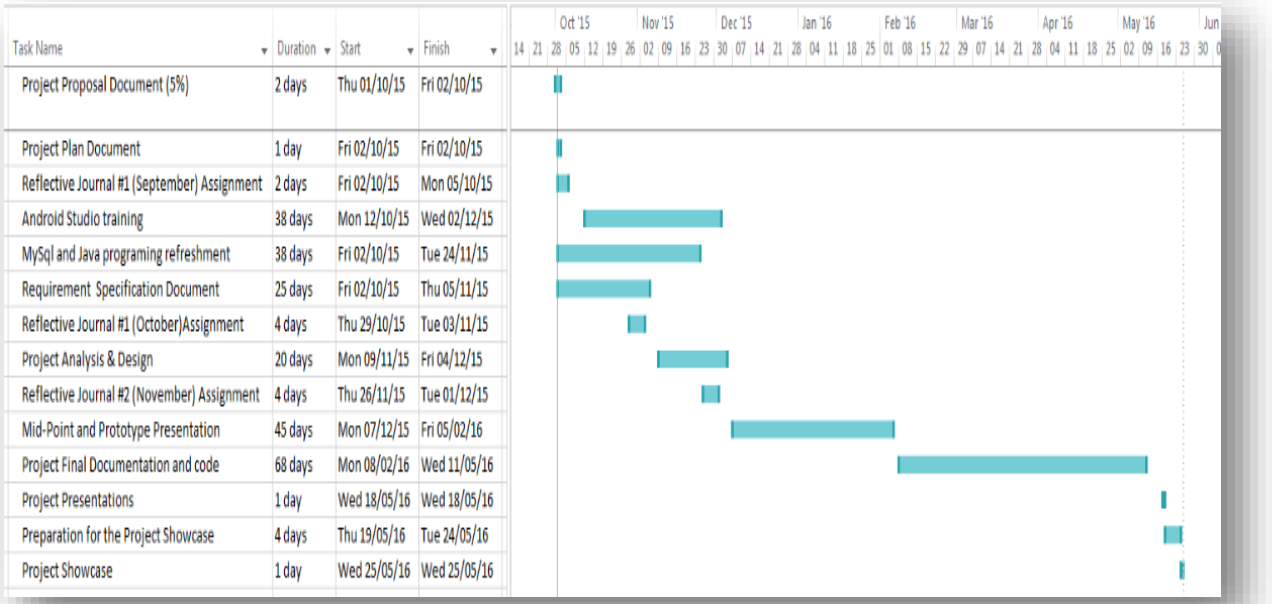
The application will evolve with the time as there are more features and functions to be added in future releases.

Some examples of further development for the application would be:

- Favourite list integration – User will be able to create a list of favourite stories.
- Story rating – Users will be able to rate the stories.

Part of the application evolution will be orientated to security in order to have an application for all kind of customers.

PLAN



Task Name	Duration	Start	Finish
Project Proposal Document (5%)	2 days	Thu 01/10/15	Fri 02/10/15
Project Plan Document	1 day	Fri 02/10/15	Fri 02/10/15
Reflective Journal #1 (September) Assignment	2 days	Fri 02/10/15	Mon 05/10/15
Android Studio training	38 days	Mon 12/10/15	Wed 02/12/15
MySql and Java programing refreshment	38 days	Fri 02/10/15	Tue 24/11/15
Requirement Specification Document	25 days	Fri 02/10/15	Thu 05/11/15
Reflective Journal #1 (October)Assignment	4 days	Thu 29/10/15	Tue 03/11/15
Project Analysis & Design	20 days	Mon 09/11/15	Fri 04/12/15
Reflective Journal #2 (November) Assignment	4 days	Thu 26/11/15	Tue 01/12/15
Mid-Point and Prototype Presentation	45 days	Mon 07/12/15	Fri 05/02/16
Project Final Documentation and code	68 days	Mon 08/02/16	Wed 11/05/16
Project Presentations	1 day	Wed 18/05/16	Wed 18/05/16
Preparation for the Project Showcase	4 days	Thu 19/05/16	Tue 24/05/16
Project Showcase	1 day	Wed 25/05/16	Wed 25/05/16

MONTHLY JOURNALS

SEPTEMBER

I have been thinking about the final year project since the first year of college. I did not realized that I am already in the fourth year and this is the moment where I have to start doing it.

But what am I going to do for the final year project? Why? How? When? All of them typical questions of final year students involved in the final year project.

