# Abstract

add login so can store payment details > supermarket QR code

login – phone number + password

ask Stephen for book recommendation on test cases and evaluation methods

evaluation tests user understanding of the functionality (usability) and whether the functions (or additional functions) are wanted (functionality) using open exam testing questions (without revealing the answers) so the user can be tested with the usability – use structured interview with survey

for project specification – supplement each requirement with test cases

# Project Specification (Done2)

## Introduction & Brief Project Outline (Done2)

// Project Significance

Following the covid-19 pandemic, restaurant owners are facing an uphill battle against the prospect of their future financial success. The skyrocket global unemployment rate has led to rising anxiety amongst individuals to spend money in restaurants. Furthermore, we are likely to observe a decline in the supply of waitering jobs given the uprising number of University graduates every year and the aging developed countries. To support restaurant owners through this difficult time, an interesting software project – Hi! – has been pioneered, a web-based platform that primarily takes orders and payments for restaurant customers. It is projected that this app can save restaurant owners waitering workload by 50%, reducing costs to a staggering £10,000 to £30,000+ each year!

## Requirement Statements (Done2)

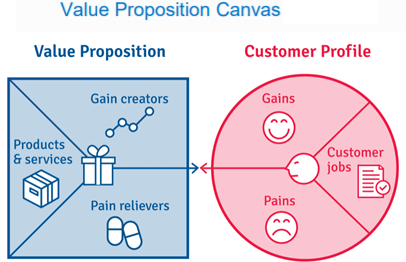
// dissect information by page

// talk about the functionality and the consideration for each page

// High Priority (minimum Viable Product), Lower Priority, Other Priority

MOSCOW

Although the ability to take orders and payments via a web app is a sufficient business concept, it is still an ideal practice to examine the full scope of the project requirements in the context of a restaurant. We will not consider the takeaway aspect of the restaurant model because this nature of business requires large client base which we don’t have. To analyse all the possible requirements of the project, we will adapt the standard industrial practice - Value Proposition Canvas (2014).



VPC defines all the possible tasks each restaurant each stakeholder (customers, chefs, waiters, owners) wants to accomplish, the gains (solutions) acquired, and the pains (issues) resolved by the software. We will also identify the software features (products & services) that act as their gain creators and pain relievers.

