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Food Ordering Technical Report

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Executive Summary

I choose to do this project under Food Ordering topic, and I will explain the process of creating a web application which must be designed and implemented in a way which will give a plus to the food business owners. A market research was conducted on this topic to target different possibilities in coming on the future market with a new product which will solve marketing issues, would improve the relation between the restaurant and the client and also building the restaurant brand.

This web application would let the customer to buy his favorite food products from his local store or order his favorite food from a restaurant by accessing the web app and finding an attracting user interface with an easy and fast access to get your food order ready and delivered to your address. The main difference between this ordering web application and others like Just Eat, Order YOYO and Deliveroo is that I will build the shop brand and I will deliver a web app for them which will require to be updated only when I will deploy new features, or they would like sophisticated changes to the current menu. Everything is designed in a way that allows the shop to have his own logo displayed, full menu customizable and will drive clients towards own business and not on other platforms.

By doing this they would take full advantage of promoting their own business and not advertising and driving customers to other platforms.

1.0Introduction 1.1.Background

The Irish food and drink sector have put an impressive export performance in the recent years. Very much of this growth was due by strong export in diary, beverages prepared food and online ordering. This performance is very impressive if you look at it even against COVID-19 times, the food industry has never taken a break and even though it affected many restaurants, everyone turned out opting for online delivery including pubs or other small business. They all faced this problem and had to focus on selling their products online.

Worldwide online food delivery became increasingly well accepted and more evident. The food industry has a revenue increasing year by year and every platform tends to provide consumers with the options of having meals at a cheaper price or by adding other services such as delivery.

New research has found that at presence the company Deliveroo for example generates over 48 million last year of revenue across the economy in Ireland, with 36 million of that going to the restaurant sector which leaves a difference of 12 million going into actual delivery service according to RTE.

Also, the food company Just Eat served up profits of 4.7 million on turnover of 20.5 million in 2017. In 2018 they served up profits of 9,2 million a 95 per cent jump on the previous year and for the last year with a profit of 17,5 million. All these facts contributed to my idea of developing a new product which will focus on the restaurant and it will improve it sales in a short time.

1.2.Aims

Aim 1: My main goal is to prioritize the restaurant business by giving them the opportunity to come out from Just Eat, Order YOYO or Deliveroo platforms where they are advertising someone else's business. They are bringing profit to other platforms and driving own customers to have a large opportunity of different choices which could be assimilated with their own products, but other restaurants might be in a closer area of delivery.

Aim 2: Owner portal to be fully functional and designed in a way that it will give great control experience over own restaurant which will make the owner feel that he can optimise anything which was designed on the website without having any knowledge about coding or the necessity of a 3rd party to help him in updating the website.

Aim 3: I will assure the restaurant that the website will be listed on the first page in Google search. A great SEO will be implemented for the website so that it will rank high in the search optimisation which will drive more customers and increase the profit for the restaurant.

Aim 4: Different payment methods which will allow most of the countries to order from the restaurant with the possibility of restricting cards of individual countries where a scam alert has been flagged.

1.3.Technology

PHP-For this project, I will be using php programming language to run all the connections with the database and for every request to the database which will be connected through php and mysql.

Mysql- It is a free and open-source documented database and uses query requests which will serve the purpose of communicating with the database using different methods.

HTML-I will be using html for the coding part of the website where I will create all the functionality of the user experience and the admin portal.

CSS -will be used to make the website user friendly and attract customers which will result in more orders to the restaurant.

Javascript- for attaching different variables to the content, to be able to manipulate it depending on different scenarios.

NodeJS- open-source JavaScript for executing code server side. Express is flexible and provides a powerful set of features for web apps which will help me in building online stylesheets which could assure a fast integration between me and different customers who might choose other layouts for the website.

JSON(JavaScript Object Notation)- JSON is easy for humas to read and write and the purpose of it will be to send data through the API.

Namecheap- for online hosting of the website and the domain. I am choosing Namecheap because of the plans they offer and fast support which I find it good compared to other providers which can take few days for an answer.

1.4.Structure

The structure of this web application is represented in three categories such as:

Requirements- This section is showing in detail the two requirements functional and non-functional of the systems including the use case diagram too.

Design and Architecture: This section contains information about the flow of the system and different diagrams of the system architecture.

GUI: Represents screenshots of how the Fresh Food was built.

2.0System 2.1.Requirements

In here I different requirements are needed such us data, user, and admin(owner) requirements. This data has title, description and a use case diagram representing the different possible actions that a user or admin can take at different stages while browsing the web app.

2.1.1. Functional Requirements

The functional requirements of the system that will be required to complete the project are:

1. The system gather data and save it in the database.

- 2. The system looks at the data and authorise the data submitted.
- 3. The user can login with the data provided.
- 4. The user can make an actual order being logged in.
- 5. The user can view his own order.
- 6. The user can use different payment methods.
- 7. The owner can customise the website.
- 8. The owner can analyse the data orders.
- 9. The owner can reject orders.



2.1.1.1. Use Case Diagram

2.1.1.2. Requirement 1 : Obtain Data

Description & Priority

This type of requirement represents the first step where data is required to populate the database. It is one of the most important steps from the structure.

Use Case

Scope

Identify correct data and store it in the database.

Description

Add information regarding the customer registration. Store this information in the database.

Use Case Diagram



Flow Description

Precondition

There is no data stored in the database.

Activation

This will start when the User will register his new account.

Main flow

1.The <User> is typing relevant data

- 2.The <User> press registration
- 3. Mysql query push data to database
- 4. The data has been saved to the database

Post condition

The database has a new row created regarding customer registration.

2.1.1.3 Requirement 2 : Order Online

Description & Priority

In this requirement the user could select his favourite items and place and order online. This is a feature which was implemented in the project.

Use Case

Scope

Let users which are logged in to make orders using the menu shop.

Description

Every user who is having an account on the platform is able to log in and purchase his favourite food products.

Use Case Diagram



Flow Description

Precondition

An account is required for the user to be able to order online.

Activation

This will start when the User starts adding items in the basket.

Main flow

- 1. The <User> can view food items
- 2. The <User> is adding favourite items in the basket
- 3. MySQL query push data to database
- 4. The data displayed in the basket

Post condition

The database stores now the food order which can be manipulated too.

