IEEE Requirements Specification Document

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Course: *BSc Technology Management – Business Analysis*

Project: *Medella App*

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Declaration Cover Sheet for BSHTM4 Project Submission

SECTION 1

Final Project – Medella App

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Version	Final Version
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SECTION 2 Confirmation of Authorship

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I confirm that I have read the College statement on plagiarism (summarized overleaf and printed in full in the Student Handbook) and that the work I have submitted for this assessment is entirely my own work.

Signature: Aidan Doyle

Date: 10th May 2017.

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When referring to the work of another author within the text of your project you must give the author's surname and the date the work was published. Full details for each source must then be given in the bibliography at the end of the project.

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- That a student's marks shall be reduced.
- That the student be deemed not to have passed the assignment.
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- That other examinations sat by the same student at the same sitting be declared void.

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- Suspending a student from college for a specified time.
- Expelling a student from college.
- Prohibiting a student from sitting any examination or assessment.
- The imposition of a fine.
- The requirement that a student to attend additional or other lectures or courses or undertake additional academic work

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1. REQUIREMENTS ELICITATION & ANALYSIS PLANNING

1.1. Introduction

Before I begin the Requirements elicitation for the development of this App, it is important to formulate a plan on how I will elicit the necessary requirements. This will give me an understanding of the elicitation scope activity. It will assist me with selecting the correct elicitation techniques and help identify other resources that may be needed during the requirements elicitation. The requirements elicited will be for the Application that is to be developed. It is an Application that as a basic requirement will allow the users to record, store and retrieve personal health information.

The Medella App is being developed primarily for the Business Owner but the reasoning behind its creation is for the benefit of other stakeholders i.e. the public currently there is no App that will allow general user store and retrieve all their personal health information. The App will display visual diagrams of related health issues to allow users to record and view information. The aim of the App to is give users control over their own personal health information. This will empower the user with the aim of encouraging user to be more health conscious and prevent errors occurring when interacting with medical professionals.

Users will have the ability to view the history of Appointments or consultations they have attended. It will allow records to be created recording what has occurred during the Appointment/consultation and any actions that are required going forward. This will allow the user to review this information as they seem fit. If for instance a user attends an Appointment with one Doctor but for any reason has to visit another Doctor that they will have the record of what has happened in the user's pervious visit. This will assist both the health professional and the user to ensure that the correct issues are addressed and assist in minimizing errors.

1.2. Business Need

The health and fitness market has been rapidly growing especially with the advancements in technology. The access to social media and its influence on the public has led to increased focus on health and fitness. The market is flooded with over 165,000 different Applications relating to health and fitness such as step counters, food trackers etc. The need for an Application to be developed as there is nothing easily available to consumers that will store a person's personal health information and allow them to access it while on the go. The Business Owner believes there is a need for people to have total control over their own personal health information. He sees the need for people to have access and manage their own health information and not be reliant on health professionals.
People travel to different countries regularly. They generally do not carry their health information with them be it on a mobile device or in document form. If they needed to visit a health professional while abroad they would not have immediate access to all their health history. This Application would provide a solution to this issue. It would eliminate guess work and give people peace of mind.
The Application which is my own idea will have some basic requirements that I want functioning on the App. These include:

- A cloud based database that will store all the information
- Excellent GUI
- Security (Username and password login)

- Multifaceted options for many different uses: e.g. Dentist, Physiotherapist, Chiropractor, Doctor Etc.

To understand the business need in more detail, requirements elicitation will be conducted so it can determine what requirements stakeholders would want from such an App. After conducting requirements elicitation, the results will be used to assist in the direction the development of the App should take.

1.3. Business Case

This project is an idea discussed and formulated between myself and my client, the Business Owner. As this is the case I have developed a partnership with the client. He is an enthusiastic entrepreneur that believes the idea has potential to be used globally across various web based platforms. He has agreed to fund the development of the App. My client and I have agreed to have a meeting to set out the terms of the funding. We will evaluate whether the benefits of the App justify the costs. We have both initially agreed to proceed with the requirements elicitation to gather feedback and suggestions on the concept and what could be done to improve the concept. Regular progress reports will be presented to the client during monthly meetings.

Security of information will need to be established. The App must contain a Disclaimer statement that must be accepted by the end user. The App must include login details such as username and a password to grant access to the App

1.4. Stakeholder List

Please find the list of the identified stakeholders and a supporting Importance/Influence Matrix.

1. Business Owner (Client)
2. End Users
3. Developer
4. Dentists
5. Chiropractors,
6. Physiotherapists
7. Doctors
8. Business Analyst

1.4.1. Power/ Influence Matrix (Power on the X Axis, Influence on the Y Axis)

High

Administrator ***Keep Satisfied***	Business Owner Business Analyst Developer ***Manage Closely***
Monitor	General Users Health Professionals ***Keep Informed***

Low **Influence** **High**

2. REQUIREMNTS ELICITATION TECHNIQUES

2.1. Brainstorming

2.1.1. Overview and objectives

A brainstorming session will be held so ideas and issues can be discussed between stakeholders associated with the App. The objective is to get a list of possible requirements that can be analysed. Each member of the session has been contacted and told what is required of them during the session. The session will be documented by a moderator who will record all ideas put forward.

2.1.2. Participants:

Client
Two regular Physio users
Two regular Doctor users

2.1.3. Guidelines for Brainstorming Session:

- Please show up 15 minutes before for light refreshments and introduction.
- Do not discuss ideas before the session.
- Please switch off mobile phones before the session.
- Each person will be allocated ten minutes to put forward ideas.
- Please remain silent while participants put forward ideas.
- There will be a 10-minute recap at the end of the session to further discuss ideas presented.
- Behaviour deemed unacceptable by the moderator will lead to participants being ejected from the session by the moderator.

2.1.4. Location

Ballyboden GAA Clubhouse Firhouse - The Function Room

2.1.5. Date & Time of Session

Saturday 8th October 2016 11.30 am

2.2. Survey

2.2.1. Survey Participants

General Public
Health Professionals

2.2.2. Distribution Method

To distribute the survey, it was posted online via Facebook and emailed to specific health professionals. It was also distributed through hard copy to a local community centre to gain response from the older generation that may not have internet access.

2.2.3. Participants:

Client
Two regular Physio users
Two regular Doctor users

2.2.4. Survey Objectives:

The objective of the survey was to gather requirements and understand the demographic of the stakeholders associated with the App. It is a technique that helps understand what these stakeholders would want from a health-related App. The survey will provide an understanding of people interaction with App's and the reason for it. It will also provide an insight into potential user's attitude of health Apps.

2.2.5. Survey

https://docs.google.com/forms/d/e/1FAIpQLSfl2T4BvUMcilxf2gRFFVkKpVby6OukNtsSrstKipIsDfLEWw/viewform?usp=sf_link

Please indicate your gender?

- Male
- Female

What age group are you?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

What is your current status?

- Self Employed
- Full Time
- Part Time
- Unemployed
- Student
- Retired

Do you have any children under 16? If Yes, how many?

- 1
- 2
- 3
- 4+
- None

Do you have any dependents that you care for? If Yes, how many?

- 1
- 2
- 3
- 4+
- None

How often do you visit the following?

Physio	less than 3 months	3 - 6 months	6 - 12 Months	1 Year +	Never
Dentist	less than 3 months	3 - 6 months	6 - 12 Months	1 Year +	Never
Chiropractor	less than 3 months	3 - 6 months	6 - 12 Months	1 Year +	Never
Doctor	less than 3 months	3 - 6 months	6 - 12 Months	1 Year +	Never
Hospital Consultant	less than 3 months	3 - 6 months	6 - 12 Months	1 Year +	Never
Public Health Nurse	less than 3 months	3 - 6 months	6 - 12 Months	1 Year +	Never
Occupational Therapist	less than 3 months	3 - 6 months	6 - 12 Months	1 Year +	Never

You should have immediate access to all your personal health information?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Which of the following devices do you own? (multiple answers accepted)

- iPhone
- iPad
- Android Phone
- Mac Laptop
- Windows Laptop
- PC
- Other:

Have you downloaded Apps for your devices?

- Yes-Always Free
- Yes-Free & Paid
- Yes-Always Paid

- No

Which of these health Apps do you have on your phone?

- Health Tracker
- Map My Run
- Map My Fitness
- Fitbit
- Strava
- Don't use any
- Other:

Why do you use these Apps? (Multiple answers accepted)

- Functionality
- Ease of Use
- Content
- Features
- Experience
- Other:

How likely would you be to recommend a health App to others?

- Very Likely
- Likely
- Maybe
- Probably Not
- Definitely Not

If an App was available to securely store personal health information, should it be available across all devices?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

What other features would you like on a personal health information storage App? (Multiple answers accepted)

- Health Professional Locator
- Medication Alert
- Medical Conditions
- Allergies
- Fitness Tracker
- Nutrition Tracker
- Other:
-

How likely would you be to allow certain information such as medical conditions or allergies to be available to emergency services?

- Very likely
- Likely
- Neutral
- Not Likely
- Definitely Not
-

2.3. Interview One

2.3.1. Participant

Dentist

2.3.2. Location

Black Glen Dental Clinic, Ticknock

2.3.3. Date & Time

December 23rd, 2016 7.00pm

2.3.4. Overview & Objectives

The aim of interviewing a Dentist is to understand how they would interact with the App from a professional perspective. The objective is to gather requirements that the Dentist recommends. It is important that the App is beneficial for the health professional. This interview will provide an insight. I will explain the concept of the App to the Dentist and an overview of the benefits for the users and precede with the interview questions.

2.3.5. Interview Questions

Q1. What is your opinion of the App?

Q2. Can you see the benefits for the general public?
Q3. If developed would you recommend this App to patients/clients?
Q4. If a Dentist feature was on the App, what information would you recommend it to store?
Q5. What benefits would an App of this nature provide you as a health professional?
Q6. If a number of patients/clients were using this App would it encourage you to use it?
Q7. Would you be opposed to updating the information of a client at the end of each session?
Q8. Do you think the information should be done by the patient/client or the health professional?

2.4. Interview Two

2.4.1. Participant

Physio

2.4.2. Location

Costa Coffee Shop Rathfarnham

2.4.3. Date & Time

Saturday January 21st, 2017 3.00 pm

2.4.4. Overview & Objectives

Similar to the overview and objectives of the Dentist Interview it is about gaining the understanding from a professional perspective.

2.4.5. Interview Questions

Q1. What is your opinion of the App?
Q2. Can you see the benefits for the general public?
Q3. If developed would you recommend this App to patients/clients?
Q4. If a p feature was on the App, what information would you recommend it to store?
Q5. What benefits would an App of this nature provide you as a health professional?
Q6. If patients/clients were using this App would it encourage you to use it?
Q7. Would you be opposed to updating the information of a client at the end of each session?
Q8. Do you think the information should be done by the patient/client or the health professional?

2.5. Interview Three

2.5.1. Participant

Developer

2.5.2. Location

Starbucks Coffee Shop Rathmines

2.5.3. Date & Time

Saturday February 11th 2016 1.00 pm

2.5.4. Overview & Objectives

The concept of the App will be discussed at the beginning of the interview. This is an interview to try gain an understanding what developing this App may require from a developer's point of view. It is to assist in identifying issue that may arise during the development process. It may provide requirements that may have been overlooked.

2.5.5. Interview Questions

Q1. Do you think that the concept of the App is worth developing? Discuss
Q2. What is your opinion around storage of sensitive information that may be stored on the App?
Q3. How long roughly would an App like this take to be developed?
Q4. How much would it cost?
Q5. What in your opinion would be requirements to consider for this App?
Q6. Have you experience developing an App like this? If so discuss?
Q7. The App may contain an emergency Access feature that allows Emergency services to access certain information. Have you any thoughts on this?
Q8. Have you any advice going forward in the development of this App?

2.6. MoSCoW Analysis

This technique will be used to assist in prioritizing requirements. It is done so that a common acceptance understanding is reached by stakeholders. This technique will prioritize requirements according to **Must Have, Should Have, Could Have and Should Have**. This was put forward to the stake holders as a technique to use and has been agreed. MoSCoW analysis can sometimes cause conflict as different stakeholders have different perspectives. In the development of this App it is the Business Owner that has the final say on sign for the priority of requirements so working together through regular meetings will ensure that the Business owner is satisfied with the assigned priority.