### Sit-In Customers

|  |  |
| --- | --- |
| Customers’ Jobs | Gains, Pains, Gain Creators, Pain Relievers, Product & Services, Essential Points |
| Feel wanting to eat out | Add register users to the email list and inform them new offers to stimulate their interest to eat out  Collect the phone numbers of the registered users and text them relevant offers too  Advertise our app through social media (Facebook Ads), web ads or letters if we can collect their home address with a takeaway service  Have YouTube Influencer to promote our app – we can have loyalty points (£10 discount for £100 spending/ discount special days to encourage user to eat out) |
| Find a restaurant they want to go online | We can display all registered restaurants based on proximity, price, type of food, size, atmosphere, reviews, car park costs and availability  Adapt search engine optimisation for Google search  Give discount if registered users promote our app using their Facebook and Instagram  Give discount if registered users post the food and drinks, they ordered onto our platform. This will improve the profile picture of the restaurants because some restaurants may not know or want to post their meal pictures up due to laziness or not knowing this functionality. We can provide a template for business owners to create a professional profile  We can have the reviews displayed under the restaurant’s name (thumb up, OK, thumb down)  Post our logo onto a visible place in the restaurant so people can see the menu even they are outside the restaurant. They can also order food and drinks even when they are not seated  Some people may not iterate with the use of a phone. We can provide easy guidance (speed tutorials) to improve their user experience |
| Find the location of the restaurant | People may find the restaurant using the google map function in our platform  For each restaurant, we will have an address and postcode that links to Google Map so they can see the approximate location of the restaurant in a wider scope  Some users may not know this functionality if it is not clearly displayed. We will add a “click” sign to show that the address and postcode are clickable  We can ask the restaurant owner to post the surrounding of the restaurant at the front page so customers can identify the restaurant easily. |
| Reserve a table | We can have an online booking system  Telephone, Platform (e.g. OpenTable, 5pm), go without reservation |
| Go to the restaurant | Driving (Google Map), walking, cycling |
| Go inside the restaurant and wait for a waiter | Wait until a waiter notices, use a seat allocation robot |
| Waiter takes customers to a table | Waiter may need to find an unreserved empty table with a table management software |
| Take a seat | The app can record the occupied and reserved seats. |
| Take the menu | The app can display all the food and drinks the restaurant offers.  The customers may find the images too small to read.  The customers can see the images of the food and drinks offered instead of words  We can use a QR code to direct user to our web-app. |
| Discuss the food and drinks they want with their friends and family | The app can display popular food and drinks first. The app can display the food and drinks available at the restaurant and the food and drinks they have clicked to maximise the size of the images. |
| Come up with the food and drinks they want as a group | Customers can add and remove the food and drink they want as they go through the menu. |
| Wait for the waiter to come up | Using our app, customers can order the food and drinks they want once they have been seated. |
| Listen to waiter’s meal recommendations | Our app will place popular meals first. |
| Tell waiter the food and drinks they want to have | The customer can click and discard the food and drinks they want to order |
| Get asked whether they want the food to come separately or together | After the customer pays for their bills, a notification will pop up asking whether they want the meals to come together or separately |
| Have a conversation and wait for the food and drinks to come | The customer will be redirected to our all-restaurants platform so they can chat about other good restaurants  Have ads for our platform  Introduce multi-go discount- if the app user go to the specified three places (restaurant, pool centre and attraction), they can get a 10% off discount for all. We can track their activity using their phone number.  Related restaurants (based on the city, food, popularity, price, review) will be ranked and higher-ranking restaurants will be displayed first. |
| The food and drinks are served | We can adapt an AI system to analyse the time taken for each meal. This will predict when the meals are ready to serve.  We can have a sound notification to inform the customer when the food and drinks are cooked after the chefs click food ready. |
| Have the food and drinks | We can create a system to analyse the average time taken customers take to finish a meal to help seat allocation. |
| get asked whether they like the food | We can post a feedback notification about the last restaurant they visited after the customer has paid for their food. |
| Finish the food and drinks | - |
| Have the waiter to collect the plates | The restaurant can adapt a sushi belt (e.g. Yo! Sushi) to deliver food and drinks. |
| Ask for the bills | The app will facilitate the payment process. Remember their bank details based on their phone number using their history setting. However, this will give customers discomfort about security.  We can have a camera card scanning function to auto-type the bank details for the customers.  We will explicitly states that your card details will not be stored into our system. |
| Get the bills | - |
| Pay for bills | The customer will get a succeed notification after the payment is approved. |
| Give a tip | The system will allow customers to type in the tip they want to give to the restaurant at checkout. |
| Leave the restaurant | We can have a progress record to show every user the number of customers are in the restaurants and the time they would need to wait before they can have their meals. |

### Chefs

|  |  |
| --- | --- |
| Chefs’ Jobs | Gains, Pains, Gain Creators, Pain Relievers, Product & Services, Essential Points |
| Receive an order | Send the list of food they need to cook directly to the chef  Waiter doesn’t need to type it to the computer system |
| Pick out relevant ingredients | - |
| Cook the food | - |
| Inform waiter the food is ready | Chefs will press completed for the food that they have cooked. Then, the computer system will have a sound notification to tell the waiter that the food is ready to pick up |
| Look at the shift so they know when to work | The computer system can help manage staff rota |

### Waiters

|  |  |
| --- | --- |
| Waiters’ Jobs | Gains, Pains, Gain Creators, Pain Relievers, Product & Services, Essential Points |
| If there are customers waiting at the door, approach and greet them | - |
| Take them to the table | - |
| Tell them how to order food and drinks (go to the waiter section, ask for a waiter to come) | The waiter will introduce the app to the customers and ask them to scan the QR code. E.g. Hi, welcome to our restaurant. We have our food pictures posted online. If you can scan the QR code here using your camera, you will then see our menu. |
| Walk away from the customers to give them time to decide for the food and drinks | - |
| After a few minutes, go back to the customers and ask what they want to have for food and drinks | The app will show all the food and drinks available online  The QR code will record the table number the customers are sitting in  The app will show the restaurant logo, categories of the food (e.g. starter, main-course, dessert, alcohol, drinks) |
| Take out ordering paper/ machine | The customer can click the + button to add the food and drinks they want to the cart  The app will show the food and drinks in the forms of image, text and price, whether it is vegan and contains nuts  The app will show the list of food and drinks they ordered in the cart section  After the customers finish picking their meals, they will click the cart to see the order summary |
| Listen and note down what the customers want to have | - |
| Give the order to the chef OR tap the food and drinks they want to have to send it to the chef | - |
| Collect bills and tips | After the customer clicks pay, they will be redirect to the payment portal at which they will enter their card details (card number, expiry date, CCV) by typing or scanning. They can enter their tips value in the tips section. Once they click pay bills and tips, they will be redirected to the all-restaurants sections to see participating restaurants. |
| Clean the restaurants | We can have a task list for each role so restaurant owners can keep track of the things that they will do |