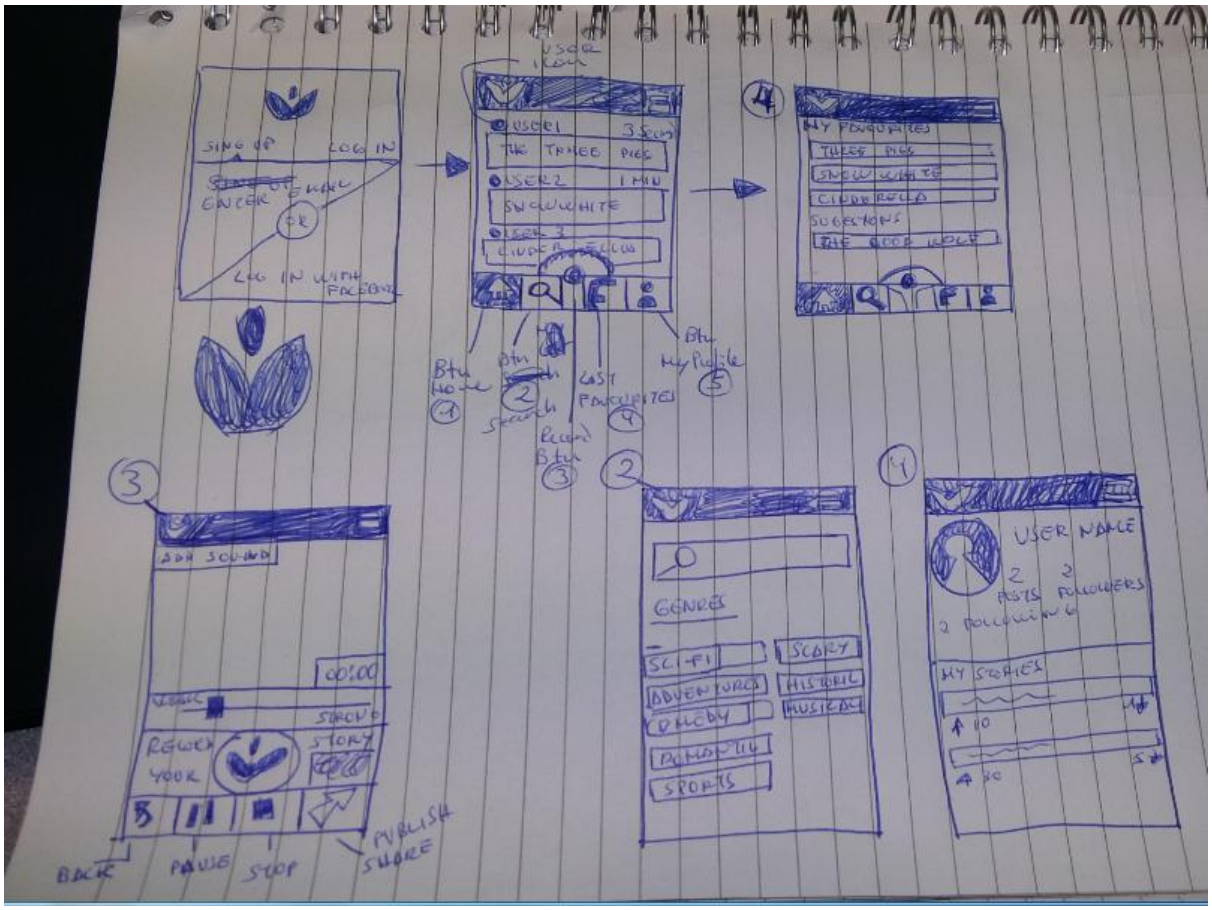
My mind was in blank, I did not have any idea. I was imagining myself at the final year presentation inventing and telling a story of how I was unable to do something.

Public speaking is not one of my strengths. I always admired how the storytellers speak in public, the way they use to capture the attention of the audience and the way they make them play with their imagination.

I had the idea for the project straight in front of me. Why not create a storyteller mobile app?

But how?

I started to imagine the app in my mind and I drew it in paper:



The picture above (I know it is not that great) shows the first idea of what the app would be.

I started the research once I took the decision to go ahead with this idea. Then I started writing the project proposal and send few emails to the lectures for opinions.

I received the following opinions:

"*It is a very interesting project. I would advise you to be as ambitious as possible with it. It has the potential for very good marks.*"

"I don't think it is a good project idea. Social networks are not built around one type of technology or media type distribution. Those are built around a value creation aspect that drives masses to participate. Why would people use your app if there is YouTube, Vine, Instagram, even Coub etc? Yes, the videos there are short (Vine, Instagram, Coub), but they do tell a story the same way you are describing. If you would like to create an app simply for recording audio books read by parents for their children – that can be an interesting project from my personal point of view, if it is done right and put in right context."

"You have something here, especially the "Listening" one"

I will start the creation of the requirements and diagrams in this month.

The next update of the journal will be soon and I will be adding few bits of what the project will be.