2.1.1.4 Requirement 3 : Admin Dashboard

Description & Priority

In this requirement the admin can view the dashboard designed from where he can manage his private website.

Use Case

Scope

The scope is to let the admin to login into the dashboard and offer him the opportunity to make different changes.

Description

The owner will be able to manage his website by changing the content from it or edit/update different items from the menu list.

Use Case Diagram



Flow Description

Precondition

There will be only one main account given with the website as the admin account must be pre-stored into the database.

Activation

This will start when the owner accesses the private page created for owners.

Main flow

- 1.The <Admin> can access Admin Dashboard.
- 2. The <Admin> is able to change the content of the website
- 3. Mysql query updates data to the database
- 4. The data displayed in the main website

Post condition

The database is now updated with the new values and the new data is displayed in the main website.

Full Flow designed:



2.1.2. Data Requirements

Sufficient datasets are required to perform the analysis. I have made an analysis on three different platforms such as Just Eat, Order YOYO and Deliveroo to collect different data which will help me in making my web app more friendly user/owner experience while they are visiting the website and offer them different features which will bring more profits, or it will help them in building their own brand.

Just Eat is an online food order and delivery service. Is an intermediary between the restaurants and customers. They have designed their own platform where they host different restaurants and give you the opportunity to order your favorite food.

OrderYOYO is advertised as a food ordering platform which supports local. Their marketing 360 is quite interesting offering different advantages with optimizing google analytics, social media or email marketing which can boost your sales printing our posters or paying fees to be on the advertisement videos. **Deliveroo** is an online food ordering platform which are specialized in food delivery having their own contractors(drivers). At first appearance when opening the app what stands out the most is the time showing of how long a food will take until it will be delivered to you.

Working with this data I have implemented major changes to my structure to make a more user-friendly web app and maintain the major aim of providing the opportunity for the restaurant owners to build their own brand and not to be advertised on another platform.

2.1.3. User Requirements

From a user perspective, the web app must display the menu and to be able to make easy orders in short time. The result must be easy to access as all visualisations must be clearly represented along with the different kind of information representing the actions which can be happening on the website. It requires user to register into the app before he can place an actual order.

2.1.4. Environmental Requirements

The web application can be accessed through any web browser and it can be viewed from any device with internet.

2.1.5. Usability Requirements

The Fresh Food web application has an easy user interface to navigate across all pages and drive customers to ordering page. It provides details about the features on the admin side and make everything easy to update without having any coding background.

2.2. Design & Architecture



This architecture diagram represents the Fresh Food web app from a highlevel view. The web app will store data from the user in a database using different post queries. Registration process will store individual data regarding the name, address, mobile number of the customer which will create an account.

Also, the web app will store data from the user regarding the selection of the menu items when an order is created to be used in a later stage. The orders are currently displayed in the database, but an integration with a printer through an API would be ideal. Online payment authentication through PayPal API to validate the cards used and create an easy method of payment.

Database design



2.3.Implementation

The main files used in this project are the connection files and my restaurant file. In the connection files I have used queries to populate the database at the start of the project and then queries were used to manipulate data from the database. The usage of php language allowed me to update the database and to store the new title, sub-heading, and text description from About us page. The result will be showing into the main index page and the owner will be able to update his website using the portal designed for it.

Also, the menu items can be created from the admin dashboard, storing different parameters as name, description, price and allowing the admin to insert a picture of his food product which will be updated into the main website.

Everything behind runs on multiple queries for the database with the usage of counting different rows or filtering particular parameters to obtain the desired results.

2.4. Graphical User Interface (GUI)

1.Index page

-In here the user can view the page and go to the order online page. Easy navigation access through different pages can be also seen at the top. Carousel slideshow and different layout applied which will reflect more the products.







Order Online Now We have different offers

*Get 10% OFF first order when you order over 50 \in

*FREE Delivery for orders over 80 € in Dublin

r Online and have a chance to participate in the winning prize of a voucher worth 100 ε to purchase any products from our shop

2.Menu list

-The user can view the menu list where is displayed a full array of products from the database which contains different parameters as image, title, description, price, quantity or an add to basket option. If he will try to add products without being signed in, he will be redirected to the customer login.

3.Customer Login

-In here the user must login before he can place an order. If there is no login account, he can register a new account. These parameters are saved in the database to complete the structure flow of users and personal orders.

Fresh Food	Home About Contact Us	Register Order Now
	olcomo to Eroch Eo	~d
	elcome to riesh ro	ou
Please create your accour	nt now.	
	Create Account	
	* Full Name:	
	Your Full Name	
	Username:	
	Your Username	
	• Email	
	· Contact:	
	Contact	
	Address:	
	Address	
	Password:	
	Password	
	Submit	
	or Have an account? Login.	

Hello, Welcome to Fresh Food

Please login or create a new account now.

Login	
* Username:	
Username	1
* Password:	
Password	A
Submit	
or	
Create a new account.	

4.Customer logged in

-The customer is logged in with the account created and the product has been added to the basket. Now he can add more products to the basket too.

5.Basket view

-In here the user can empty, continue shopping, or check out. A full list with the products added to the basket is displayed in case the user is changing his mind before actually paying for the products.

6.Check out

-The user can pay by selecting cash on delivery, using PayPal or by Debit/Credit Card. This feature is secure by PayPal and I have opened up a business account where I could receive these payments.

Fresh Food Home About Contact Us L Hello test 🎁 Menu 👻 Basket (3)	🗗 Log Out
Choose the payment option:	
Total: €40 No delivery charges applied Co back to cart Cash On Delivery	
PayPal	
Powered by PayPal	

7.Paypal Payment

- The user can make payments using PayPal or credit cards. Currently used a sandbox account to make and receive payments.

Choose the payment option:
Inford Consume Lago - Compared Convert - A converting the Compared Convert Converting on Compared Conver
sections capagetization to decision the section 0.44 widdle 14.44 widdle data F PayPal w 20.80 USD We also use
O to the Knew Case to Delay
Normal spilles to the source of the table to the source and the source and the table to the source and the source and the table to the source and the table to the source and the source and the table to the source and the sou
Pay with Debit or Credit Card
Cannot and reface the Tred Store Legal Count-Agreement Pricesy © 1999-2021 B

8.Order placed

-Order has been placed and the order is stored into the database. A message is displayed to the user to let him know that the order has successfully been paid and the restaurant received the order.