### Restaurant Owners

|  |  |
| --- | --- |
| Restaurant Owners’ Job | Gains, Pains, Gain Creators, Pain Relievers, Product & Services, Essential Points |
| Recruit chef | - |
| Recruit waiter | - |
| Develop a restaurant website | We can develop a all-restaurants platform whereby customers can see all available restaurants. The platform will summarise all the essential restaurant information so customers don’t need to click on each individual restaurant. A similar platform is 5pm or OpenTable. |
| Advertise the restaurant via platforms such as OpenTable and 5pm | We can also do that as above. Because our primary business is software-waiter. We can quickly acquire mass client base compared to OpenTable or 5pm. |
| Decide on the shifts for the staff | We can have a staff rota function for the restaurant owners to visualise all the roles of the restaurant staffs. So they don’t need to use a piece of paper or other expensive software to arrange staff workload. |
| Pay them daily/ weekly/ monthly | We can arrange an automatic daily/ weekly payroll so the salary payment process will become automatic. However, we need to take into account that some restaurants may not want to do that as they would prefer cash payroll. |
| Taste chefs’ food | We can have a review section so the restaurant owners can know what food customers like and dislike. We can also partner with other professional recipe sites so they can share some insights into better food making. |
| Monitor waiter and chef performance | We can have an advisory system to coach restaurant owners how to motivate staff to work harder. We can deliver online course to teach them how to manage employees. |
| Train waiter/ chefs | We can deploy online tutorials on waiters/ chefs training so restaurant owners can just follow it and adjust it as they need |
| Recruit an Accountant for managing tax and legal issue | We can include accountancy service within our app. We can have a consent opt-in section in which their restaurant financial data will be shared with us. We can deliver online accountancy tutorial to help them mange tax effectively. We can also deliver company growth strategies, hopefully they will binge watch our YouTube channel. |
| Purchase insurance | Currently, insurance services are web-based and very automatic. We can partner with an insurance firm – for each customer we obtain, we will get a commission fee. |
| Maintain the decoration of the restaurants | We can gather artists and interior designers to propose potential restaurant decorations. For each customer we obtain, we will get a commission fee. |
| Purchase new kitchen appliances | We can have videos to show how machinery (e.g. chef’s robotic arms) can help them maximise their productivity. That will encourage people to see and know our channels and encourage sales. |
| Purchase restaurant furniture (tables, chairs) | We can have videos on furniture purchasing guides. We can suggest matching chair and table patterns and colours, and we can refer them to some other stores to encourage their sale. We may take 5% of the total sale. |
| Go to a business wholesale supermarket to buy raw materials every 3-5 days | We can create a system to help restaurant owners to schedule food delivery. For owners who buy their own stocks, we can create a system that has all images of stocks and a list of whether they need to purchase it that week. They can then click the stock they would need to buy that day beforehand and go to the market without forgetting what to buy. |
| Design and print menu with a printing company | All the menus (text and image) will be displayed through our app so customers don’t need to be annoyed by a sheet of text because they will have images instead.  We can make our menu printable so they can update menu details easily. We can partner with a printing company for this. The more quality service we provide, the large pool of customers we will get. |
| Calculate daily revenue for accounting purpose | If the restaurant owners opt-into our system, they can see their daily/ weekly/ annual revenue. |
| Calculate cost and revenue | The restaurant can enter their costs of food and staff into our system, then it will automatically produce the profit they make annually. |
| Pay gas and electric bills monthly | - |
| Think about offers and discounts to attract customers, especially during quiet hours | We can ask the restaurants if they want to offer lower costs meals at quiet times (e.g. 3-5pm).  We can promote different restaurants (e.g. if you have been restaurant A, we will promote dessert parlour B the same day.) |
| Purchase covid-19 equipment (hand sanitizer, masks, wipes) | We can see if we can offer cheaper hand sanitizer, masks and wipes if we connect with suppliers. |
| Ensure social distancing rules (put stickers on each table) | We will adapt the QR code to minimise the contacts between staff and customers |
| Greet health inspection officer | - |
| Greet tax inspection officer | - |
| Register for a food licence (selling, cooking, storing, preparing and distributing food) from the local council | - |
| Ensure the expire dates of the food and drinks | - |
| Ensures the food are cooked properly | - |
| Ensures the food are stored properly | - |
| Obtain feedback from the customers |  |
| Deal with customer’s complaints | We will have a complaint section listing all the complaints customers have. We will show whether the complaint is resolved. |
| Obtain a premise licence for selling alcohol, hot food and drinks between 11pm and 5am or if they provide entertainment such as film screening, sporting events, live music, recorded music, dancing facilities or facilities for making music | We can have a status showing whether the restaurant has an alcoholic licence so they know whether the place will sell drinks |
| Obtain a TV licence if they put a screen in their premises | - |
| Obtain a leaflet licence if they decide to distribute flyers from local businesses, newspapers and other printed materials | - |
| Awareness of food hygiene and health and safety regulation | - |
| Have a repairer contact in case something is broken | We can have a list of local repairers so restaurants owners can refer to them when needed. It can also help us to be at the first rank in the search engine. |
| Legal contracts – restaurant ownerships | - |
| Pay monthly rent | - |
| Think about how to improve the restaurant in terms of the above elements | We can have a YouTube channel explaining different aspects a restaurant can be improved upon |