OCTOBER

My Achievements

During the month of October I continued with my research about the project. I came across to very good ideas and tools to develop it. I had a better idea about how the project would be and the best approach to use.

I designed the GUI of the application using paint and then I started to create diagrams for the software requirements documents.

While I was preparing the documentation I started to prepare the software required. I downloaded Android studio, bought some Android tutorials and loaned a couple of books from the NCI library.

By the end of October I was able to complete the software requirements specification document.

My Reflection

Once all the requirements documentation is completed, it will become the bible of the project, a guide to follow to create the application following the steps and in an easily way.

I met my supervisor to have a first contact and have feedback about the project and about the documentation. The feedback was good, and that motivates me to deliver a good project at the end of the final year.

Intended Changes

As mentioned in my previous journal, I will be using tools that I never used before like Android studio.

The objectives for the month of November are:

- Start Design and analysis.
- Complete the Android tutorials.
- Start coding for the mid-term presentation.

Supervisor Meetings

Date of Meeting: 05/11/2015

Items discussed: Project, design, deliverables, support, availability

NOVEMBER

My Achievements

During the month of November I continued working in the design.

Even if I already delivered part of the application design in the requirement specification document I added more diagrams and thought about how the application development and database will be.

I continued with my research and android tutorials to start building the application.

By the end of November I was able to complete the analysis and design specification document.

My Reflection

So far I am happy with the idea and the documents delivered.

I like the idea of start developing the application and see if I was right with my design and requirements.

I will contact my supervisor again after this deliverable and before the midterm presentation.

Intended Changes

There will be changes while I will be building the application. Those changes will come while I work on it

The objectives for the month of December are:

Finish the Android tutorials.

Start building the application.

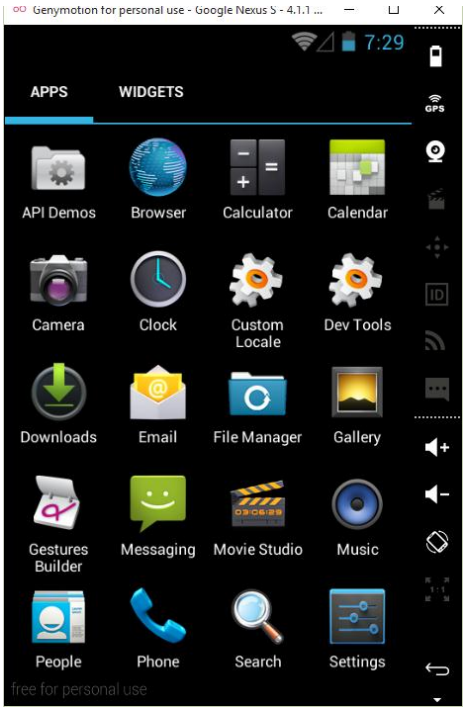
Supervisor Meetings

I have not meet my supervisor during the month of November but I intend to communicate with him in December.

DECEMBER

Finished one of the android tutorials.

Installed in Android Studio the emulator Genymotion which is much faster than the Android emulator.



Research more information and tips to build the application.

My Reflection

This month and the month of January is where I will have more work.

I found the tutorials very useful and now is time to start preparing the app for the midterm presentation.

During these two months I will be basically coding.

Intended Changes

The objectives for the month of December are:

- Start building the application.
- Prepare midterm presentation.

Supervisor Meetings

I have not meet my supervisor during the month of November but I intend to communicate with him in January.