F	resh Food Home About Contact Us	👤 Hello test 🛛 👖 Me	enu 🛛 🗑 Basket (0) 🕞 Log Out	
		ced Succes	sfully.	
	Thank you for C The ordering pr Your Order Num	Ordering at Fresh Food! ocess is now complete. ber: 380198738792195876		
	Go bac	k to menu here		

9.Admin login

- The page for admin login has no possibility of creating other accounts which means that the admin account is already pre-defined in the database. The only account holder will be the shop owner.

10.Admin Control Panel

-From here the admin can update the content of his own website.Edit Website and Shop Settings can be found on the left side panel which opens up new categories where the admin has control. He can update Home page, About us page and configure the settings of the Shop such as add items to the menu, edit menu, delete menu items or view current orders.

Fresh Food Home About Contact U	s Menu & Welcome admin Admin Control Panel C+ Log Out
Hello admi Manage your restaurant from th	in ! Nis portal.
Edit Website Shop Settings	Home page Edit
	First row Image Right Side: Choose File. No file chosen This Left Side: Say something about this Title Sub-Titls Left Side: Say something about this Sub-Title Description Left Side: Say something about this Description
	Second row Image Left Side Coxeer File Vo file chosen Tible Right Side: Say something about this Tote
	Sub-Title Right Side: Say something about this Sub-Title Description Right Side: Say something about this Description Supervised Say something about this Description Update
	About us page Edit
Fresh Food Home About Contac	tt Us Meniu L Welcome admin Admin Control Panel Co Log Out First row Image Right Side: Choose File No file chosen
	Title Left Side: Say something about the Tole Sub-Title Left Side: Say something about the Sub-Title Description Left Side: Say something about the Description
	Second row Image Laft Side: Citoose File No file chosen Tise Right Side: Say something about this Title Say something about this Sub-Title Description Right Side: Say something about this Description Say something about this Description
	Update
	About us page Edit Image: Cooke File: No File chosen TRe: Sey something about this Telle Sub-Title: Sey something about this Desc. Text: Sey something about this mage.
	Update

11.Add food items

-The admin can add new food items which will be added in the main Menu list. This are saved in the database and the information will be updated on the main website.

12.Edit food items

-The admin has the possibility to edit the menu items which will be updated into the database.

Fresh Food Home About	Contact Us Menu	L Welcome admin Admin Control Panel	🕒 Log Out
Hello ac Manage your restaura	dmin! nt from this portal.		
Edit Website			
View Food Items	MENILLIST		
Add Food Items		Update food items	
Edit Food Items	Update menu items:	There	
Delete Food Items	Potatoes	* Food Name:	
View Order Details	Broccoli	Tomatoes	
	Beans	* Food Price:	
	Tomatoes	* Food Description:	
	Garlic	Tomatoes	
	Mushroom		
	Cabbage	Update	
	Eggplants		
	Apples		
	Cherry		
	Orange		

13. Delete food items

-The ability of hiding different food items from the menu list. This feature could delete individual items completely from the database.

					L	Welcome admin Admin Co	ontrol Panel	🗗 Log Out
		•••••	•••					
Mar	nage your restauran	t from this	porta					
1	Edit Website							
Vi	iew Food Items		Г		ITE		IST	
Ad	dd Food Items							
Ed	dit Food Items		Foo	d Food	Deles	Developing	Restaurant	
Del	lete Food Items	-	m 84	Potatoes	10	The size varies depending on the	1	
Vie	w Order Details					variety		
			85	Broccoli	10	Broccoli is a good source of fibre and protein.	1	
			86	Beans	10	Beans are incredibly nutritious and a good source of protein	1	
			87	Tomatoes	10	Tomatoes are rich in lycopene, an antioxidant that is good for heart.	1	
		-	89	Garlic	10	One of the most widely used fresh or dried seasonings in food dishes.	1	
			90	Mushroom	10	Mushrooms are a good source of B vitamins	1	
			91	Cabbage	10	Cabbage is packed With nutrients and vitamin C	1	
			92	Eggplants	10	Eggplants are a nutrient-dense food, they contain vitamins.	1	
			93	Apples	10	Apples are mainly composed of carbs and water. They're rich in simple sugars.	1	
			94	Banana	10	The banana is rich in fibre, potassium and some beneficial vitamins for health.	1	
			95	Cherry	10	Cherries are a good source of fibre, vitamins, minerals and peak in season from May to August.	1	
		-	96	Orange	10	Oranges are a healthy source of fiber, vitamin C, thiamine, folate, and antioxidants.	1	
						antioxidants.		

14. View Orders List

-View the orders list by every customer. This feature is helping the shop to have statistics about their orders.

 Fresh Food Home Al	out Contact Us	Menu		💄 Wel	come adm	in	Admin C	ontrol Panel	🕒 Log 🤇
Hello Manage your res	admi taurant from th	n!							
Edit Website									
View Food Items			ORDE	RS LIST	Г ВҮ СІ	JST	OME	RS	
Add Food Items									1
Edit Food Items		Orde	r ID Food ID	Order Date	Food Name	Price	Quantity	Customer	
Delete Food Items		> 148	96	2021-05-16	Orange	10	1	test	
View Order Details		> 158	87	2021-05-16	Tomatoes	10	1	test	
		> 157	85	2021-05-16	Broccoli	10	1	test	
		> 156	87	2021-05-16	Tomatoes	10	1	test	
		> 155	85	2021-05-16	Broccoli	10	1	test	
		> 154	87	2021-05-16	Tomatoes	10	1	test	
		> 153	91	2021-05-16	Cabbage	10	1	test	
		> 152	85	2021-05-16	Broccoli	10	2	test	
		> 151	86	2021-05-16	Beans	10	-	test	
		> 150	86	2021-05-16	Beans	10	5	test	Ŀ
		> 149	00	2021-05-16	Dresseli	10	1	test	
		135	0.5	2021/03/10	Dioccon	10		tost ,	•

2.5.Testing

For the testing part, five participants were chosen, and I shared with them an introduction and then a survey to be filled in based on different tests. The efficiency or effectiveness on how the users will interact with the website was measured and the participants had to sign a informed consent at the beginning of the test.