## Test Driven Development for Minimal Viable Product (Done2)

* read books for test driven development

To prioritise the different software components, we cluster all the requirements into portions that must be completed before March 2021, the minimal viable product; and those that will be achieved after the launch of the project, the future work. We will discuss the future work in the evaluation section.

### User Stories & Acceptance Criteria

This section will examine the minimal deliverables that must be completed before the end of the project in March 2021, in terms of the customers, chefs, waiters and restaurant owners. These requirements will also act as the test points for the product.

User Story Template

As a [role]

I want [feature]

So that [benefit]

Acceptance Criteria/ Scenarios

Given [context]

When [event]

Then [outcome]

1. As a Customer

|  |  |  |
| --- | --- | --- |
| N | User Stories | Acceptance Criteria/ Scenarios |
| 1a | I want to be able to go to the web-menu platform using the QR code.  So that I can pick, order, and pay for the food and drinks that I want. | Scenario 1: A customer is ordering food themselves (with some help from the waiter)  Given that the customer is seated  Given a QR code  And a phone with a working camera  And a printed set of instructions on the table  And the waiter explains and shows how the QR code scanning works  When the customer holds the camera at a close distance without taking a photo  Then the customer is redirected to the restaurant ordering and payment platform  Scenario 2: A customer cannot order food themselves (even with the help of a waiter)  Given that the customer is seated  And a QR code  And a waiter explains and shows the customer how they can use the QR code to enter the ordering and payment platform  When the customers said that they don’t have a phone  OR  When the phone cannot scan the QR code  Then the staff will take out the menu and order food and drinks for them using their own phone/ ordering paper |
| 1b | I want to be able to see all the food and drinks available (text, image, price) of a restaurant based on the time I arrived. The food will be displayed based on the pre-defined categories set out by the restaurant owners (e.g. alcohol, drinks, starters, main course).  So that I can pick the food and drinks that my friends and I want. | Scenario 1: The customer is picking the food and drinks they want  Given the web-platform  When the customer scrolls the screen horizontally,  Then they can see the food and drink within the same category.  OR  When the customer scrolls the screen vertically  Then they can see the first two food and drink at different categories.  OR  When the customer clicks add an item (+), they will add a food or drink item to the order and they will see a notification (shown for 0.3s) that they have added an item to the order. The total payment amount will also increase accordingly. |
| 1b | I want to be able to proceed from the meal ordering platform to the order summary sections  So that the system knows that I have picked my meals | Scenario 1: The customer is proceeding from the menu ordering platform to the order summary section  Given the food ordering interface  When the customer clicks next OR order summary  Then they will go to the bill summary interface |
| 1c | I want to see the order summary  So I can verify the meals that I will get, the prices of each meal and the total payment amount of the order | Scenario 1: The customer is reviewing the order summary  Given the order summary interface  When the customer clicks next  Then they will go to the payment interface  OR  When the customer clicks back to menu  Then they will be redirected to the food ordering interface |
| 1d | I want to enter my card details  So I can pay for my meals to the restaurant | Scenario 1: The customer is entering their card details  Given the payment portal  When the customer clicks click here to scan card  Then they will be re-directed to the automatic card scanning option and the card number, expiry date and card holder name will be automatically filled in. The customer will then need to type in the security number themselves  OR  When the customer clicks pay by debit or credit card  Then they will see the payment form. They will need to type in the card number, expiry date, security number and card holder name.  OR  When the customer clicks back to menu  Then they will be redirected to the food ordering interface  OR  When the customer clicks order summary  Then they will go back to the bill summary interface  OR  When the customer clicks place order  Then they will be redirected to the payment status page |
| 1e | I want to see the payment status page  So that I can verify if the payment was successful | Scenario 1: the customer has entered incorrect card details  Given the combination of card details is incorrect  When the customer has clicked place order  Then a transaction decline notification will pop up and they will be redirected to the payment portal  OR  Given the combination of card details is correct  When the customer has clicked place order  Then they will be redirect to the successful transaction page then they can exit the interface |
| 1f | I want to cancel my order  So that I can adjust my order | Scenario 1: the customer wants to cancel their order  Given they have successful transaction and have directed to the successful transaction interface  When the customer clicks cancel order  Then the transaction will be refunded and they will be redirected to the food and drinks ordering interface |