2.7. Interface Analysis

This is how the user will interact with the App. For this App, it will be done using use case diagrams. There is no existing system that is like this App so the use case diagrams will be requirements to be used in the development of the App. These requirements will define how the user will interact with the system. By defining these requirements early, it will expose any potential issues early to the stakeholders. This will be done using wireframes and Use Case Diagram.

2.8. Risks

There are risks involved with every project. Identifying risks and potential issues will assist in the development of the App. The following are the risks identified for this project:

- Requirement elicitation. Getting stakeholders to commit to specific times for interviews, focus groups etc. This must be managed by setting targets and deadlines;
- The requirements necessary for the development of the App will exceed the funds available;
- Scope creep, a s the project progresses there is a risk that stakeholder's requirement expectations could increase from that of the defined scope of the project.

These risks must be actively managed and mitigated.

3. REQUIREMNTS ELICITATION TECHNIQUES RESULTS

3.1. Summary

The following is the results that were elicited using requirements elicitation techniques. Requirements for the App will be gathered from these results and they will be used to define the requirements that will be used in the development of the App.

3.2. Brainstorming

The moderator recorded the participant's ideas and comments as they were presented. The client (Business Owner) was the first to present. He stared by giving ideas of for a name for the App. These were, MyHealth, MeHealth, Medella, Store & Go. Moving onto ideas for different features on the App. He suggested that the App should have individual features that would store information for the users on Doctor, Dentist, Chiropractor, Physio, Eye and Ear and Hospital visits. These features would allow users to store the history of previous visits they have had to these professions. Other features included having an option that allowed medical services have access to retrieve information on a user in case of emergency. He said that there is a similar feature already available on the iphone so may not be difficult to incorporate. The App could have forms available on it that could be completed and sent to health professional such as Eye Test Forms, Travel Insurance. Security was flagged as important. Suggestion was made to have a Disclaimer on the App similar to Google and Facebook that gets the user to sign off so that the user is aware that the App will have access to their information.
The App should have a register page, a home page that could display the different features available such as storage for the different health professionals.

For these results the input by the two regular users of a Physio has been merged together. They play for a GAA and attend the Physio regularly for injuries. They suggested that if the App was linked (synced) with the Physio that they could cancel Appointments. Also, that they could prepay for sessions for convenience. The App could also send a reminder text about Appointments. Other features were a fitness tracker and a nutrition tracker. It could store recommended exercises to be performed by the physio.

The two participants that regularly visit the Doctor presented next. They also suggested that there could be a cancellation option for visits. They thought that an instant messaging feature could be an option. Allowing the user to communicate with Doctor's or receptionists. A feature that displays prescriptions that can used to collect medication from pharmacies. It could have a feature that records visits to Hospitals, Midwife, Paediatricians, and Hospital Consultants. The App could store medication that the user is taking and medical conditions.

After the participants had finished with their allotted time slots. We did a ten-minute review to discuss some of the issues they may be concerned about. One issue was the security of the information. It was pointed out that Google docs operating on the cloud would have access to information that may be sensitive and that they seem to operate in accordance with law concerning this issue. The issue of Registering and Login for the App was raised so it was agreed that it must have a Register and Login feature.

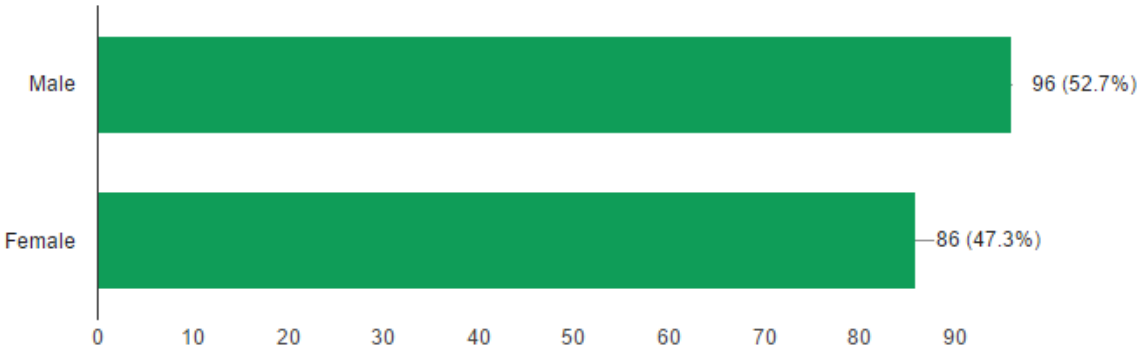
Through other informal brainstorming sessions other potential requirements were gathered. These included the App to keep a record of allergies, health professional locator to locate the nearest health professional. A feature that may allow people to travel abroad with pre-Approved medicine for medical conditions.

Requirements elicited from Brainstorming:

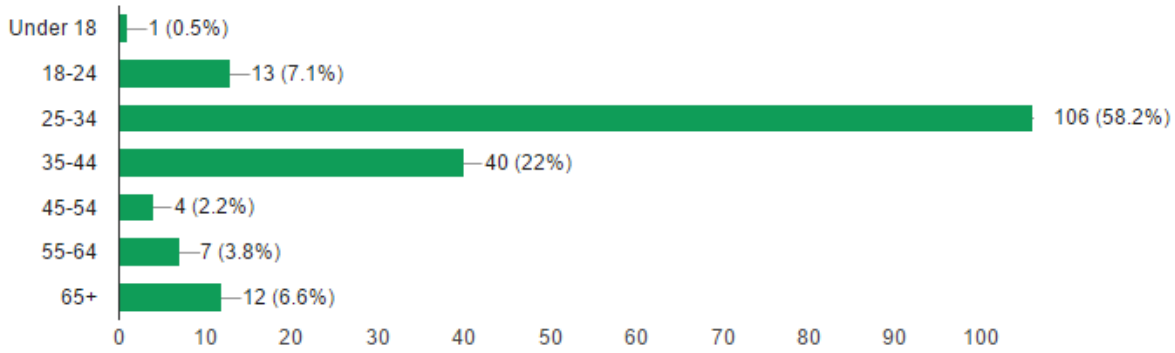
Name- Medella, MeHealth, MyHealth, Store & Go	Travel Insurance
Registration Page	Emergency Services access
Home Page	Eye Test Form
Login Page (username and password)	Disclaimer
Chiropractor Page	Sync App with Health Professional
Dentist Page	Prepay for Appointments
Physio Page	Cancel Appointments
Doctor Page	Reminder Messages
Nutrition and Fitness Tracker	Prescription for medicine
Visits to Hospitals, Paediatrician, Midwife	Security
Allergies	Health Professional Locator
Travel Documents for medication	Store visit History
Instant Messaging	Eye and Ear specialist feature
Medication	Medical conditions
Physio Exercises	Storage of information

3.3. Survey

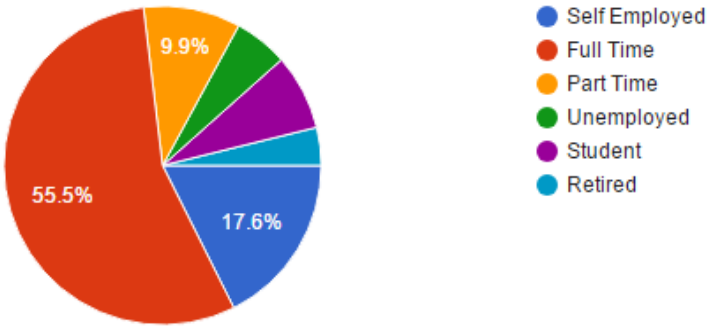
Please indicate your gender? (182 responses)



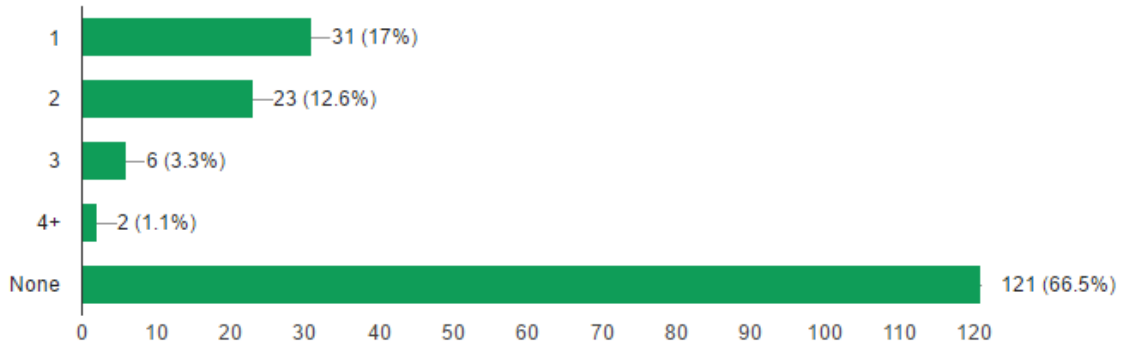
What age group are you? (182 responses)



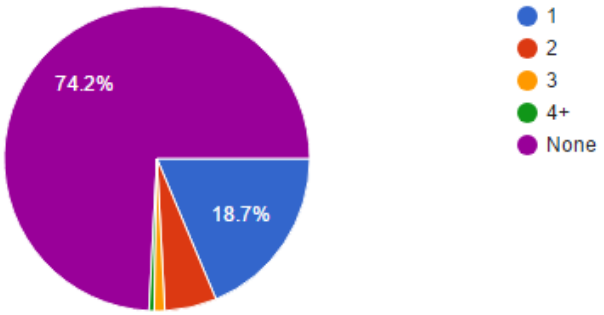
What is your current status? (182 responses)



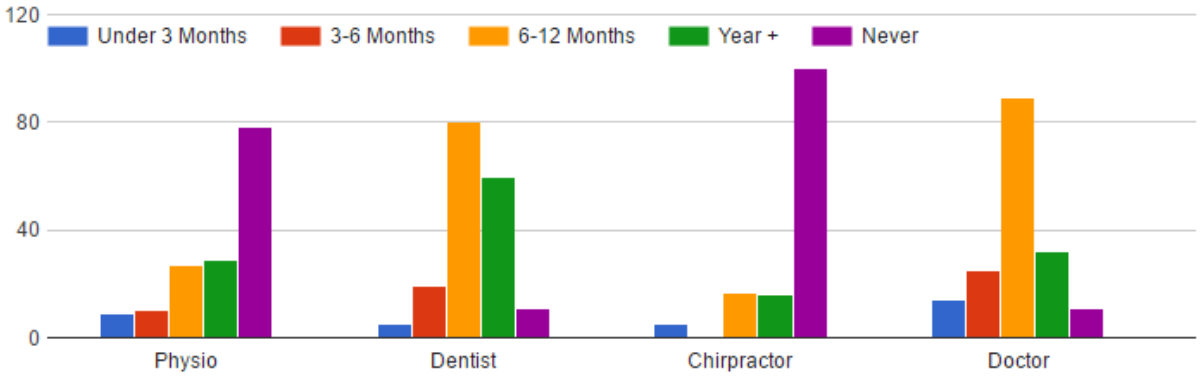
Do you have any children under 16. If Yes, how many? (182 responses)

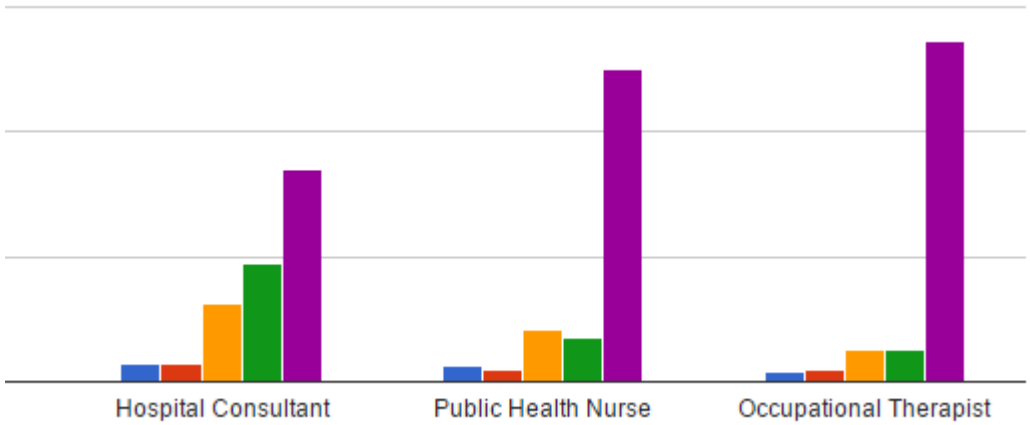


Do you have any dependents that you care for? If Yes, how many? (182 responses)

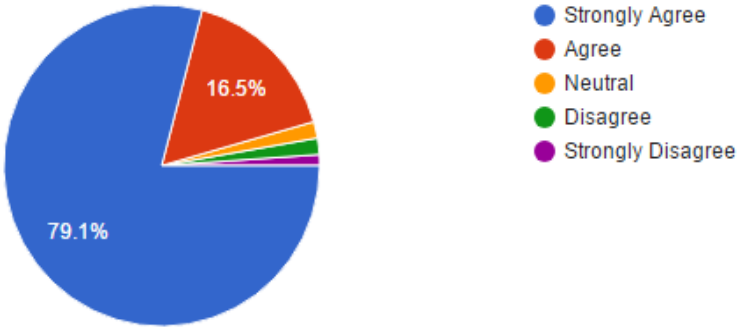


How often do you visit the following?