I have tested three different testing methodologies The Five second, The Trunk test and the Think Aloud Test.

Five Second test.

View a selected page of the site for five seconds before removing it from view. Setup the page for viewing on a laptop, and after the 5 seconds closed the browser.

1)[Valerie Rollo]

I remember seeing food images moving on a slideshow, a button in the middle and some navigation links. There were some images also at the bottom of the screen and some white space around them. Also, there was some text in the bottom section. I could say it was a website for food ordering business as the order online button was highlighted too.

2)[Glanville Gisselle]

I saw an order online button, a picture with food products in a market and a logo which was on the top of the picture. Also, I was able to recognize the about section from the bottom of the screen where was some text about the restaurant.

3)[Kira Stephanie]

There were a lot going on for the five seconds I got to see the website, but I did see an order online button and navigation at the top of the website. When I scrolled down there were two images, some text and a lot of white space around the text and images. There was an image slider at the top of the website too.

4)[Delmar Maude]

The first thing I have noticed was the image with the vendor selling vegetables. Beneath that image was a button with the text "order now". The image moved to reveal another image, above which there were some options.

5)[Jay Denholm]

The top of the page had a navigation bar with various options, such as to register, login and order now. The first thing brought to my attention were the sliding images displaying various food. Below these images was a button for ordering.

Trunk test.

This is a test where participants are asked to navigate a site and locate certain things. For example, page names, navigation. For this test I asked participants to identify the site, the main sections and navigation options.

1)[Valerie Rollo]

Valerie said that the website for ordering food called Fresh Food. She could see this from the logo and from the title of the website. Different pages were identified as Home, About, Contact, Register and Order online. She could see that the the prototype for now is making sure that the user has access to the navigation from all the different pages. The main sections were the about section with some descriptive text and pictures plus the menu page with few food ordering products.

2)[Glanville Gisselle]

Glanville was also able to identify the website and she recognized the main page is the homepage and has information about Order Online and the shop. She has identified the top navigation bar and that is consistent across different pages as she could find her way easy when navigating the website. She did navigate to the menu sections where she chooses to order a product and then she created an account.

3)[Kira Stephanie]

Kira identified the main homepage of the website as Home, and she did recognize the navigation at the top of the website. The structure of the navigation was easy as she browsed through all the different pages. She focused on different section from the website as about, contact list or the products listed. She was fascinated that she was able to add products to her basket on the prototype version of website.

4)[Delmar Maude]

Delmar was quick to identify that he is located on the homepage. Since the options on the homepage are limited, he was able to recognize the navigation bar with the rest of the options. The name of the website "Fresh Foods" was located within the static logo of the page, leaving little to no space for confusion about the company name.

5)[Jay Denholm]

Jay was able to conclude that he is on the main page by the fact that there were images and the company logo, above which there was a navigation bar for the rest of the options. He clicked on the register button, filled out the details, logged in and browsed the menu intuitively. He was able to successfully place an order.

Think aloud test.

In the think aloud test, I asked the participants to use the system while thinking out loud as they used it. For this test I asked the participants to: use the site as normal and verbalize all thoughts as they used the site.

1)[Valerie Rollo]

"I am on the homepage right now and I can see a navigation, slideshow and an order online button. Now I am scrolling down, and I can read the description about the shop and that they have fresh food. I am scrolling back up and I clicked the Order Now button which loaded the menu for me where I can see different items. I added one item and it looks like I need to register first to be able to order. I created an account which forwarded me to my dashboard, and I have the current item added in my basket."

2)[Glanville Gisselle]

"I can see on the homepage the button order online and some text about the shop, but I would like to test the navigation and I choose to check the About page and Contact pages first. I click on the about page and I can see a section with a description plus an image related to the shop. I am curious to get more information where this shop is located, and I checked the Contact page. Here is Google map which also gives you direction to the shop, this is nice."

3)[Kira Stephanie]

"I opened the website, and I can see the home page and different buttons in the navigation link. The navigation is followed by a slider with images and a button from where you can order online. I pressed the button and now I am redirected to a menu page from where I can add products. I try to add a product, but I got redirected to the registration page. I have created an account and now I can see the products in my basket.

4)[Delmar Maude]

"Ok, I can see the company logo and the moving images behind it. On the top I can see different options. Below, I can see the "order now" button. I'm going to click on the order now button. Ok, it's asking me to register so I'm going to fill in my details. Alright, now I am submitting the details and I am looking at the menu. I will click on the button to add it to the basket. Now, I was transferred to the basket where I can see my products. I will click on the checkout button now. Ok, now it is asking me to select a payment method and I will go with cash at delivery option. And now I am looking the order confirmation number informing me that my order was placed successfully."

5)[Jay Denholm]

"So I am looking at the homepage where I can see images, the company logo, navigation bar. If I scroll down, I can see the order now button. I'm not sure what am I ordering so I will go back up and click on the register button. Now it is asking me to enter my details, so I am going to do that and click on submit button. Now I am looking at the menu and I will click on the last product to add it to the basket. So, after adding it, I am redirected to the basket but I want to add another product so I will go back to the menu. I have added another product and now I will go to the checkout. The option to pay by card is not there yet so I will click on the option to pay by cash when the delivery arrives. This is it; the order is placed, and I can see my reference number."

2.6.Evaluation

For the evaluation part I have conducted one more survey which was completed by the same participants where different questions were applied. Google Forms survey were used where I applied ten questions required so the users could choose their answer by selecting the correct answer for an evaluation scale starting from 1 to 5. This scale starts from 1 which is strongly disagree, ending with number 5 for strongly agree.

I have created a table extracted from Microsoft Excel with the answers from the users. The questions can be seen in attachments and the score represents their chosen number. Then I have calculated a median of the total score which is 82.8. This median represents that the website qualifies to be published but in the future the website could be improved.