1. As a Chef

|  |  |  |
| --- | --- | --- |
| N | User Stories | Acceptance Criteria/ Scenarios |
| 2a | I want to know the order summary  So that I know what food to cook | Scenario 1: the chefs want to see the list of food that they need to cook  Given a tablet  When the chef clicks the food & drinks list interface  Then they can see the list of food that they need to cook. |
| 2b | I want to log into my chef/ waiter account with my email address and password | Scenario 1: a chef logged into their account successful.  Given the login platform in the home page and correct email address and password (posted on the wall of the kitchen)  When the chef presses login  Then they will be redirected to the chef & waiter section.  Scenario 2: a staff logged into their account unsuccessfully.  Given the login platform in the home page and either an incorrect email address or password (posted on the wall of the kitchen)  When the chef presses login  Then they will be redirected to the same with the login failed notification. |

1. As a Waiter

|  |  |  |
| --- | --- | --- |
| N | User Stories | Acceptance Criteria/ Scenarios |
| 3a | I want to know the order summary  So that I know what drinks to serve  AND  I want to be able to dynamically notify the system when the food is cooked  So that only food that is unprepared is presented to me | Scenario 1: the waiters want to see the list of drinks they need to serve  Given a tablet  When the waiter clicks the food & drinks list interface  Then they can see the list of drinks that they need to serve. They can click done when they have served the drinks. The drink item will be greyed and disappear in 3 seconds. Within the 3 seconds, they can click not done if they mistakenly click the not done button. |
| 3b | I want to know the table number for which the meal is served  So that I can serve the meals to the correct table | Scenario1: the waiters want to see the table number of the food and drinks ordered  Given a tablet  When the waiter clicks the food & drinks list interface  Then they can see the table number a food & drink item it corresponds to |
| 3c | I want to log into my chef/ waiter account with my email address and password | Scenario 1: a waiter logged into their account successful.  Given the login platform in the home page and correct email address and password (posted on the wall of a secret bar section)  When the waiter presses login  Then they will be redirected to the chef & waiter section.  Scenario 2: a waiter logged into their account unsuccessfully.  Given the login platform in the home page and either an incorrect email address or password (posted on the wall of a secret bar section)  When the waiter presses login  Then they will be redirected to the same with the login failed notification. |

1. As a Software Company (Staffs)

|  |  |  |
| --- | --- | --- |
| N | User Stories | Acceptance Criteria/ Scenarios |
| 4a | I want to have a database with many tuples of restaurant number, name, address, and email  So that I can send mass posts and emails to advertise the product | Scenario 1: the software company wants to have a database with many tuples of restaurant number, name, address, and email  Given an empty database  When a person types in all the details into the database website by website manually or automatically  Then a database with all the details is created |
| 4b | I want to advertise the products via post and email  So that all the targeted restaurant owners can be notified with my new product | Scenario 1: the software company wants to advertise the product via post and email  Given a database (restaurant number, restaurant name, restaurant address and restaurant email)  When they have composed a post or email  Then they can use the restaurant names and either the addresses or emails to send posts or emails |
| 4c | I want to store the details for each restaurant (restaurant number, restaurant QR code, restaurant weblink, restaurant email (username), restaurant account password, number of tables)  So that I can support business owner’s enquiries quickly by accessing to their business account. | Scenario 1: the software company wants to store the details for each restaurant.  Given the restaurant login details database created with all the aside entities  When the business owner has created an account using the register interface  Then a tuple of that restaurant owner account instance will be added to the restaurant login details database |
| 4d | I want to log into my own employee account with my email address and password | Scenario 1: a staff logged into their account successful.  Given the login platform in the home page and correct email address and password  When the staff presses login  Then they will be redirected to the staff section.  Scenario 2: a staff logged into their account unsuccessfully.  Given the login platform in the home page and either an incorrect email address or password  When the staff presses login  Then they will be redirected to the same with the login failed notification. |

* send QR codes (according to the number of tables of the restaurant) to the restaurant by post after they have completed all the standard information.