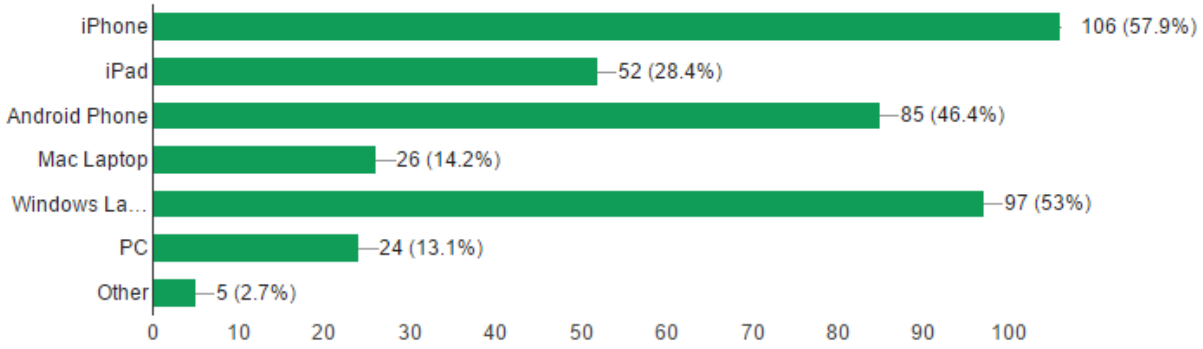




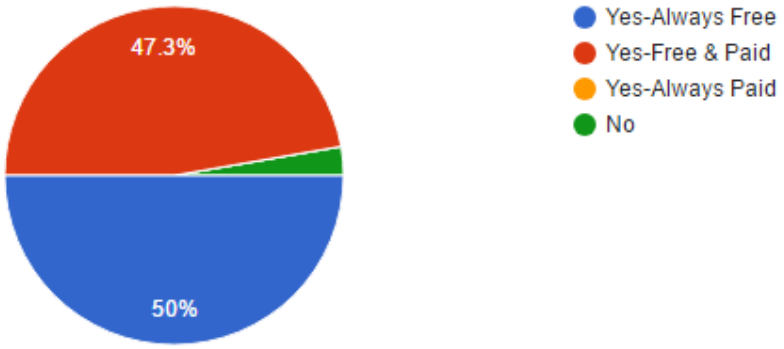
You should have immediate access to all your personal health information?
(182 responses)



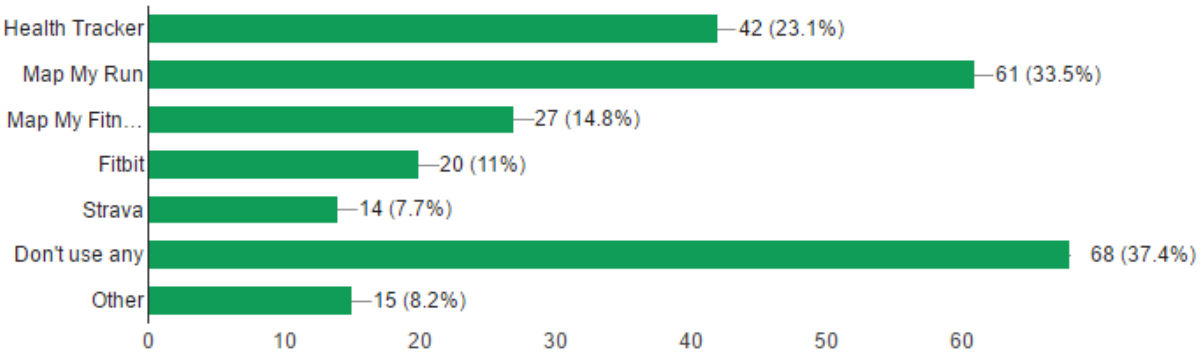
Which of the following devices do you own? (multiple answers accepted)
(183 responses)



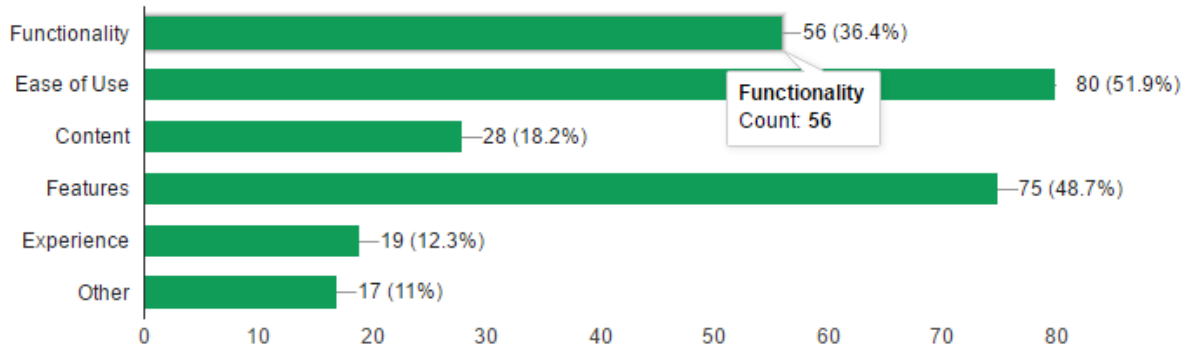
Have you downloaded apps for your devices? (182 responses)



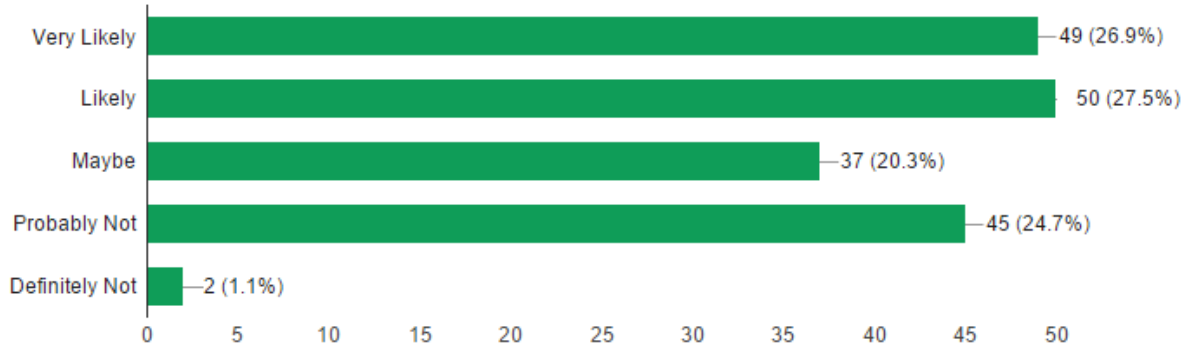
Which of these health apps do you have on your phone? (182 responses)



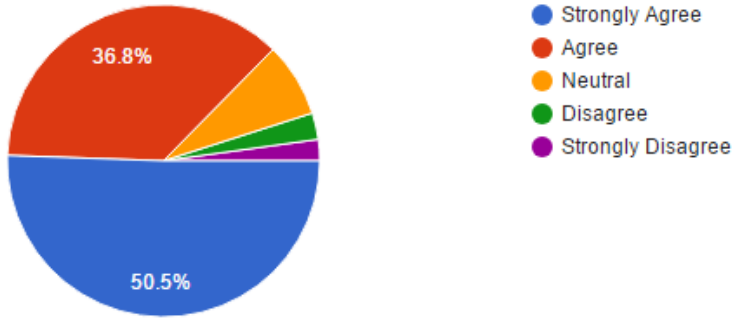
Why do you use these apps? (multiple answers accepted) (154 responses)



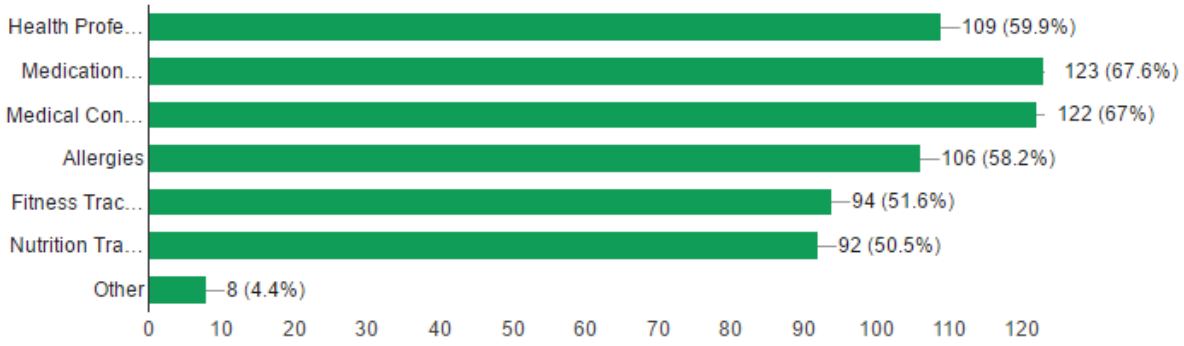
How likely would you be to recommend a health app to others? (182 responses)

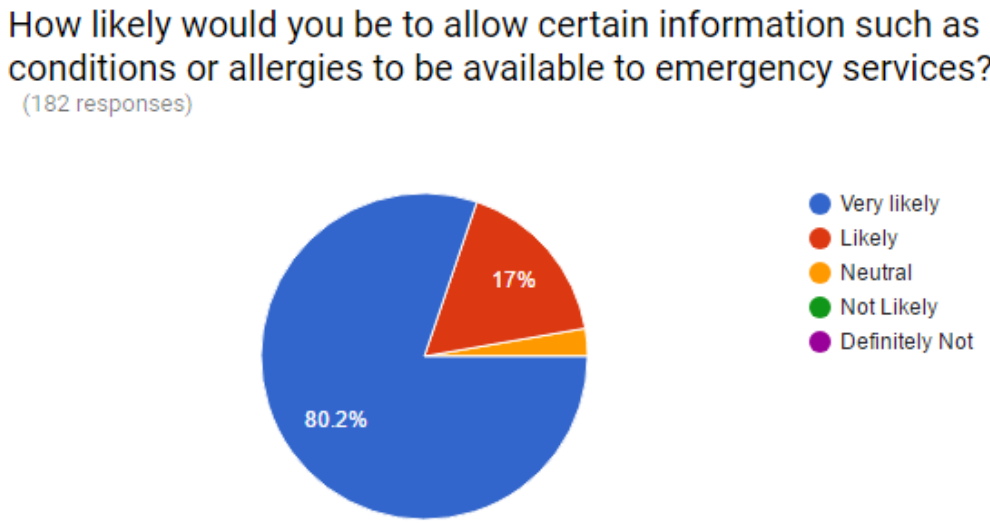


If an app was available to securely store personal health information, should it be available across all devices?
(182 responses)



What other features would you like on a personal health information storage app? (multiple answers accepted)
(182 responses)





Survey Conclusion

With the use of the internet it allowed for a high return of surveys in a relatively short period of time. In total, there were 182 responses. The aim of the survey was to gather requirements and survey potential users in relation to requirements already gathered. Certain questions offered the survey participant the option of “other” where they could input a potential requirement. These suggestions have been recorded and will be included in the MoSCoW analysis. The survey was completed relatively evenly in terms of gender (52.7% male, 47.3 female). Continuing with the demographic most participants were aged between 25-44, accounting for 88.2%. An effort was made to get responses from potential users of 65+. This was done as the life expectancy and age of retirement has increased in recent years. It was deemed important to make this effort and consider the responses.