Questions	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	TOTAL
Valerie	5	3	5	3	5	3	5	3	5	4	82%
Glanville	4	4	4	3	5	3	4	3	5	4	78%
Kira	5	3	5	4	5	4	5	3	5	3	84%
Delmar	5	3	5	3	5	3	5	4	5	4	84%
Jay	5	3	5	3	5	4	5	3	5	5	86%

Form: https://forms.gle/LKnngb65dEnWyFtH6

3.0Conclusions

The main advantage of this project is that the clients will be able to set up their online shop in no time having all the tools needed with easy access. They do not have to pay other companies to run their websites and menus because now they can do everything themselves.

The current project Fresh Food represents a local market shop which during the Covid-19 pandemic faced difficulties and wanted to expand the business to an online platform so that the people could find their products easy and help them to stay in business.

People can easily buy their fresh products straight from their garden and a current advantage is that they are running different promotions for the customers.

A disadvantage would be trying to convince some owners that this solution is better for their businesses because they are already connected with a third-party provider which might be known already in the food industry.

4.0Further Development or Research

The next part of the development of this project would be to implement more customisable options for the admin as this will attract more clients. Different API integrations could be worked on with Instagram feed or Facebook posts. This will help the owners to promote the content from those websites directly in my project.

The functionality workflow to allow expansion of implementing different vouchers in relation with the current user account and orders achieved.

Improvement of the design because of the 82,8% median achieved in the evaluation test with the participants. In here will be involved new techniques of usability design tests to be implemented so I could achieve a higher score overall.

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6.0Appendices

	6.1.Project Plan							
	Α	В	C	D	E			
1	Task ID	Task	Task Description	Project Start Date	Project Duration			
2	1	Market Research	Compare current ordering platform from market with my product	01/11/2020	10			
3	2	Database set up	Decide between MySgl or Firebase Database set up	11/11/2020	15			
4	3	Domain & Hosting	Will be using Namecheap as offers web hosting plus domain hosting	26/11/2020	3			
5	4	Website Client	Website set up + Deisgn for user experience	29/11/2020	36			
6	5	Website Admin	Admin portal set up + adding features	04/01/2021	36			
7	6	Update	Update button to update the live website	09/02/2021	15			
8	7	Payment	Paypal,ApplePay, Stripe integration	24/02/2021	17			
9	8	Confirmation Order Restaurant	Send detailed order confirmation to the restaurant	13/03/2021	14			
10	9	Confirmation Order Client	Send client confirmation order accepted /declined	27/03/2021	15			
11	10	Marketing Vouchers	11/04/2021	20				
12		Project Finish		01/05/2021				
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15			Fresh Food Online Ordering					
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34 25			Project Start Date Project Duration					
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50								

6.2.Reflective Journals

October

- Bogdan Branetiu
- X1811238
- Software Project

01/11/2020

I choose to do this project under Online food ordering topic because I think this would have a great potential in starting my own business in the future. My plan is to build a web platform for different restaurants which will come with its own admin platform for giving access towards all customizable features directly to the owners.

This month I had a look at three online food ordering platforms like JustEat, OrderYOYO and Deliveroo to conduct a market research analysis on their platforms. JustEat is an online food order service intermediary between restaurants and customers. They have designed their own platform where they host different restaurants and give you the opportunity to order your favorite food.

I find interesting the way JustEat advertise on the market by "connects you with your customers" when in fact surveys discovered that more than 50% of takeaway find it harder to build relation with their customers on the JustEat platforms. This has a minimal contact with their own customers and the loyalty is owned by JustEat and not the restaurant, basically the owner of a restaurant is investing in other company on a long time.

Other aspect I found during my research on OrderYOYO company which supposedly are designed to improve the food business, but in real life they are just making money from the restaurants owners by adding extra taxes and charging the customers extra services when paying for an order. I think is a negative point in online ordering and as a restaurant owner you cannot rely on such a business to represent your brand. Their marketing 360 program is very interesting offering different advantages with optimizing google analytics, social media or email marketing which are focusing to boost your sales.

Deliveroo is having an ordering platform plus their own contractors which brought a big advantage in expanding their services in the last years. I personally think they are the biggest competitor to JustEat and maybe in the future years they will occupy a better position in the worldwide market.

My web platform will be different than the current ordering platform from the market because I will offer my services as a package: website + portal. This means the restaurant owner would be able to modify on his own the menu list, administrate different task from restaurant and different features all with a small charge of maintenance not affecting percentage of their sales.

The owner will have admin account and would be able to customize the website how he would like in terms of changing different items from database or even layout which will reflect user interface.

I have good knowledge in MySQL databases, but I did not decide yet if I will use MySQL or firebase and I am planning to build two websites connected to the same database. One website will show the real data, restaurant info, menu, order, payment, and the other portal website will be administrative website with different functions like insert, update, delete from the same database.

On the portal website I am planning to integrate different features like a Facebook pixel tracking, google analytics which will bring advantages to the owner reflecting him being in control of his own business.

I will not be able to place my product on the market because of my current full-time position in food industry which will collide with my contract agreement of not coming in the market with a product under the same topic within 1 year of me leaving the actual job. This software project would be something that I plan to place on market in the future and not soon but is a business that I always wanted to start and proceed.

November

• Bogdan Branetiu

01/12/2020

- X18111238
- Software Project 01/11/2020

During this month I have managed to create my database which stores different parameters regarding Admin panel and normal customer. The database will be held on Firebase as this will give the opportunity to map easier in the future Menus using JSON objects.

The database is running correctly and the verification for the admin login has been implemented. Also, I was working on the back end of the first page for customers and admin where a lot of work was involved in setting the right permission for so that the customers are not able to use the admin portal and to make the only one admin account to oversee the website.

Next I will focus on expanding my database and adding different parameters for the two pages which I created initially index.html and /admin index. This will give me the possibility of adding more features as Menu, Order now, Make a reservation or About us.

The Order now page will take the most time as it must be integrated different payment systems. I was looking in this type of payment systems and PayPal and Stripe offers me the possibility to create a sandbox where I could pay with virtual credit cards, but Apple pay doesn't which mean that my payment method must work before the integration with the Apple pay. The confirmation page will have to record the order and send it to the database before sending it to the restaurant so that I can store this order in case something will go wrong with the integration from different POS systems of restaurants.