1. As a Software Company (Founder)

|  |  |  |
| --- | --- | --- |
| N | User Stories | Acceptance Criteria/ Scenarios |
| 5a | I want to create a home page  So that I can present the functions of the product, the app, the cost, and the way to become a member | - |
| 5b | I want to create and delete staff accounts  So that only working staff will have an account | Scenario 1: the founder wants to create staff account for a newly joining employee  Given the founder admin page  When they creates/ delete a database entry for staff details (employee ID, username, password, name, address, NIN, telephone, email, hourly salary, number of hours worked)  Then an employee account is created/ deleted  Note: for an employee account, the password cannot be changed so the founder can access it (even though the founder can see the password anyway) |
| 5c | I want to see my weekly fee transactions taken for all the registered restaurants  So that I can keep track of the completed fee transactions for all the restaurants | Scenario 1: the founder wants to see all the weekly fee transactions taken for all the registered restaurants  Given the founder platform and all restaurant weekly fee summary  When the founder goes to all restaurant weekly fee summary database page  Then they can see a database with the following entities (restaurant number, week dates, weekly revenue, fee taken, transaction date) |

1. As a Restaurant Owner

|  |  |  |
| --- | --- | --- |
| N | User Stories | Acceptance Criteria/ Scenarios |
| 6a | I want to be advertised with this i-waiter software | See Software Marketing Section |
| 6b | I want to know how I can add/ adjust the menu details (text, picture, price) to the ordering interface at different times (morning, afternoon, evening)  AND  I want the company to add the menu details for me via their emails  OR  I want to have step-by-step guidance to know how to set up my account  So that I can start deploying the app to the restaurant ASAP | Scenario 1: the restaurant owner wants to post up the menu details to the order interface  Given the advertisement post and the web link or instructions to go to the YouTube channel and the add/ adjust menu interface  When the restaurant owner sends the menu document and meals’ photos to the company’s email  Then the company team will upload these details for the restaurant owner  OR  When the restaurant owner goes to the YouTube channel  Then using the guidance, they will start putting the meals they want to sell (text, picture, price) using our add/adjust meal details page. They can decide the time and duration for which the meal will be displayed (morning 9-11am; afternoon 12-5pm; evening 6pm-8pm). If they are stuck or get confused with the platform or encounter a system error, they can find our email at the setting and the add/ adjust menu interface to get help |
| 6c | I want to know how the hi group company manages my financial data  So that I feel safer about how they use my data | Scenario 1: the restaurant owner wants to know how the hi group company manages my financial data  Given the setting tab and the restaurant owner is following the YouTube channel  When they click how my financial data is auto-deleted every 3 weeks  Then they will be given a description how their data is auto-deleted every 3 weeks. |
| 6d | I want to add my card details  So that the software company can transfer the business profit to my bank account | Scenario 1: if the card details are filled in correctly  Given the add card details interface (transfer money to your business account)  When they have filled in all the bank details  Then they will be directed to the start-up cost notification.  Scenario 2: if the card details are filled in incorrectly  Given the add card details interface (transfer money to your business account)  When they have filled in all the bank details  Then they will be given a transaction failed notification. |

# Software Design

## Site Map

## Product Paper Prototype (Done2)

As it will be similar to the digital prototype, all the paper prototypes will be posted in the appendix for product paper prototype with a database system section.

don’t make a promotion website to tell people the value of your app. Sell it via posts only and give private links

main page should just include login and contact details

explain each part of the paper prototype and their significance

version 1 & 2 & 3

filter by gluten free, vegan

auto-suggest

infinite strolling for database

filter, sort, search, autosuggest

## Product Digital Prototype

if screen area touched, visual feedback

visual guidance – 1s

audio feedback for new orders

# Literature Review

Existing mobile ordering and payment platform

* dines.co.uk

<https://www.youtube.com/watch?v=-p-vIe_GlMM>

* tevalis.com
* storeKit.com

# Product Coding

Development Procedures

1. Implementation Phase 1

* document your process
* set up the project
* draw big 4 boxes that spans the full screen
* set up the web database page (front end) so that you can add/ edit/ delete database elements using the web, without directly interacting with the database/ use tailored form
* responsive design to web, tablet and mobile (front end)
* test if mobile data is altered, so is the desktop database
* design two pages for the customer interface
* integrate test cases
* implement payment portal using NetPay
* deploy it with different screen size and see if it looks ok