Once an overview of the demographic had been established questions related to health and App usage were asked. This was done to gain possible requirements to do with the App. As the App is related to health information storage the question was asked about the visit frequency to health professionals. It is clear from the results that the top three with regular visits (12 months or under) were to the Doctor (128) Dentist (104) and Physio (56).

The participants agreed that they should have access to all their personal health information (Strongly Agree 79.1%, Agreed 16.5%).

The top three reasons people downloaded health related Apps was Ease of Use (51.9%), Features (48.7%) and Functionality (36.4%). Over 54% of participants said they were likely to recommend a health App to others.

To help identify potential features that could be part of the App the question was asked with multiple answers available for selection. This question provides helpful ideas that may become features of the App. They will be noted and analysed as requirements. They include,

- Health Professional Locator;
- Medication Alert;

- Allergies, Fitness;
- Nutrition Tracker.
-

97% of participants were likely to allow certain restricted information to be available to emergency services in case of emergency (Very likely 80.2%, Likely 17%).

Overall the response to the survey has been positive and it has assisted in gaining an understanding about the potential users and their needs. These responses will be used to determine requirements going forward.

3.4. Interview One – Dentist

What is your opinion of the App? Can you see the benefits for the public?

The App was received as an interesting concept by the Dentist. He thought that it was good that people would have more control over their health information, not just for the Dentist. He could relate to the idea that people are generally unable to remember what was said to people at the end of Dentist sessions.

Do you have Appointments from people that are 1 off or are they always regular?

Yes, he said he has Appointments with people that are a 1 off. That people who may be visiting or over on holidays need work on their teeth.

If developed would you recommend this App to patients/clients?

He said that depending on how the App ran in terms of reliability and, if it was the patient who inputted the record or the Dentist himself. He said clarity is need because the patient may input inaccurate information.

If a Dentist feature was on the App, what information would you recommend it to store?

He thought it would be useful to have a visual diagram of a set of teeth. Each tooth could be highlighted and selected. When selected the tooth could display data on work that has been done or may need to be done.

What benefits would an App of this nature provide you as a health professional?

He thought that if the App was developed successfully and used by his clients that it would assist in building a stronger relationship with his clients. If the App could let him keep a record on clients that could sync with his own database that may be convenient.

If several patients/clients were using this App would it encourage you to use it?

It would have to work so that he would be synced with client and could interact with them such as updating profiles.

Would you be opposed to updating the information of a client at the end of each session?

Not at all, if his clients wanted it he would have no problem updating it if it didn't take long. He felt that it would encourage clients to pay more attention to health issues.

Do you think the information should be done by the patient/client or the health professional?

He recommends that it is done by the health professional so that other professionals can be confident that it is accurate.

Interview Conclusion

The interview provided requirements that had not been addressed such as a display of the mouth in the Dentist feature. He stressed the importance of reliability with the App. For the App to operate effectively he recommended that the App be able to be sync'd between professional and client.

3.5. Interview Two – Physio

What is your opinion of the App? Can you see the benefits for the public?

The Physio liked the idea that it may encourage more people to be health conscious. She thought that security is a concern as people lose phones or they could be hacked through Wi-Fi.

If developed would you recommend this App to patients/clients?

Only if security was of a high level. The App must be reliable and work on different devices.

If a Physio feature was on the App, what information would you recommend it to store?

(I had explained about the concept the Dentist put forward). She thought that something similar would be interesting in the form of a display of a skeleton with the muscular system on it. They could then display information such as the names of muscles etc. Also, an educational feature on the anatomy and physiology of the human body.

What benefits would an App of this nature provide you as a health professional?

She said it would help in terms of when a new client comes for an Appointment with her and has been to physios previously, when they try to explain what had happened in previous sessions the information is not always correct. People tend to forget or that it can be lost in translation regarding foreign clients.

If patients/clients were using this App would it encourage you to use it?

Yes, she would if she could interact with the client on it. If the App was available 24/7 and reliable in terms of security of information.

Would you be opposed to updating the information of a client at the end of each session?

No, she would have no issue. In fact, she would prefer doing it herself instead of the client. This would give peace of mind that records being stored are recorded by professional and no false or misleading information is stored.

Do you think the information should be done by the patient/client or the health professional?

The professional so they can be confident that all records are correct and if a client went to another physio that they would know that it was the physio that recorded the information and not the client. In addition, f the general user could create and edit records then there is the risk that they may falsify records for their own benefit.

Interview Conclusion

Security is a concern, so measures should be put in place to prevent hacking. The App should work reliably on all devices. A visual display would be a useful feature that displayed the human muscle system. Each muscle represented when selected could record and store information about the user. An educational feature explaining the anatomy and physiology of the human body may be a feature. She recommended that the professional be the one to create the record on the user. A point made was that if the general user could create and edit records then they may do that and they integrity of the records would be compromised. This is a relevant observation and should be strongly considered as a must have on the App.

3.6. Interview Three - Developer

Do you think that the concept of the App is worth developing? Discuss

The developer thought that it is worth developing. He said that storing sensitive information such as medical information can be He asked was there anything like it out now and when I told him there wasn't he thought that it was worth pursuing.

What is your opinion around storage of sensitive information that may be stored on the App?

This can be an issue in terms of who will have control of the information. He suggested that if the App was just being used by the average user (the public) to store their own personal information that it could be stored locally on their device. He advised using the ISO 27001 standards as a guideline for implementing security. Another option would be using cloud storage in unison with a MySQL to store and retrieve the information.

How long roughly would an App like this take to be developed?

Depending on the number of features that the App has it could take 6-9 months. He recommended focusing on an agreed number of features is the best method to test and implement functionality. Then if time and money allowed, more features can be added.

How much would it cost roughly?

That is hard to answer until all the requirements have been gathered and signed off. If it is taken on by a development team they could be using development interns which may lower

costs. Then there is the issue of if the information is not stored locally, if it is on say for instance the cloud then an administrator would be needed and this would add to costs. He said costs generally depend on time it takes to develop the App as developers usually charge as to per hours worked.

What in your opinion would be requirements to consider for this App?

If the App is to be used between general users and health professionals, then the App should be able to be sync'd between devices. A fingerprint log in may be a useful feature, this may be an added feature but not necessary for the Login function to work. Assigning roles within the App is a good idea in his opinion; this will assign what specific users can perform what function. Regulation will need to be adhered to ensure compliance with security regulations. Also, a requirement could be that once the user has logged in that they remain logged saving the user from constantly having to Login.

Have you experience developing an App like this? If so discuss?

No, not a health-related App but he had worked on other Apps and suggested that it would important when selecting a developer to require that the App is developed using the Agile Methodology. This would assist in overcoming issues early and it would also produce working functionality often. It will allow for continuous interaction between development team and the client. With an Agile Approach change is welcomed and if offer greater flexibility on the development for features and functionality.

The App may contain an emergency Access feature that allows Emergency services to access certain information. Have you any thoughts on this?

The developer thought that is sounds like a useful feature. He recommended that the emergency services should have a unique I.D code that would allow them to log on and access the information.

What difficulties to you foresee in the development of this App?

He thought that there are so many health-related App available now that differentiating the App was paramount. Scope creep may be an issue and managing people's expectations can be difficult. Keep track of costs so they don't spiral.

Have you any advice going forward in the development of this App?

Once the document has been completed to shop around for different developers that have worked on similar Apps. Look for proof of this to be confident that they can develop your App. Focus on ensuring the issue of security is addressed.
Consider what role the administrator will have. There will need to be an administer in some capacity in relations to resetting passwords and updates etc. Also if the health professionals are entering updates of information they will be administrators for their specific specialty. The user could also be a user administrator.

Interview Conclusion

The developer provided useful information in relation to storage of information for the App. It could be stored locally on the user's device or cloud storage could be used with a MySQL database. He said that the App should be able to be sync'd between the general user's and the professional user's devices. The App should adhere to the ISO 27001 standards

guidelines. A requirement of the App should be that once the user has logged into the App that they remain logged in to assist in ease of use. For the development of the App an Agile Approach would be advised. A unique I.D code to all emergency services access to the App would be a recommended feature. A fingerprint login could be a feature of the App. Assigning roles to specific users should be a requirement when developing the App. This will allow users assigned specific roles to perform specific functions.

3.7. Acceptance Criteria

Once the results of the Brainstorming, Surveys and Interviews were recorded, they were presented to the Business Owner to discuss how to proceed. This was done to give direction for the development of wireframes and assist in interface analysis.
From reviewing the feedback from brainstorming, surveys and interviews the Business Owner decided that selected features should be the basis for developing the App. He agreed that the App should be developed using an agile Approach. This way features could be developed, and tested early to prove the concept and move forward form there. Reviewing the results of the survey it was decided to implement the Dentist, Doctor, Physio and Chiropractor feature to begin with.

The Business Owner requires an initial page for when the App is first accessed. This will display tabs that can be selected when touched. They will be a register tab, a login tab and an emergency access tab. This emergency access tab lead to an emergency page that will contain information such as medical conditions, medication and allergies that the user may have. This feature should be able to be accessed by emergency services in the case of an emergency.

The terms of the Registration Page, he said that the page must contain a selection to select if the user is a health professional or general user. It should have fields for the user to fill in their name email address username and password.

The Login Page must contain an option to choose professional or general user. It should have fields where the username and password can be entered and a button to confirm login. Once registered the user will be brought to the home page. For the general user, it should display options to choose which practice they wish to access-Dentist, Doctor, Physio, Chiropractor. It could have a tab that allows access to other features such as forms and documents. It should medication, allergies and medical conditions. These may be grouped together for ease of use. The home screen must have emergency access as users may be login in already when it is accessed by emergency services.

Feedback from the interviews show that it is important that health professional to record information, so for the health professional they would be brought to the page related to their profession e.g. Dentist would be brought to the Dentist page. Once on the page they would be able to create and view records for their client/patient.

Having a health professional locator is a must feature that has been flagged as important. A requirement is that an API (Application Programming Interface) be used for this function.

Discussing the specific pages with the Business Owner he Approved the idea of having a visual representation of teeth, muscles and skeleton that can be selected and when selected

have stored information on the user. This information will include date of record, the issue, the outcome and a comment field. A MoSCoW analysis will now be done to prioritize requirements. The Business Owner has been consulted and the following table represents the requirements and their assigned priority.