This month was a busy month as there were other projects which I had deadline submission during these weeks, and I could not get more work done due to this.

I am planning for the next month December to achieve most of the things within a working prototype which will let the client to order from menu and the admin to control the administrative tasks on the website.

December

- Bogdan Branetiu
- X18111238
- Software Project

01/01/2021

During this month I have successfully implemented the communication between the database and the user plus I have added extra features as send, view, delete orders or being able from the owner view to manage the database and interface of the website.

For the server-side communication and where the main owner is stored is currently on a SQL database, but I will be looking in the future to move this to the Firebase database as I want the menu items to be hold on Firebase for a better manipulation of the JSON files. I choose the menu items to be on firebase as there are different tools for creating json format which will help me in generating new menus faster.

The send, view, delete orders is now successfully implemented for the prototype version of the project and a normal user can send orders and the owner is able to view the number of orders received and delete them. The customer can place an order only for cash on delivery as the other payment methods as PayPal, stripe connection is still in progress.

Owner is now able to view his control panel from where he has access to the features described above and he can manage the about us section from the website by importing a new photo and a new text which will be automatically updated in the database and the main website will show the newest version of image and text. I am planning to have this feature across the whole website so that the owner will be able to manage most of things without having any coding knowledge.

PayPal sandbox has been tested for the new integration with my website and I was able to place payments using my virtual card and receive a successful response when the payment has been done.

Next work I must concentrate on expanding the managing possibilities and importing the payment stability with PayPal and Stripe. Also new pages must be created for the user experience, content must be structured for the SEO and CSS applied for a better experience across the website.

January

- Bogdan Branetiu
- X18111238
- Software Project

01/02/2021

In this month I have concentrated on implementing the PayPal payments which will allow payments through PayPal platform and show a reply on the website that the payment has been successfully done.

I worked on expanding the services for admin which will allow the admin to view the current orders placed to his shop, to delete an order or to add different items to the menu which is listed online.

Few issues regarding the relationship between an order and a user as if the same order would get added twice by the same user, the database will generate a duplicate of orders and not items. I have spent more than two weeks to apply a solution for this issue which now is getting the correct items amount to a specific order.

Now different users can order food from the website and the admin can view on his dashboard the orders displayed and action them for any circumstance.

Next work will have to be to expand this feature so that the admin will get more control over the website, finish the PayPal functionality, and work more on the design.

February

- Bogdan Branetiu
- X18111238
- Software Project

01/03/2021

In this month I tested the current functionality of the website and tried to improve the SEO by adding descriptions to the images, trying to construct a usability design of the website which would improve the performance too.

During this time, I visited again different ordering platforms like JustEat or Deliveroo to collect more valuable information of how to design my menu items which will keep a good flow through different menu pages.

Working on the SEO of the website can be difficult as the google algorithm takes in consideration different stages of the website and everything must be in place starting from the text, fav icons, attributes, descriptions etc.

I have tested the Stripe API for an integration, but I am getting errors and probably would be looking in setting up an account with them and ask for more docs about the API integrations. If this will not be possible, I will keep the PayPal method, cash on delivery and will be looking in adding a new card method of payment.

For the next phase will be looking to have a defined payment system, improve the SEO and CSS of the website.

March

- Bogdan Branetiu
- X18111238
- Software Project

01/04/2021

This month I have been working on the payment options as the PayPal and cash option works fine, but I had issues in the integration with the Stripe to allow card payments. The Stripe is connected to my website but after I make a purchase, the stripe server does not recognize my payment. During the next days I spent more time checking for this issue how it can be solved with their support team. While I was waiting for answers, I did some work on the design of the admin panel where I applied colors and different backgrounds to the admin menu and changed the layout of it. The admin panel will have a new design implemented which will make it easier for the admin experience.

After some time, I received help from the stripe support team where they highlighted that I have applied some wrong code on my website which is not recognizing the server used and therefore the connection is not supported.

They listed for me few set up guides and I will need to have a look for the next weeks to make the bank cards available as a payment option.

April

- Bogdan Branetiu
- X18111238
- Software Project

01/05/2021

Reflective Journal

During this month I spent more time in solving the Stripe connection issue which I have it running locally on a sandbox after I received some guides from their team, but as soon as I try to do an online payment it shows errors.

I have posted my issue on stripe developers blog where I am hoping them to direct me to the necessary documentation which will help me in making my API call successful on an online payment.

The rest of functionality is implemented, and it leaves time for more work that needs to be duplicated for the administrator panel because more permissions are needed to be able to customize everything from the website.

The design of the website is not looking to great and I plan for the rest of time left to focus on the designing of the index page where I would like to show Instagram or Facebook widgets too or for example the menu page which will have a completely new design for listening the items.

I have finished with my other projects and now I will have time to put more in this project and bring it to the maximum level. During the next weeks I will focus on these tasks to have my project ready to be presented.

6.3. Surveys

FIESTIFOOD We have one last survey which will focus on 10 questions where you can choose an answer from strongly disagree to strongly agree on a scale from 1 to 5. *Required							
1.I think that I would lil	ke to use	e this sys	stem fre	quently.	*		
	1	2	3	4	5		
Strongly Disagree	0	0	0	0	0	Strongly Agree	
2.I found the system u	Innecess	sarily co	mplex. *				
	1	2	3	4	5		
Strongly Disagree	0	0	0	0	0	Strongly Agree	
3.I thought the system	n was ea	sy to us	e. *				
	1	2	3	4	5		
Strongly Disagree	0	0	0	0	0	Strongly Agree	
Strongly Disagree 4.I think that I would r system. *	O	Support	O t of a teo	O chnical p	O person to	Strongly Agree	
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5.I found the various f	unction	s in this s	system v	vere we	ll integra	ted. *
	1	2	3	4	5	
Strongly Disagree	0	0	0	0	0	Strongly Agree
6.I thought there was	too muc	h incon:	sistency	in this s	ystem. *	
	1	2	3	4	5	
Strongly Disagree	0	0	0	0	0	Strongly Agree
7. I would imagine tha	t most p	eople w	ould lea	rn to use	e this sys	tem very quickly. *
	1	2	3	4	5	
Strongly Disagree	0	0	0	0	0	Strongly Agree
8.I found the system v	very cum	bersom	e to use	. *		
	1	2	3	4	5	
Strongly Disagree	0	0	0	0	0	Strongly Agree
9.I felt very confident	using th	e systen	n. *			
	1	2	3	4	5	
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Strongly Disagree	1 O lot of th 1	2 O ings bef 2	3 O fore I con 3	4 O uld get g 4	5 O going with 5	Strongly Agree h this system. *