1. implementation Phase 2

* prioritise and execute the development (restaurant owner page > admin > chef/ waiter page > CEO page)
* continue the software development ensuring that the aforementioned processes are accounted for

## How to code the front end with Django (2020)

* <https://www.linkedin.com/learning/paths/become-a-django-developer?u=26205482>
* becoming a Django developer
* front end
* test driven development
* form
* database - RESTful web APIs (replacing abstract variables (a,b,c) to values in database.
* deployment

## Responsive Design (2015)

– ensure that the web app is displayed accordingly in the mobile phone, tablet and desktop

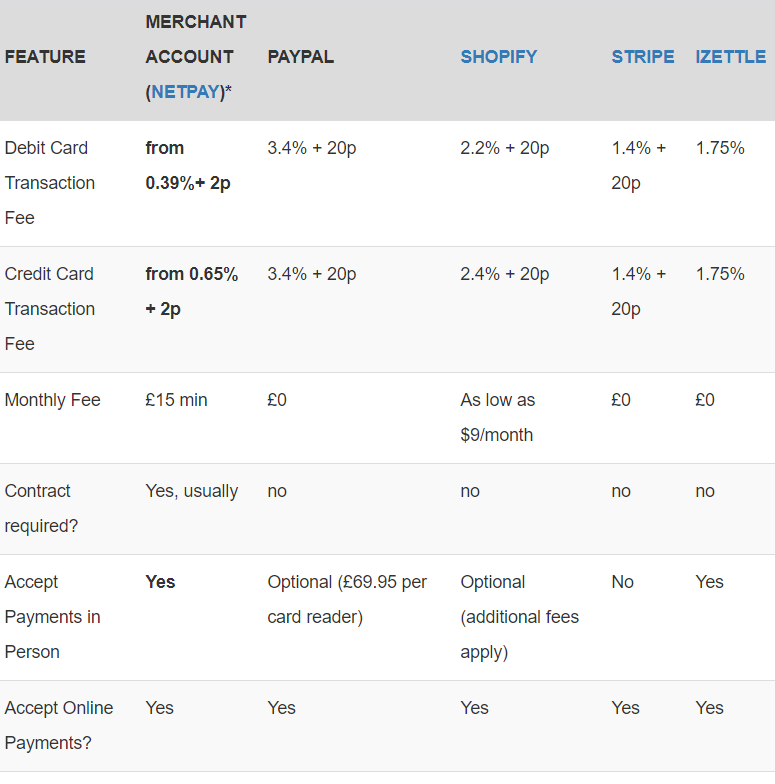
* Customer Interface (Mobile)
* Restaurant Owner Interface (Tablet)
* Chef/ Waiter Interface (Tablet)
* Admin (Desktop)

1. WebLink - [https://www.linkedin.com/learning/creating-a-responsive-web-design/introduction-to-this-course?u=26205482#](https://www.linkedin.com/learning/creating-a-responsive-web-design/introduction-to-this-course?u=26205482)
2. Relevant Sections for the material – responsive web design

* header, main section, atmosphere section, content, navigation, footer content
* font, text styles, heading and page container, logo, button, table, graphics
* nav bar, list items, links, device computability options for nav
* adjustable layout for large and medium screen
* moving navigation for smaller screens, rearrange logo, main section, atmosphere, main text, spacing, footer
* making adjustment for the smallest screens

## Coding Platform Criteria

1. Cost of Online Transaction Fee



1. Infinite Scalability

* web browsing
* database

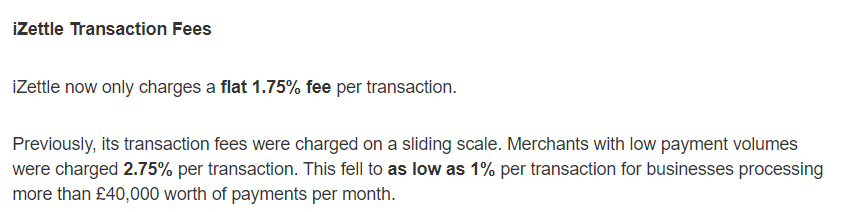
1. Cost of Deployment
2. Cross-Platform (between mobile web and desktop web) – Django

* not mobile app because Apple charges 30% app revenue
* desktop web because we are using apps for chef/waiters & business owner & admin interface
* mobile web because customers will use their phone to order
* Mobile and web can be achieved through Django – responsive display

1. Deployment

* microservices
* outsource art work
* FAQ section for staff to help them know what to do at different situations