Requirement	As a	I want to	So I can	Raised by	Priority
1	user	Register page	Use the App	Brainstorming	Must
2	user	Access the homepage	View features	Brainstorming	Must
3	user	Access Dentist information	View records	Brainstorming	Must
4	user	Access Doctor info	View records	Brainstorming	Must
5	user	Access Physio info	View records	Brainstorming	Must
6	user	Access Chiropractor info	View records		Must
7	user	Access Login Page	Login to the App	Brainstorming	Must
8	user	Track Fitness and Nutrition	Record exercise & diet	Brainstorming	Could
9	user	Locate health professional	Find nearest professional	Brainstorming	Must
10	user	Record travel insurance	Store the document	Brainstorming	Could
11	Business Owner	Finalize App name	Name the App	Brainstorming	Must
12	User (professional)	register	Use App	Physio	Must
13	User (professional)	Access related page	Update clients	Physio	Must
14	user	Have a payment option	Prepay Appointments	Brainstorming	Wont
15	user	Sync	Sync with professional	Brainstorming	Must

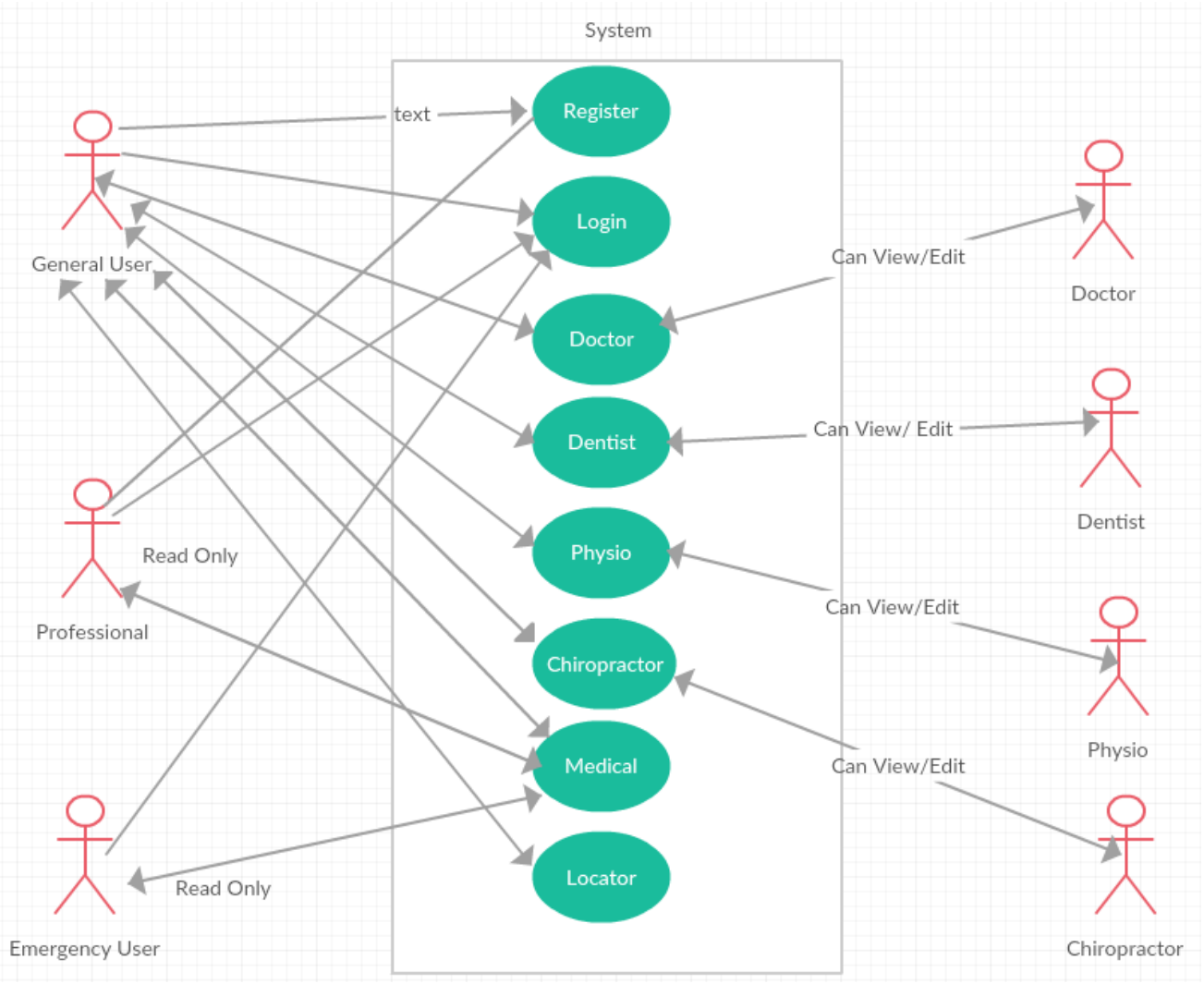
16	user	View tooth display	Record/view data	Dentist	Could
17	user	View Muscle display	Record/view data	Physio	Could
18	user	Access the App on all devices	Use the App	Survey	Should
19	user	Record medical conditions	Store Medical conditions	Survey	Must
20	user	Have emergency access	Allow emergency access	Survey	Must
21	Business Owner	Implement necessary security	Keep information secure	Developer	Must
22	user	Record allergies	Store allergies	Brainstorming	Must
23	user	Have fingerprint recognition	Access the App	Developer	Could
24	user	Store visit history	View previous visits	Brainstorming	Must
25	user	Access current Appointment	Cancel Appointment	Brainstorming	Could
26	user	Record medication	Store medication	Brainstorming	Must
	user	Access Hospital visits	View records	Brainstorming	Could
27	user	Add Physio Exercises	Store/view exercises	Brainstorming	Could
28	user	Stayed logged in	Don’t have to continually login	Developer	Should
29	user	Have a unique I.D code	Do an emergency login	Developer	Must
30	user	Have a username	Login to App	Brainstorming	Must

31	user	Have a password	Login to App	Brainstorming	Must
32	user	Access map	Locate local professional	Brainstorming	Must
33	Developer	Assign specific user roles	Perform certain functions	Developer	Must
34	Business Owner	Provide a Disclaimer	Legal defensive measure	Business Owner	Must

All requirements that have been specified as must have will be presented to the development team to be completed in the Sprints. Once these requirements have been developed and tested then they will be presented to the Business Owner in the Sprint review. The Business Owner can decide if the App shall be released with these functions or wait until the next group of features are developed in the next Sprint. This Agile method allow the Business Owner and the development team to work together ensuring all required criteria is met.

3.8. Interface Analysis

3.8.1. Use Case Diagram

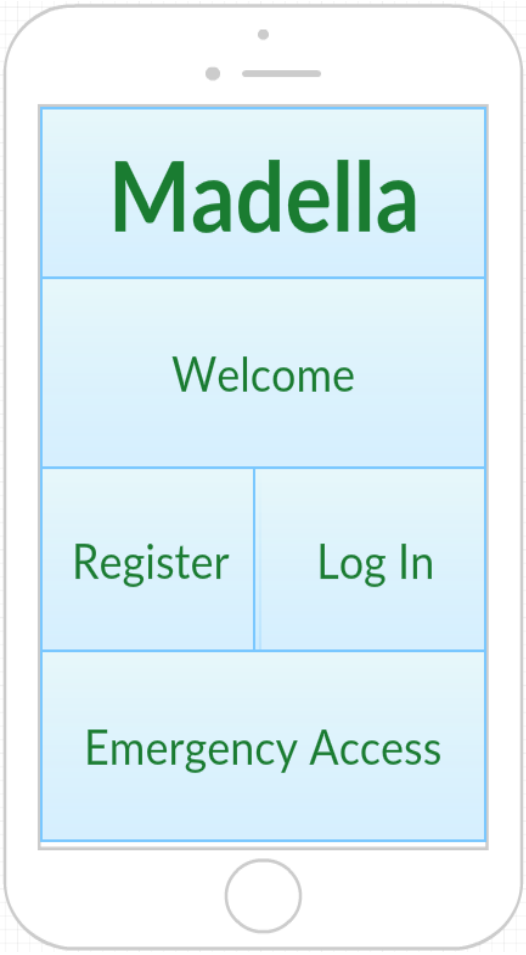


The Use Case Diagram show the interaction with the system. There is the main flow where the user completes every stage through the process – Register, Login etc.

Then there is the alternative flow where short cuts may be performed e.g. once logged in the user remains logged in and does not have to login every time they use the App.