PROPOSAL APPENDIX

(see next page)

National College of Ireland

Project Proposal Food Ordering 08/11/2020

Software Project Software Development Academic Year 2020/2021 Bogdan Branetiu X18111238 X18111238@student.ncirl.ie

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Objectives

Restaurant owners will switch to the new food ordering platform

The restaurant owners will be delighted to find out they will not have to deal anymore with a third party regarding their website and how they process orders. Most of the restaurant owners are signed with different platforms like Just Eat, Order YOYO or Deliveroo where they are advertising someone else's business. They are brining profit to other platforms and driving own customers to have a large opportunity of different choices which could be assimilated with their own food products, but other restaurants might be in a closer area of delivery. This will lead the customer to not choose your restaurant for ordering and he can be attracted by other food presented by different platforms. The restaurant will be able to build its own brand in the market and people will be able to order directly from the restaurant.

Restaurant owners will be able to maintain their own platform

The package would consist of one main website and a portal which will give admin access to the owner of the restaurant. The restaurant owner will be able to customise the front page of his website using he portal keeping it very easy just drag and drop for pictures or type text and a save button for the new text to appear on the front page.

They would also have the possibility of customizing own menu using the portal plus they will have different administrative features like creating different teams, adding members, allocating teams to different tables for big venues.

Also new accounts for managers or staff could be created having restricted access for different purposes.

Background

After conducting a market research on this topic, I have found different aspects of the business which can be effective during the development process of my project.

New research has found that at presence the company Deliveroo generates over 48 million last year of revenue across the economy in Ireland, with 36 million of that going to the restaurant sector which leaves a difference of 12 million going into actual delivery service according to RTE.

Also, the food company Just Eat served up profits of 4.7 million on turnover of 20.5 million in 2017. In 2018 they served up profits of 9,2 million a 95 per cent jump on the previous year and for the last year with a profit of 17,5 million.

The Irish food and drink sector have put an impressive export performance in the recent years. Very much of this growth was due by strong export in diary, beverages prepared food and online ordering. This performance is very impressive if you look at it even against COVID-19 times, the food industry has never took a break and despite the fact that it affected many restaurants, everyone turned out opting for online delivery including pubs or other small business. They all faced this problem and had to focus on selling their products online. Worldwide online food delivery became increasingly well accepted and more evident in China. The food industry has a revenue increasing year by ear and every platform tends to provide consumers with the options of having meals at a cheaper price or by adding other services such as delivery.

Coun	Foreca	Annual	Market	Volume of	Leading
try	st	Growth	Delivery	Market Delivery	Platforms
	Revenu	Rate			
	e in	(2020-			
	2020	2024)			
UK	5988	6.5%	Restaurant-	4115	Just Eat, Food
			Consumer		Hub,
					Deliveroo
US	26,527	5.1%	Restaurant-	15,631	Grubhub,
			Consumer		Uber Eats,
					Doordash
India	10,196	9.5%	Restaurant-	5401	Foodpanda,
			Consumer		Swiggy,
					Zomato, Uber
					Eats
China	51,514	7.0%	Platform-	37,708	Meituan,
			Consumer		Eleme

In Ireland, the food industry has grown year by year which reflects in more orders placed online too. Different companies came on the marked with products which looks good at the first impression but are not designed for the restaurant benefit and more like to bring an increase in their own budget, also they do not think about the restaurant performance in the market. I believe the main goal is to prioritize the restaurant business by giving them the opportunity to come out from such platforms where they are advertising someone else's business.

There are three main targets where I will focus and that would be college students and adults, parents and working professionals. Each of this category can bring a huge impact in my business if it is approached correctly. For example, implementing a plan of their main restaurants which are used during the break hours or local favourite food.

Being able to work with this data can give me an insight of which are the most restaurants used during those peak hours or normal hours and then I could obtain my potential sale channels.

Technical Approach

I have made a comparison between three products in terms of website appearance, order online features, different restaurants which are on these platforms and the possible integration with different features or other party. This companies are already in the top positions on the market Just Eat, Order YOYO and Deliveroo.

After I analysed the websites and the online ordering features I came to conclusion that the images of food are well presented with descriptions giving different details of the restaurant and cuisine types or different marketing options which can be an advantage with optimizing google analytics, social media or email marketing which can also boost your sales.

There were few issues in terms of performance where I have seen an increased loading time of the menu for different restaurants or I had bad experience using Deliveroo, after I spent time completing the order and when I have tried paying for the order, a pop up message came saying that the restaurant is closed. Just Eat is advertising that connects you with your customers when in fact surveys discovered that more than 50% of takeaways find it harder to build the relationship with their customers. When a customer wants to order his favourite food, he orders from Just Eat platform who outsources the order from the restaurants. In a long time, this is not good for the restaurants as it has a minimal contact with their own customers and the loyalty is owner by Just Eat and not the restaurant.

For these reasons I will build a product which can be owned by the restaurant and the owners will be able to maintain and customise it how they would like. In a long term they will build their own brand and keep a relation with the customers.

I am planning to follow the agile methodology which will allow me to be open for development changes in projects as they occur, rather than follow a fixed rules or criteria. The implementation phase will be categorised in 4 different topics: initiation phase, installation phase, institutionalized phase, and maintenance/continuation phase.

In the first phase I am developing a list of project planning to launch the project. This list should contain all the necessary information estimated timelines, scope, characteristics, cost calculations and the value adding outcomes my product will bring on the market.

For the installation phase I have done a research of new technologies which are daily used and check for potential integrations with using apple pay, PayPal or stripe for a payment method without having to deal with all the laws regarding processing online payments. In the institutionalized phase I will focus to scale up the checklist, tracking technology and communication done in the previous phases to work for all different restaurants depending on different aspects. In the last phase my goal is to make this product to work organically and intuitively for all users keeping them in a long-term using the platform I provided for them.