JANUARY

Reflective Journal - January

Student name: Jose Alberto Sacristan Alvarez

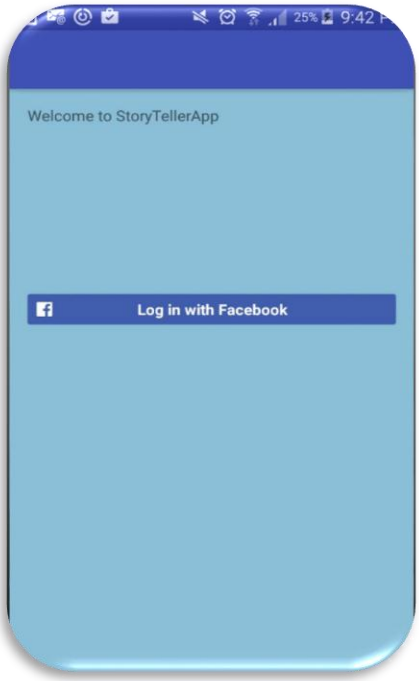
Programme: BSc in Computing

Month: January

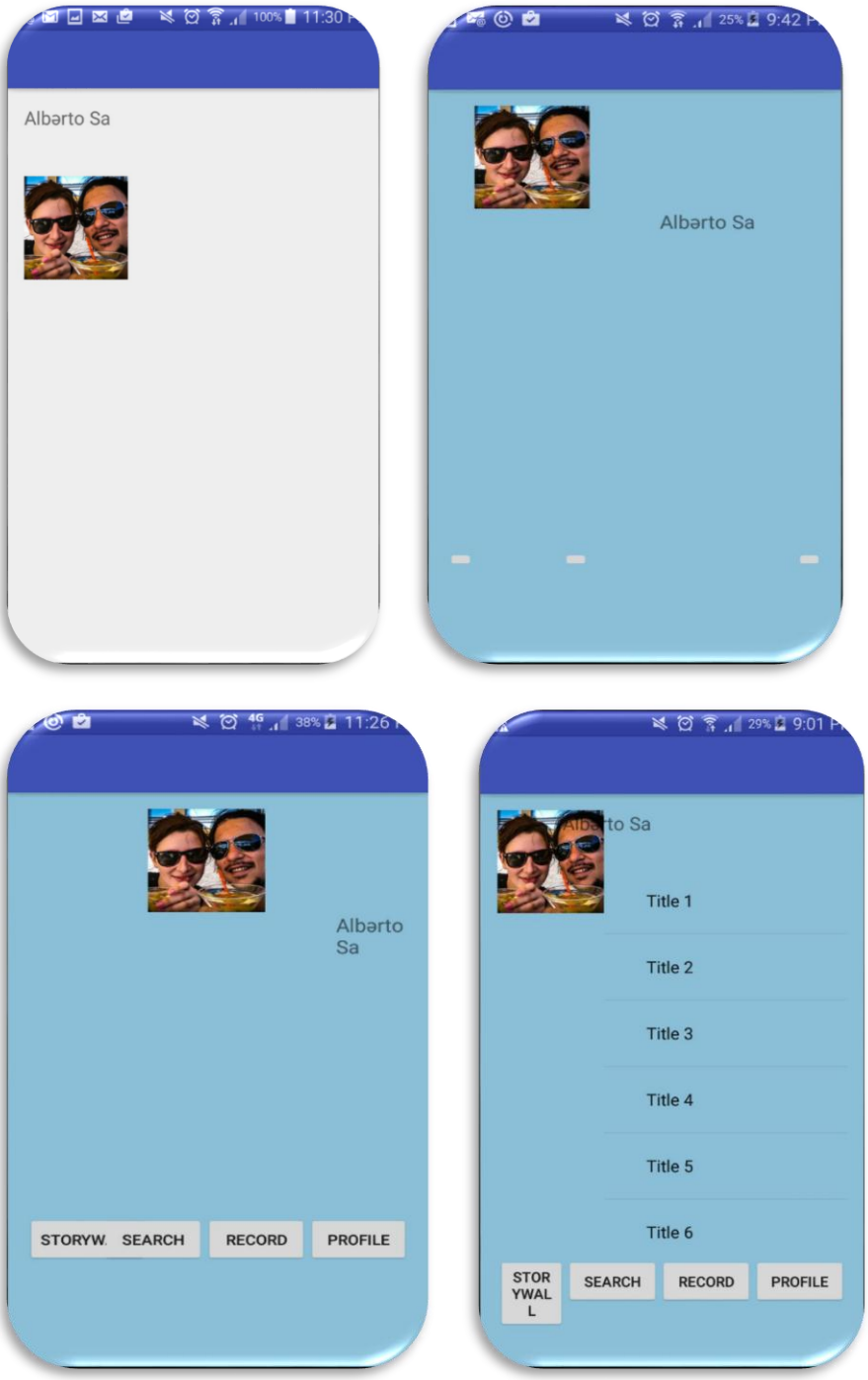
My Achievements

After Christmas and exam period I focused more in the prototype application.

I implemented the Facebook Sdk and the Facebook login



And I experiomented with the tabs, buttons and list views.



I managed to bould the prototype for the presentation and I set the bases to continue with the media recording implementation.

I found Fabric.io and I installed Fabric sdk.

I will be using Crahslytics, which will help me with the resting reports

My Reflection

During the month of January I made some changes and took the decisions on how to make the app and I started to build it.

Then I started to build the app.

Intended Changes

I will cancel the email login. I will leave only Facebook login for the following reasons:

- Security – Users have to provide phone number /email to have a Facebook account.
- Data – Facebook API provides user data that can be stored in the database.

In further development this can be added alongside other social networks logins.

Other change is that all the audio files from the wall and from the profile will be stored in the server database. The reason behind is that in that way the audio files are not stored in the SD card.

Supervisor Meetings

I have not meet Paul after the Christmas/exams period but I intend to talk to him soon.

OTHER MATERIAL USED

Any other reference material used in the project for example evaluation surveys etc.

CD containing code should be glued to the technical report.

(**Only applicable to the Final Report in May 2016**)