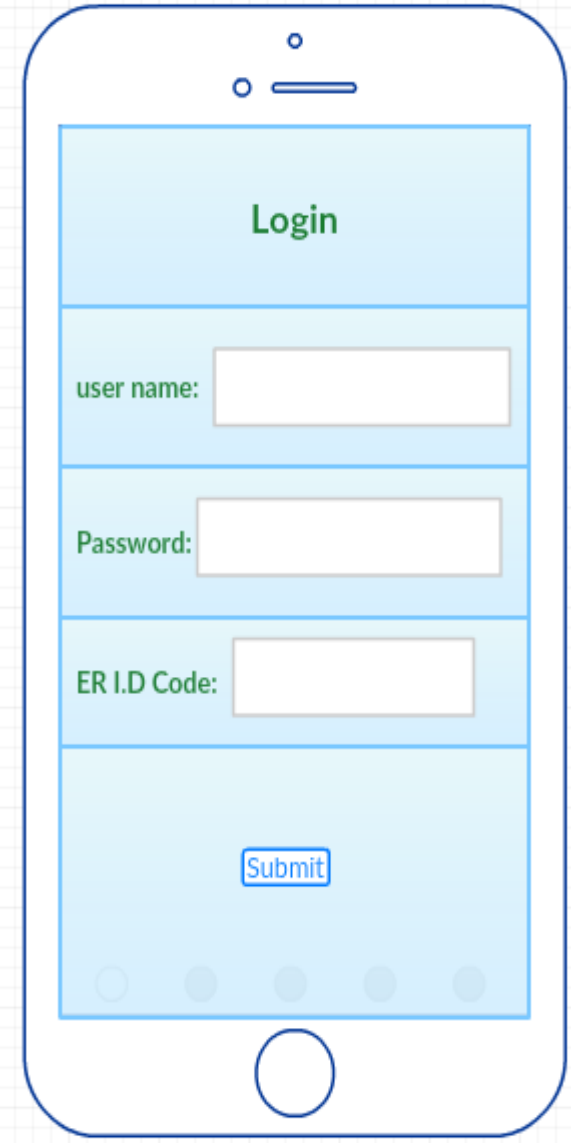
3.8.2. Wireframes

Start Up Screen

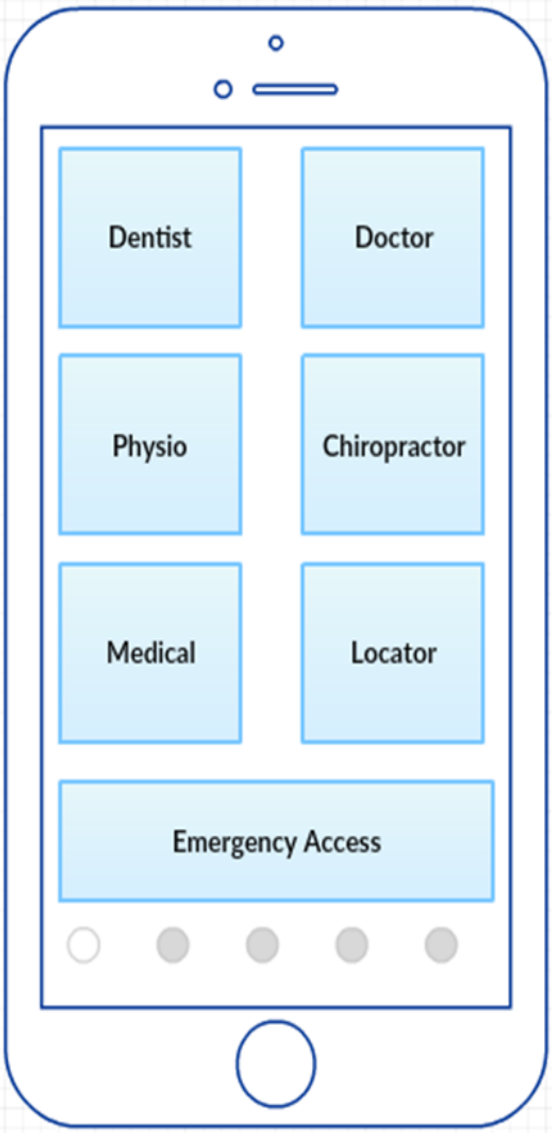


Registration Page

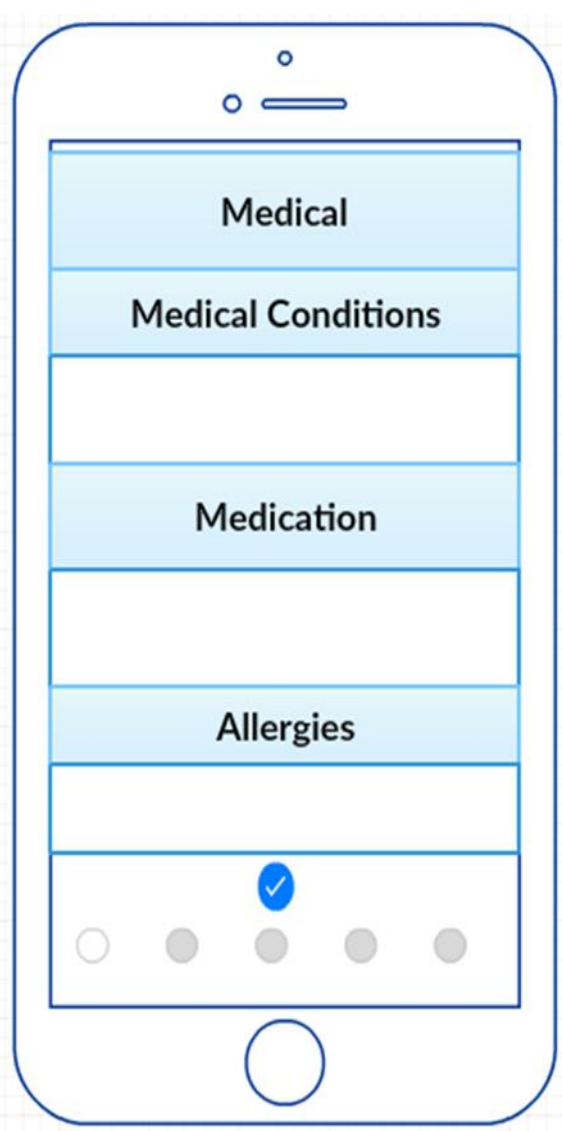
Login Page



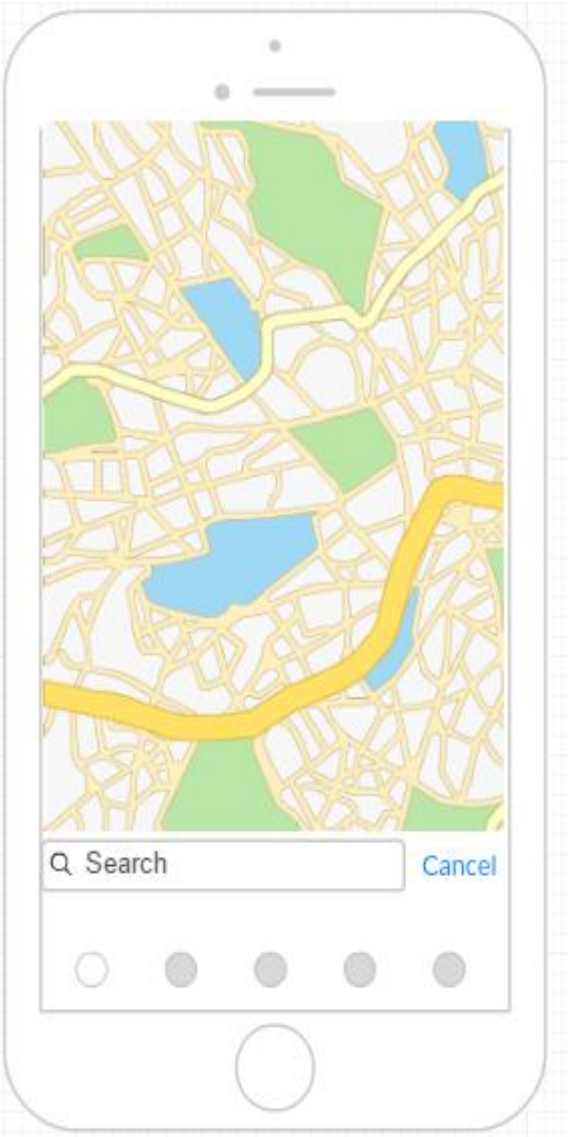
Home Page



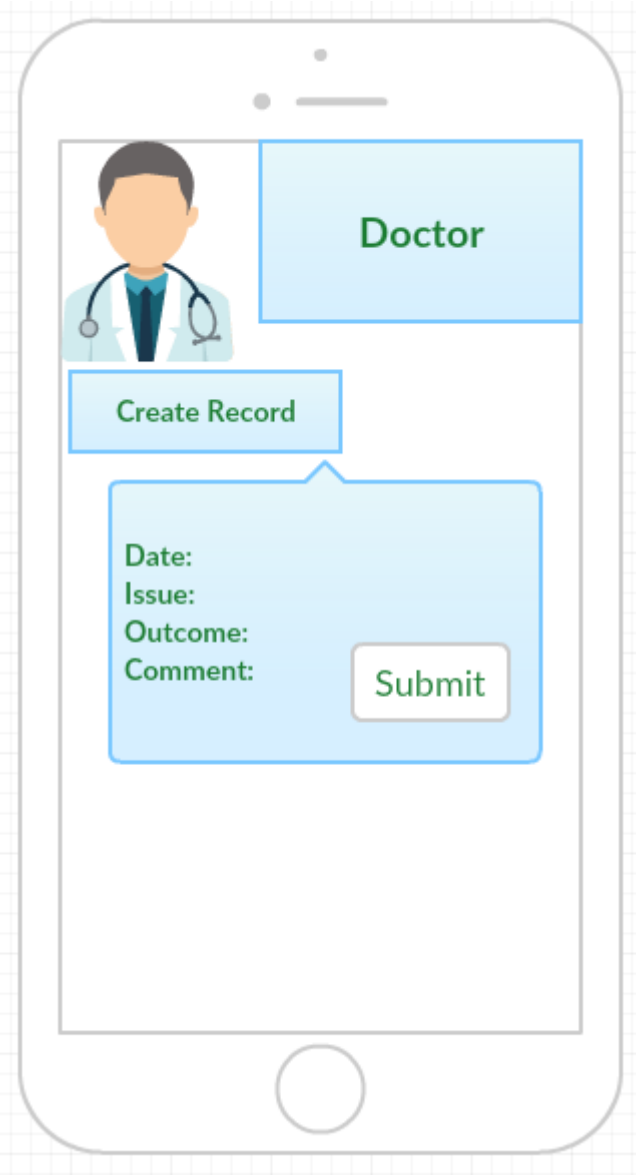
Medical Feature



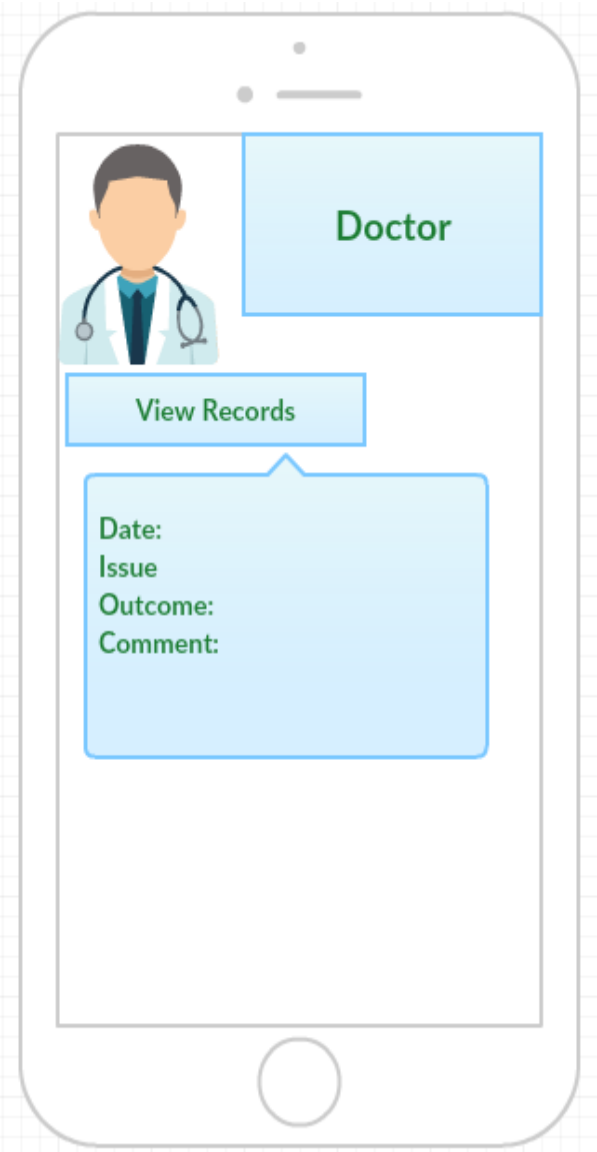
Health Professional Locator Map



Doctor Feature (Professional)



Doctor Feature (User)



4. IEEE APP REQUIREMENTS SPECIFICATION

4.1. Purpose

The purpose of this IEEE requirements specification document is to capture requirements for the Medella App as per the scope defined in section 5.3 below. In this requirement specification, the author will adopt an agile methodology to documentation, which will consist of multiple epics, user stories and acceptance criteria to define requirements instead of the traditional functional and non-functional requirements.

This document must be Approved by the Business Owner (client) before it is passed to the developer(s) and Tester(s). If any changes are necessary or requested by stakeholders, they must be Approved and this document updated prior to the development of the Medella App commencing.

4.2. Approach

For the development of The Medella App an Agile Approach is being used. This requirements specification document will be used by the development team during sprints. The features will be prioritized in the product backlog in the form of User Stories. These will contain short descriptions of functionality for the App. The User Stories will be prioritized by the Product Owner. The Agile team will consist of the Product Owner, The Scrum Master and the Scrum Team. They will present requirements that are done to the Business Owner at the end of a Sprint in the Sprint Review Meeting.

4.3. Scope

The following are in scope for the requirements specification:

- Register
- Login
- Doctor
- Dentist
- Physio
- Chiropractor
- Medical
- Locator

Anything not in this list is considered out of the scope at this time.

4.4. Definitions, Acronyms & Abbreviations

Epic: A group of user stories. The Epic will contain user stories and acceptance criteria that will explain the user's requirements and interaction with the App.

User story: a description of a software feature from an end user perspective.

Acceptance Criteria: are conditions the App must satisfy for a user story to be considered done.

Done: When all elaborated Acceptance Criteria is done.

User: General user of the App. The user can register, login and access features on the App.

Professional user: Health Professional. The Professional User can register, login, view and create records on the App.

Emergency User: Member of any Emergency Service-Ambulance, Hospital, Fire Brigade and Police.

4.5. Epic 1 – Registration

4.5.1. User Story: User

As a user
I want to be able to register my details on the registration page
So that I can access the features on the App.

Acceptance Criteria1:
Given that the user inputs valid information in the required fields*
When the user confirms registration
Then the user has created an account on the App.

***Required Fields:**
General
Name
Email address
Username
Password
Confirm password
Confirm registration
All fields must be completed.

Acceptance Criteria2:
Given that the user does not input all information in the required fields*
When the user confirms registration
Then the user is alerted with an error alert that all fields must be completed. If this is not done, then the registration has failed. An alert will Appear telling the User the Login has failed.

Acceptance Criteria3:
Given that the user does not input valid information in the required fields*
When the user confirms registration
Then the user is displayed with an error alert that all fields must be completed with valid information. If this is not done, then the registration has failed. An alert will Appear telling the User the Login has failed.

4.5.2. Professional User

As a Professional User
I want to register my details on the registration page
So that I can create records for the user on the App.

Acceptance Criteria 1:
Given that the professional user inputs valid information in the required fields*
When the professional user confirms registration
Then the professional user has created an account on the App.

***Required Fields:**
Name
Email address
Profession
Licence No.
Username
Password
Confirm password
Confirm registration

Acceptance Criteria 2:
Given that the professional user does not input all information in the required fields*
When the user confirms registration
Then the professional user is alerted with an error alert that all fields must be completed. If this is not done, then the registration has failed. An alert will appear telling the professional user the Login has failed.

Acceptance Criteria 3:
Given that the professional user does not input valid information in the required fields*
When the professional user confirms registration
Then the professional user is displayed with an error alert that all fields must be completed with valid information. If this is not done, then the registration has failed. An alert will appear telling the professional user the Login has failed.

4.5.3. User Story: Emergency Services

As a member of the Emergency Services
I want a unique I.D code
So that I can login to the App.

Acceptance Criteria1
Given that the App is developed
when launched it will generate a unique I.D code and issue to emergency services
Then the emergency services user can login to the App.

4.6. Epic 2 – Login

4.6.1. User Story: User

As a user
I want to login to the App
So that I can access the features of the App.

Acceptance Criteria1
Given the user has previously registered
When the user enters valid username and password on the Login tab and hits submit

Then the user is logged in and has read access to the App features.

Acceptance Criteria2

Given the user has previously registered
When the user enters invalid username and password on the Login tab and hits submit
Then the user is displayed a login error on screen, not logged in and has no access to the App features.

Acceptance Criteria3

Given the user has previously registered
When the user enters invalid username and password on the Login tab and hits submit 3 times
Then the user is displayed a login error on screen, not logged in and has to reset login details.

4.6.2. Professional User

As a professional user
I want to login to the App
So that I can access create records for the user on the App.