Technical Details

For this project I will be using different programming languages and software to achieve a high-performance functionality and designing aspects. I will be developing two websites and a database. One website will represent the end user view and the other one will be a portal which will give access to the content from the website as well as giving access to different customisable features.

PHP will be used to code the functionality of the websites along with **HTML** coding too.

CSS will be used for the designing part of the website.

JavaScript for working with variables and giving the possibility to modify the current content.

NodeJS to build stylesheet online for a faster upload/download integration between me and different customers which will choose a different layout for the website.

MySQL or **Firebase** for database integration with the websites and where all the data will be stored.

Namecheap for domain hosting and will be used for website hosting too as they offer different packages with cPanel or FTP access.

PayPal, Apple Pay, Stripe for processing card payments.

Evaluation

The evaluation process will consist in having different tests using API's for a faster integration. There are payment companies which offers integration though API or other POS systems which the restaurants are using to deal with payments. For example, Stripe has a portal where they offer test card numbers to test your integration or PayPal has a sandbox where you could pay with a test card too.

I am planning to make surveys when the website is finished and ask people to order from the website so I could track any potential delays for orders or if anyone has any issues using the website.

The surveys will be divided in to two parts as client role and admin role. Client role will be able to explore the website, all the categories such as about us, menu, order now, payment section where they will be able to pay using a card number, I will give to them. This will help me in tracking different issues on the website as long with few questions where they will have the possibility of saying how it was their experience on the website. For the admin role I will give them access so that they can create own menus, customise the website and with a press of an update button, everything will be live on the main website where the clients will have access.

These review methods can be scaled and adapted to different situation. A good user interface design and usability should propose a suitable scale for this method. The structured review of the site usability should be cheaper and faster than usability testing because it can be conducted at every phase of the development/design process and can be used repeatedly too.

A comprehensive understanding of these issues requires a consideration of different factors arising from strategic, cultural, and operational perspectives. The aim of this would be to place three different categories such college students, adults/parents and working professionals to order using the website and see from their perspective how was their experience of using my software.

In terms of having my system live in a restaurant is not possible yet because of my current employment status, but I will cover all other aspects of having the evaluation done through analysis, surveys and using API's which offer test cards for payments.

Invention Disclosure Form

1. Title of Invention

Online food ordering

2. Inventors

Name	School/Resear ch Institute	Affiliatio n with Institute	Address, contact	% Contributi
------	-------------------------------	-----------------------------------	---------------------	-----------------

			(i.e.	phone no.,	on to the
			departme	e-mail	Invention
			nt,		
			student,		
			staff,		
			visitor)		
Bogda	National			08513051	100%
n	College	of		28	
Branet	Ireland				
iu					

3. Contribution to the Invention

Each contributor/potential inventor should write a paragraph relating to his/her contribution and include a signature and date at the end of the paragraph.

My contribution to the actual ordering system is that I will give the opportunity to the shop owners to build their own brand in a long term. They will be able to customize their own website and ordering system from the admin portal which comes with the website.

Bogdan Branetiu, 16/05/2021

4. Description of Invention

(Please highlight the novelty/patentable aspect. Attach extra sheets if necessary including diagrams where appropriate). What is novel, the 'inventive step'? For more information on patents, please look at <u>http://www.patentsoffice.ie/en/patents.aspx</u>

There are different companies on the market which are offering a similar product, but none of them are offering the shop owners full control of their website without having to make a request to a third party.

In the current system which I will develop I will give the opportunity to the restaurants to build their own brand in a long term and be able to divert customers to order directly from the restaurant and no other platforms.

5. Why is this invention more advantageous than present technology?

What is its novel or unusual features? What problems does it solve? What are the problems associated with these technologies, products or processes? Explain how this invention overcomes these problems (*i.e.* what are its advantages).

The food service industry is a competitive marketplace, but the BB development offers the fastest ordering system for the restaurants, encourage client loyalty, save money on transaction fees and build your own brand and not someone's else platform.

More than this the ordering platform will come with an admin portal from where the restaurant owner will be able to customize the menu from the restaurant, about us section and do different administrative tasks without having any knowledge of tech background. 6. What is the current stage of development / testing of the invention?

The web application is successfully finished.

7. List the names of companies which you think would be interested in using, developing, or marketing this invention

Food markets, restaurants and food take away.

8. Funding Partner(s)

Government Agency & Department	NA
% Support	NA
Contract/Grant No.	NA
Contact Name	NA
Phone No.	NA
Address	NA

Industry or other Sponsor	NA
% Support	NA
Contract/Grant No.	NA

Contact Name	NA
Phone No.	NA
Address	NA

9. Where was the research carried out?

Research was carried over three actual companies which are on the market already.

Just Eat, Order YOYO and Deliveroo.

10. What is the potential commercial application of this invention?

Performing a SWOT analysis will give me an insight of potential commercial, but also the market research done focused on positive and negative aspects between different current online food ordering platforms.

Most of startup companies have an increasement in the first year followed by a potential stagnation for a transition of 1-2 years due to the fact that most of small business were covered and now I will have to focus on signing other restaurants which might be with other competitors.

11. Was there transfer of any materials/information to or from other institutions regarding this invention?

If so please give details and provide signed agreements where relevant.

NA

12. Have any third parties any rights to this invention?

If yes, give names and addresses and a brief explanation of involvement.

NA

13.Are there any existing or planned disclosures regarding this invention? Please give details.

I am currently working as a full-time web project coordinator for a company in Ireland. My working contract is restricting me in publishing this invention within 2 years after I leave the job.

This invention is something which I have planned after I will finish my contract with the current company.

14. Has any patent application been made? No

If yes, give date: ____NA____ Application No.:

Name of patent agent: _____NA_____

Please supply copy of specification.

15.Is a model or prototype available? Has the invention been demonstrated practically?

NA

I/we acknowledge that I/we have read, understood and agree with this form and the Institute's *Intellectual Property and Procedures* and that all the information provided in this disclosure is complete and correct.

I/we shall take all reasonable precautions to protect the integrity and confidentiality of the IP in question.

Inventor: Bogdan Branetiu

16/05/2021

Date

Signature