1. Database (postgred)



large database that will be updated and rendered frequently

image intensive database web

1. Large volume of text and image on the database
2. 1m users a day -

Staging – git

* any distinct branch can be merged and staged into production

Fully automated deployment

* using a script

User manual

# Software Security

# Evaluations (Ongoing)

* experimental Human Computer Interaction
* ethical approval

## Evaluations for Requirements/ Tests/ Product Paper Prototype

To improve the effectiveness and satisfaction use of the paper prototype, we will perform several evaluation techniques for the paper prototype. In sequential order, I will perform think aloud evaluation, cognitive walkthrough, and interview. The people who have performed the evaluation is my supervisor – Professor Stephen Brewster.

introduce app

Firstly, I will introduce the interviewee the app as a waiter would after a group of customers have seated. I would vaguely describe how the app works because a typical waiter will not explain the app clearly to each group of customers. I would say to her, “This is a restaurant food ordering app. You will need to scan the QR code then you will be able to order food.” I will ask them to use the system as if it is a real mobile app.

Cognitive walkthrough

After the think aloud evaluation, they will reason about their interactions with the paper prototype using cognitive walkthrough, They can explain their understandings of the app and how they walk through the designs to accomplish different goals in the perspective of a restaurant owner, chef, waiter, and customer. For each page, I will ask the interviewee:

After walkthrough, think aloud

what do you think what this page tries to do? What do you like least about this page? Why didn’t you like it? How would you design the interface differently? What do you see now? What are you going to do next?

Think aloud evaluation will be performed first. They will go through each prototype while telling the assessor what they are thinking about while going through each page of the interaction. They will be encouraged to be as vocal as possible. While the user is describing about their views about the app, I will identify and note down potential usability issues. The reason this method is performed first is so that they will go through the prototype for the first time without prior experience. The set of potential instructions and questions I will give are follows. Thank you for participating the evaluation. I will start the recording if this is OK. You will be evaluating a restaurant food ordering app. It would be great if you can comment on the design and what are you trying to get to with the app. So now, I will start the evaluation. For each page, I will repeatedly ask the followings. What do you see now? What are you going to do next?

After that, interview

Finally, I will perform an interview to ask the interviewee what they think about the app. The set of potential questions I will ask are: what do you like most about the mobile app? What do you like least about the mobile app? Would you like the app to be used for restaurants or would you prefer the old way? What do you think is missing in the app? Are there additional features you would like to have in the app? How is the navigation of the app? On the scale of 1 to 5, how would you rate this app? How would you improve the app?

## Evaluations for Product Digital Prototype

The interviewee for this stage of evaluation is my mum and her boyfriend. They cannot comprehend English fluently. That will test whether someone without a high level English level can use the app properly.

## Future Work

create a poster for your project

# Software Launch Strategy

## Personnel Arrangement

Earn £150k each year within 2 years – bilingual graduate job – no experience required – high growth start-up – limited opportunity

Commission Based Employment

Weekly commission payment

Average annual revenue per restaurant for the company is £4,500.

You can take 15% of the profit (90% of the revenue) - £600 per restaurant signup.

If you have acquired 300 restaurants to sign up in 1 years (around 3 restaurants a day), you will get £180,000 each year. It is every year for life (not that particular year) if you can keep up the restaurant signups.

We will first pay you the minimum wage + £300 start-up cost at your country to start off. You will be required to send the manager your progress each day to obtain the money.

Employee Overview

Can fluently speak the first language

Can type the first language

Can speak English adequately

Will stay in their first language country

Sociable

Can type quickly

Can response to phone calls and emails

## Post Marketing

* refer to 5a
* we will have a Chinese and English letter for targeted Chinese and Japanese restaurant because it can be the case that they cannot read English.
* ask restaurant owners for their bank details for business profit transactions
* refer a restaurant owner to get 10% off – £500 off for the first year
* drive growth

## YouTube Channel

* the help section should provides the links for each kind of help.

## Product Pricing

Web Content Accessibility Guidelines (WCAG)

* comply regulation to accommodate disabled people

# Software Legal and Accounting Responsibility

Prior to the launch of the software product, we will appoint a legal representative to ascertain that the software satisfies all legal requirements, e.g. GDPR. Furthermore, we will invite an accounting advisor onboard to ensure adequate company setup.

# Bibliography

VPC (2014) Value Proposition Design: How to Create Products and Services Customers Want, John Wiley & Sons < <https://www.wiley.com/en-gb/Value+Proposition+Design%3A+How+to+Create+Products+and+Services+Customers+Want-p-9781118968055>> [Accessed 19 October 2020]