Acceptance Criteria1

Given the professional user has previously registered
When the professional user enters valid username and password on the Login tab and hits submit
Then the professional user is logged in and has administrator access to create records for the user on the App.
.

Acceptance Criteria2

Given the professional user has previously registered
When the professional user enters invalid username and password on the Login tab and hits submit
Then the professional user is displayed a login error on screen, not logged in and has no access to the App features.

Acceptance Criteria3

Given the professional user has previously registered
When the professional user enters invalid username and password on the Login tab and hits submit 3 times
Then the professional user is displayed a login error on screen, not logged in and has to reset login details.

4.6.3. User Story: Emergency Services

As an Emergency User
I want to login to the App
So I can view the emergency related details of the user.

Acceptance Criteria1
Given the Emergency User has previously registered
When the Emergency User enters valid I.D code on the Login tab and hits submit
Then the Emergency User is logged in and can view the emergency details of the user.
.
Acceptance Criteria2
Given the Emergency User has previously registered
When the professional user enters invalid I.D code on the Login tab and hits submit
Then the Emergency User is displayed a login error on screen, not logged in and has no access to the emergency feature.

Acceptance Criteria3
Given the Emergency User has previously registered
When the Emergency User enters invalid username and password on the Login tab and hits submit 3 times
Then the Emergency User is displayed a login error on screen, not logged in and must reset login details.

4.7. Epic 3 - Doctor Feature

4.7.1. User Story: User

User Story: User
As a User
I want to access the Doctor feature
So that I can view my Doctor records.

Acceptance Criteria1
Given that the user is logged in
when the user selects the Doctor feature
then the user can view their records.

Acceptance Criteria2
Given that the user is logged in
when the user selects the Doctor feature and there are no stored records
then the user is displayed a message outing that there are no Doctor records to view.

4.7.2. Professional User

As a Professional User
I want to access the Doctor feature
So that I can create a record for the user.

Acceptance Criteria1
Given that the Professional Doctor is accessing the App
When the Professional Doctor has logged in
Then the Professional Doctor User can record and save a medical record for the user.

The following fields are available for the Professional Doctor to populate:

Date
Issue
Outcome
Comment

All fields must be completed.

Acceptance Criteria 2
If all fields are not completed an error alert will Appear prompting the Professional User to complete the required fields. If all fields are not completed the record will not be saved. An alert will appear telling the Professional User the record has not been saved.

4.7.3. User Story: Emergency Services

As an Emergency Services User
I want to access the Doctor feature
So that I can view a record for the user.

Acceptance Criteria1
Given that the Emergency Services is accessing the App
When the Emergency Services has logged in
Then the Emergency Services User cannot access Doctor feature and read users medical records.

4.8. Epic 4- Dentist Feature

4.8.1. User Story: User

User Story: User
As a User
I want to access the Dentist feature
So that I can view my Dental records.

Acceptance Criteria1
Given that the user is logged in
when the user selects the Dental feature
then the user can view their records.

Acceptance Criteria2
Given that the user is logged in
when the user selects the Dental feature and there are no stored records
then the user is displayed a message outing that there are no Dental records to view.

4.8.2. Professional User

As a Professional Dentist User
I want to access the Dentist feature
So that I can create a record for the user.

Acceptance Criteria1
Given that the Professional Dentist is accessing the App
When the Professional Dentist has logged in
Then the Professional Dentist User can record and save a medical record for the user.

The following fields are available for the Professional Dentist to populate:
Date
Issue
Outcome
Comment

All fields must be completed.

Acceptance Criteria 2
If all fields are not completed an error alert will Appear prompting the Professional User to complete the required fields. If all fields are not completed the record will not be saved. An alert will Appear telling the Professional User the record has not been saved.

4.8.3. User Story: Emergency Services

As an Emergency Services User
I want to access the Dentist feature
So that I can view a record for the user.

Acceptance Criteria1
Given that the Emergency Services is accessing the App
When the Emergency Services has logged in
Then the Emergency Services User cannot access Dentist feature and read users medical records.

4.9. Epic 5 - Physio Feature

4.9.1. User Story: User

User Story: User
As a User
I want to access the Physio feature
So I can view my Physio records.

Acceptance Criteria1
Given that the user is logged in
when the user selects the Physio feature
then the user can view their records.

Acceptance Criteria2
Given that the user is logged in
when the user selects the Physio feature and there are no stored records
then the user is displayed a message outing that there are no physio records to view.

4.9.2. Professional User

As a Professional User
I want to access the Physio feature
So that I can create a record for the user.

Acceptance Criteria1
Given that the Professional Physio is accessing the App
When the Professional Physio has logged in
Then the Professional Physio User can record and save a medical record for the user.

The following fields are available for the Professional Physio to populate:
Date
Issue
Outcome
Comment

All fields must be completed.

Acceptance Criteria 2
If all fields are not completed an error alert will Appear prompting the Professional User to complete the required fields. If all fields are not completed the record will not be saved. An alert will Appear telling the Professional User the record has not been saved.

4.9.3. User Story: Emergency Services

As an Emergency Services User
I want to access the Physio feature
So that I can view a record for the user.

Acceptance Criteria1
Given that the Emergency Services is accessing the App
When the Emergency Services has logged in
Then the Emergency Services User cannot access Physio feature and read users medical records

4.10. Epic 6 - Chiropractor Feature

4.10.1. User Story: User

User Story: User
As a User
I want to access the Chiropractor feature
So I can view my records.

Acceptance Criteria1
Given that the user is logged in
when the user selects the Chiropractor feature
then the user can view their records.

Acceptance Criteria2
Given that the user is logged in
when the user selects the Chiropractor feature and there are no stored records
then the user is displayed a message outing that there are no Chiropractor records to view.

4.10.2. Professional User

As a Professional User
I want to access the Chiropractor feature
So that I can create a record for the user.

Acceptance Criteria1
Given that the Professional Chiropractor is accessing the App
When the Professional Chiropractor has logged in
Then the Professional Chiropractor User can record and save a medical record for the user.

The following fields are available for the Professional Chiropractor to populate:
Date
Issue
Outcome
Comment

All fields must be completed.

Acceptance Criteria 2
If all fields are not completed an error alert will appear prompting the Professional User to complete the required fields. If all fields are not completed the record will not be saved. An alert will appear telling the Professional User the record has not been saved.

4.10.3. User Story: Emergency Services

As an Emergency Services User
I want to access the Chiropractor feature
So that I can view a record for the user.

Acceptance Criteria1
Given that the Emergency Services is accessing the App
When the Emergency Services has logged in
Then the Emergency Services User cannot access Chiropractor feature and read users medical records.

4.11. Epic 7 – Medical Page

4.11.1. User Story: User

User Story: User
As a User
I want to access the Medical feature
So I can record by Medical Details.

Acceptance Criteria 1

Given that the user has entered information in the required fields
When they select the button to confirm which is represented by a tick
Then the record is saved.

Required Fields
Medical Conditions
Medications
Allergies

Acceptance Criteria 2
If the tick button is not selected, then the record is not stored.

4.11.2. Professional User

As a Professional user
I want to access the Medical feature
So that I can view the user's Medical details.

Acceptance Criteria

Given that the professional user is logged in
When they select the Medical tab
Then the professional user can view the user's medical details.

4.11.3. User Story: Emergency Services

As an Emergency services user
I want to access the Medical feature
So that I can view the user's Medical details.

Acceptance Criteria

Given that the Emergency services user is logged in
When they select the Medical tab
Then the Emergency services user can view the user's medical details.

4.12. Epic 9 – Locator

4.12.1. User Story: User

User story: User
As a User
I want to use the locator feature
So I can locate health professionals.

Acceptance Criteria 1
Given the user enters their location in the search bar
When presses the search icon
Then the local health professional's location is shown.

Acceptance Criteria 2
If the user does not press the search icon, then the Map will not show the local health professionals.

That concludes the specified requirements to be

The following Epic's specify the constraints (non-function requirements) that cut across the previous Epic's (functional requirements) that must be obeyed during the implementation by the developers during implementation or at a run time by the software.

4.13. Epic 10 – Security

4.13.1. User Story: User

As a user
I want to enter my username and password encrypted
So I prevent account being hacked.

Acceptance Criteria
Given that the user enters the submits a valid username and password when they select the submit button then the username and password are encrypted and stored.

4.13.2. User Story: Professional User

As a professional user
I want to enter my username and password encrypted
So I prevent account being hacked.

Acceptance Criteria
Given that the professional user enters the submits a valid username and password when they select the submit button then the username and password are encrypted and stored.

4.13.3. User Story: Constraints

Constraints:
The password must be 8 characters or more. It must contain a capital letter 1 number and 1 special character.
If the fields are not completed with the correct details, then the login has failed. If the user inputs the incorrect details more than 3 times, then the account is locked for 30 minutes.
.

4.14. Epic 11 – Storage

4.14.1. User Story: User

As a user
I want to store my information and records
So I can access and view the information at all times.

Acceptance Criteria

Must have minimum of 1 Terabyte capacity.
The information that will be stored on the App-registration details, login details, information records on the user will be stored using a MySQL database for accessing the information and on the cloud using Zoolz or JustCloud.

4.14.2. Professional User

As a professional user
I want to store information
So I can use the information to access and interact with the App.

Acceptance Criteria
Must have minimum of 1 Terabyte capacity.
The information that will be stored on the App-registration details, login details, for the professional user will be stored using a MySQL database for accessing the information and on the cloud using Zoolz or JustCloud.

Acceptance Criteria
Must have minimum of 1 Terabyte capacity.
The information that will be stored on the App-registration details, login details, for the emergency services user will be stored using a MySQL database for accessing the information and on the cloud using Zoolz or JustCloud.

EPIC 12 – PERFORMANCE

As a user, professional and user

I want to register, log onto the

So that I can interact and use the features on the App

Acceptance Criteria

Given that the professional user and emergency user are logged into the App

When they interact with the features

Then the response time for commands on the App must be no longer than 4 seconds.

EPIC 13 - AVAILABILITY

Refers to how reliable the App will be. Testing and procedure will be incorporate to ensure that the App will meet the reliability acceptance criteria. This will be that the App will be available 24/7 365 days of the year. Buffers may be put in place to ensure that the App's functionality does not suffer in the case of information overload.

EPIC 14 - REGULATORY

This requirement specifies the regulatory requirements that the App must adhere to. The App should meet the ISO 27001 regulation standards.

5. BIBLIOGRAPHY

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6. APPENDICES

Project Proposal

Objectives

For my final year project the overall objective is to create detailed document that includes requirements specification, technologies that will be used and how they will be used. This will be for a web based application that allows users to record, store and retrieve personal health information.

One specific objective will be to identify the main stakeholders involved. These stakeholders will vary from the project sponsor, end users, a developer, I.T specialists and professionals in the Health and Medical sector such as Dentists, Physiotherapists, Doctors and Chiropractors etc.

Once I have identified the main stakeholders I will elicit requirements using requirement elicitation techniques such as Brainstorming, surveys, focus groups and interviews.

It is an objective to provide the stakeholders with what benefits this Application would have. I will show that I have identified a legitimate need for my Application and how it can be applied to everyday living.

I must outline the I.T infrastructure necessary to support the Application.

I must identify the businesses requirements and the function and non-functional requirements for the Application.

Having gathered the all requirements, I will analyse the information using data analysis tools. Then I will verify with the stakeholders that the requirements have been met.

An objective is to ensure that security and legal requirements are met to the acceptable standard.

An important objective during the project will be time management. Other factors such as projects and study for other modules will need to be taking into account. Setting personal deadlines for specific tasks within the project will aid with this. Ensuring these deadlines are met will be an ongoing task. There are also external deadlines that have been allocated to me. I will meet with a supervisor regularly and it is an objective to finish each meeting with a clear understanding of tasks to be carried out.

The objective of the Application is to allow the user to enter information after they have had an appointment with a health or medical professional. The Application will store the

information. The user will have a unique password that will allow them to access the information in the Application. This will give them immediate access to all their healthy history.

Background

For my final year project, I was tasked with creating an I.T based Application. It was encouraged do be creative. I thought I would focus on an area that interested me and that is what I have done.

I have previously worked in the Health and Fitness Industry for seven years. I have experience working with many different health and fitness Applications. Many of these Apps offer similar functions and benefits.

The thought for the Application originates from a personal experience. My mother suffers with constant back issues and attends a Chiropractor regularly. While on a visit to London she hurt herself, and need to visit a Chiropractor in London. She had to tell of her regular visits back home and explain her issues. My brother and I thought that if there was an Application that allowed her to record and store all her visit history, that she could then immediately produce it and the Chiropractor would be fully aware of the condition and not have to rely on her to explain. We then thought that this could be multifaceted and work across was range of practices. My brother is the client for the project.

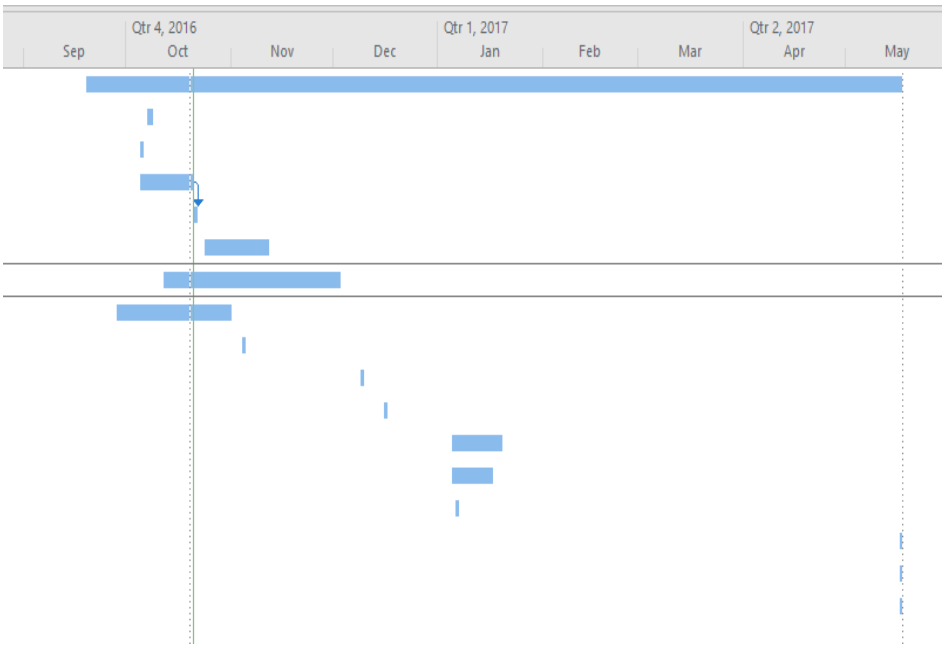
After doing extensive online research I discovered that there was nothing on the market that provided the features that I want from the Application. I have friends that are Physiotherapists and Sports Therapists and I consulted with them. They were extremely receptive to the idea and thought that there was a need for it in today's society that more than ever focuses on health and fitness.

I feel that every individual should be the primary supervisor of their own health. Having access to all health-related information will give people better control over general health. Also if people have such records they could be more inclined to have regular check-ups.

Project Plan

Below is a Gantt chart for the timeline of the Project Plan. This relates to the deadlines set out by the project coordinator from the college. Following that is a Work Breakdown Structure of the tasks to be completed in the Gantt chart. A further WBS will be designed when I begin gathering requirements.

Gantt chart



Work Breakdown Structure

Task Mode	Task Name	Duration	Start	Finish
	Duration of Project	173 days	Mon 19/09/16	Wed 17/05/17
	Reflective Journal	1 day	Fri 07/10/16	Sat 08/10/16
	Project Pitch	1 day	Wed 05/10/16	Wed 05/10/16
	Project Proposal	12 days	Wed 05/10/16	Thu 20/10/16
	Review Project Proposal	1 day	Fri 21/10/16	Fri 21/10/16
	Prelimary Requirement Elicitation	15 days	Mon 24/10/16	Fri 11/11/16
	Prelimary Requirement Analysis	38 days	Wed 12/10/16	Fri 02/12/16
	CA for Strategic Management	24 days	Wed 28/09/16	Mon 31/10/16
	Reflective Journal	1 day	Fri 04/11/16	Fri 04/11/16
	Reflective Journal	1 day	Fri 09/12/16	Fri 09/12/16
	Midpoint Presentations	1 day	Fri 16/12/16	Fri 16/12/16
	Simester 1 Exams	11 days	Thu 05/01/17	Thu 19/01/17
	Showcase Materials	8 days	Thu 05/01/17	Mon 16/01/17
	Reflective Journal	1 day	Fri 06/01/17	Fri 06/01/17
	Final Project Documentation	1 day	Wed 17/05/17	Wed 17/05/17
	Software & documentation upload	1 day	Wed 17/05/17	Wed 17/05/17
	Project Presenation	1 day	Wed 17/05/17	Wed 17/05/17

As part of the Project Plan will be Requirements Management Methodology. This will involve the following phases:

- **Plan**
- **Analysis**
- **Define**
- **Confirm**
- **Support Delivery**
- **Evaluate**
- **Manage**

Evaluation

To evaluate the project, I will produce a requirement specification document. This will in include the requirement elicitation techniques I will use such as brainstorming, surveys, interviews focus groups and a requirements workshop. Once all requirements have been documented I will conduct analysis on the requirements.

By implementing and analysing these techniques it will provide me with a detailed requirements document. The majority of the functions of the Application will be gathered after the midpoint presentation. To ensure that all the requirements have been documented I will meet with my client to ensure that no requirements have been overlooked. The client will sign off on the requirements document once they are satisfied that is complete. I will meet with my project supervisor upon completing to ensure that he is satisfied with the document and discuss any improvements that could be made.

Problem Statement:

No Application on the market that allows users to record, store and retrieve personal health information.

There is risk involved with the undertaking of the project. As requirements are gathered there is a risk that the list could continually grow and risk of scope creep. To combat this I must be able to manage stakeholder's expectations.

The scope for the Application is difficult to measure. Since that is the case I intend to develop the Application with the intension on adding features to it as it matures.

Choosing a developer is also a risk with the project. To ensure I employ the correct developer I will use interviews and other resources at my disposal. It is crucial that they are competent and will follow my direction.

Communication is paramount in this project. Clear on constant communications with all stakeholders is required. Setting targets and deadlines will aid in controlling the project and ensure progress.

Reflective Journals

Reflective Journal for September

Student name: Aidan Doyle

Programme: BSc in Technology Management

Month: September

My Achievements

This month was the beginning of my final year project. I had to decide on what I was going to do for the project. I decided that I was going to do it on a web-based Application for storing health information. The idea is that the user can capture, store and retrieve information on an Application. The target market is any health-conscious person who wants to keep track of the health information be it doctor, dentist, physiotherapist etc.

I think the idea is worthwhile pursuing as I feel that people should have instant access to their own health history. I did some research to see if there was something already out there and could only find fitness Applications or Applications that dealt with specific conditions to keep track of the condition.

The reason I chose it is that there is nothing on the market now that allows the general public keep track of all their appointments and outcomes of appointments. I asked people I know did they think it was a useful idea and received positive feedback. I also asked two physio's I know and they agreed.

I pitched the idea to a panel on Wednesday 5th of October and received three approvals. I was told that now I need to focus on the methods I will use to gather the requirements. That is now what I am concentrating on. Brainstorming, focus groups, interviews and surveys and more is what I intend to use to gather the requirements. This is just the beginning of planning I have done since the pitch.

My Reflection

Looking back on my pitch I felt I could have been more prepared on how I was going to gather my requirements. I was happy with how the pitch went overall and I was happy with the positive feedback.

Supervisor

I am waiting to be assigned a supervisor to discuss progress on the project and what tasks to complete next.

Reflective Journal for October

At the beginning of the month I was required to submit my Project Proposal. In doing this I identified the main objectives of my project. I have identified the main stakeholders that are

involved. In the proposal, I did a rough Gantt chart that shows a timeline of tasks must be completed and the date they should be completed by. With the Gantt chart I did a Work Brake-down Structure which is essentially a list of the tasks. It was difficult to do a comprehensive Gantt Chart and Work Brake-down Structure as I do not fully know all the tasks that I will need to do to complete the project.

During the month, I was assigned my project Supervisor-Eugene O' Loughlin. I have arranged to meet with him on Monday. I will tell him what I am planning to do going forward. For the 11th Of November, I must submit the Preliminary Requirements Specification. This includes:

- Business Need
- Business Case
- Stakeholders List
- Requirements Elicitation Techniques
- Interface Analysis
- Acceptance and Evaluation Criteria
- Document Analysis

Going forward in November I will now begin gathering requirements with elicitation techniques such as brainstorming, focus groups, survey's and interviews. I must design the surveys. I must identify the amount of surveys I will conduct. I must decide on the questions I will ask in the surveys, focus groups and interviews. I plan on having focus group of several different sample groups such as the public, then more specific groups such as sports athletes amongst others. I am stratified that the project is progressing as planned so far. I have not had any major issues so far. It was difficult to do the Project Proposal but that was because I was getting started. I will revisit the proposal as the project progresses.

Reflective Journal for November

During the last month I have developed my plan for requirements elicitation. I have been in contact with various stakeholders involved with the project. I have set a date and time for conducting an interview with the client for the project. The date has been agreed as the 15/12/2016 at 5pm.

I have been in contact with an I.T specialist to arrange an interview. He has agreed to take part in an interview. We have set the date and time for the 22/12/2016 at 5.30pm.

I have agreed to interview a Physiotherapist on 02/01/2017. I am waiting confirmation on a date with a Dentist that has agreed to participate in an interview.

I have set a date for a brainstorming session of the 14/12/2016 at 4pm. There will be six participates in the brain storming session and all are confirmed to attend.

I am in the process of drafting a survey that will be rolled out from January. It will consist of roughly 20 questions and will be distributed to potential end users.

I am arranging a meeting with my supervisor to ask him to review my survey and if he has any recommendations for the survey I will address them and product a follow up draft. We will also discuss the midpoint presentation and what is expected from me.

Reflective Journal December

December was a busy month. There were 4 assignments due for other modules so the project the project was not at the forefront of my workload. I had planned for this in my Work Breakdown Structure. The planning for my elicitation techniques was finished and I prepared for my midpoint presentation.

For my midpoint presentation, I did a PowerPoint presentation outlining the business case, business need, approach and the plan I had worked on up to the point of the presentation. I did get to complete my first interview on the 23rd just before Christmas. I used a voice recorder to record the interview so it could be transcribed at a later date.

I had a meeting with my supervisor who gave me guideline to follow for the presentation.

I was happy with how the presentation went. The questions asked by the panel I think I answered to their satisfaction.

Going forward I need to focus on my exams over the Christmas period and pick up on the project again after my exams.

Reflective Journal January

Similar to December, January was a month where my attention was on my exams. I had 5 modules, each with an exam. This had all my attention until the 15th of January. After my exams focus turned back to the project.

I met with my supervisor and we reflected on my midpoint presentation. The feedback was positive. I was happy with the results and feedback. It gave me encouragement going forward.

My supervisor and I discussed my survey and he suggested drafting one up so he could review it so this was done.

With focus, back on the project my attention turned to putting my elicitation plan into action. I had arranged an interview that got cancelled at the last minute. But I ensured it got re-scheduled. The second interview was done in January on the 21st. Like the previous

interview, I recorded it so I could transcribe it. This was done to save time for both the interviewee and myself and to ensure no information was lost.

Reflective Journal February

In February, I had drafted survey. My supervisor reviewed it. Overall, he was happy with the questions and scales for response that I had used. I made the suggested changes and began distributing it.

I also completed my third interview in February, this was done in the same format as before. All three interviews had questions that had been carefully prepared before the interviews.

I began transcribing the previous interviews and recording the responses, taking note of any requirements that were discussed.

Reflective Journal March

March was a productive month. I had begun to draft up a list of requirements from the elicitation techniques that had been used. The survey was receiving a strong response so I was happy with that. I also visited a local community center with print out copies of my survey to be completed by member of a senior citizen Yoga class. Recording the list of requirements showed that there was similar suggestions and requirements appearing from different techniques. All requirements that were recorded were presented to the Business Owner that is the client.

I dropped by my supervisor to let him know briefly how I was getting on. I am satisfied at what stage I am with the project and my plan going forward. My project had adapted an Agile approach while the rest of my class were doing Waterfall, this made it slightly strange when they would be discussing their projects but I was confident in my approach and would continue with it.