# Schedule

Phase 1

* project requirement specification & digital prototype (doing)
* evaluation (after finalised digital prototype)

Phase 2

* coding (after evaluation)
* test driven development (during coding)

register page for new restaurant owner

v1 = bullet point v2 = essay v3 = refinement v4 = proofread v5 = final/ ready to publish

p = priority

# Notes

Add weekly progress report page to CEO account

Allow restaurant owner account to add meals. Best way – add many data entries by uploading all the images to create all data entry. Then for each meal section, add details based on menu.

If apple has security system by default – it means only authorised people can access to the phone. Then record bank details. If bank detail page, retrieve phone number, using this to retrieve all bank details and auto fill. If not security system by default, use login

Restaurant no and QR code (1-many) database because there are many tables

Login page (register for new restaurant owner, change password for restaurant owner) change password and forget password for each stakeholder

Delete order complete menu in company staff database

Delete confirm password

Mechanism for cross-password checks – assume the system is logged in by unauthorised personnel

Add supervisor to restaurant admin page

No restaurant username and password to prevent theft from my own employees

Add employee tuple + in CEO database

I want to record the job descriptions for all the employee roles so that I can allocate tasks effectively

Add all the restaurant databases from the employee account to the CEO account so that I cannot log into their employee account and can trace their login activity accurately.

Back button for owner account - restaurant menu detail page

Add performance database to record the number of clients in their database, the weekly profit that they make, number of clients unsub-scripted to our service.

Search something means to filter the result so that only data matches the input will be displayed and you can sort this specific group of data by date to see weekly fee taken

The CEO – weekly transaction date should in the form of YY-MM-DD, like 25

Weekly Progress Report

* report the number of new clients this week
* describe the total projected profit this week. record the statistics weekly to form the long term progress report
* document problems and solutions
* document innovation strategy
* staff should refer to company manual for every data entry. If new action, document

Search function for owner page so that can find the meal they want to change quickly

Ask owner to choose between different food category using buttons, not image in this page

# Argumentation Patterns

General

* argument – logical reasoning (what, why, describe how)
* reference – background sources
* experiment – using results you found

Evaluation

* define a problem/ hypothesis
* define general question
* specific question
* narrow a problem to implementable
* implement it
* evidence of experiment

# Abstract

Motivate

Set Aims  
Describe

Explain results

Contact email

# Project Proposal v3

// what is the idea?

Laser Mate is a £3.75-billion-yearly-profit software empire with the primary goal to enable restaurant customers to order and pay for food and drinks using a mobile phone.

// why the idea works?

The unique feature of the restaurant ordering platform is the lower waitering cost (50\%) and transaction fee (1\%). Restaurants that employ two waiters will attract a saving of half the waitering cost - £16,800 each year. Using this app, restaurant waiters will save around 50\% time and effort as they will no longer need to take, record, and deliver orders, and also give and take payment. Restaurant owners will also save additional workloads on dealing with staff rota, training and supervision and salary payment.

Another prospect of the mobile web comes from the transaction fees. Online web payment (0.39\%+2p per transaction) is more cost-effective than card machine payment (1.75\% per transaction).

// cost of business deployment and ongoing scaling

The cost of business deployment and ongoing scaling is comparatively lower than the revenue potential. The operation of the company is mainly composed of the software, post advertisement and the menu update. Since post advertisement may only take a few days, assuming that each employee can register 15 restaurants a day, we will reach 5500 restaurants (£27 millions) in a year at a low cost. Another advantage of this business model is that we do not need to spend much time to maintain the operation of each restaurant owner after they have signed up to the system - we only need to update their menus and answer their enquiries.

// what is the annual profit estimation?

The projected profit estimation is composed of the service charge and the difference in transaction fee. Upon taking 1\% service charge per customer transaction, we will obtain £3,000 for each £300,000 restaurant sit-in annual revenue. The cost, £3,000, is reasonable compared to the waitering cost of around £16,800. Furthermore, the fact that online web transaction is 1\% lower than card machine transaction means that our business will take another 1\% revenue. Accounting this 1\% service charge with the difference in transaction cost (1\%), we will have 2\% revenue for each restaurant (£6,000). Consequently, assuming that we will earn £5,000 for each restaurant (due to tax and other negligible costs), given that there are around 1.5 million restaurants in the EU and U.S, it is estimated that with 50\% market penetration, we will have a profit of £3.75 billion per year (750,000 restaurants x £5,000).

# Final Software Product – care after coding

* link of software product demo
* diagrams for final product

# Business Executive Blueprint v1 p4

## Phase 1 - Pre-Launch Groundwork

### Software Security & Payment Portal & Remaining Software Components

Crowdsourcing the service so that the company will not have legal liability in the case of software security vulnerability. The security team can also fix the problem when a security breach occurs.

Who will you adapt for payment portal, why outsource?

### Legal and Accounting Responsibilities

Should seek professional for comprehensive advice, the list is not exhaustive as it is only some personal research

<https://www.accountingweb.com/practice/clients/where-do-accountants-fit-in-with-startups>

Obtain advice regarding company business name and register a trademark. Copy a graphic design in Uplabs.com. Their licence allows me to use their designs for a commercial platform that sells products and services.

https://www.uplabs.com/posts/food-delivery-app-design-ui

Identify the company type.

<https://www.netlawman.co.uk/ia/types-uk-company>

Consider between public limited company (PLC), private company limited by guarantee, private company limited by shares/ private limited company (LTD), and private unlimited company and other special types of limited company.

PLC - Whether sell shares to the public via the stock market to raise capital. Need tow directors and a company secretary.

Guarantee – in the event that the company is subject to bankruptcy, the members of the company (guarantors) do not subject to the liability and will only require to pay £1.

Shares – In the event that the company is subject to bankruptcy, the shareholders are only liable to the reserves of the company - their own personal assets will be only seized to repay the debts.

Private Unlimited Company – the shareholders are liable to repay the debt of the company in the case of bankruptcy. Do not require to publicise their annual financial statements. Businesses can maintain a level of secrecy about their financial status.

Others – inapplicable

Set up legal documents, such as terms and conditions, tax, and organisational measures. Pay for Insurance to limit liability. Employment contract and legal protection. Recruitment protocols

https://www.termsfeed.com/blog/5-reasons-need-terms-conditions/

T&C – prevent abuses – spamming users, harmful languages, user termination clauses, limit liability for errors. Set the governing law – state that the company is registered in the UK

Tax – comply with tax obligations

Organisational - the system involves large-scale systematic monitoring and processing of financial transaction activities. We must develop and implement a robust protocol for the protection of data subjects in terms of consent and cyber security. We cannot process transaction data for users who do not consent to use our app. We will provide adequate safeguard to minimise system security vulnerability to actively prevent financial data leakage and malicious hacking.

Explore options for the source of finance

Whether IPO is an option for the business idea. The larger the capital expenses we can have, the wider the scope of clients we can reach.

The more diverse our system will be

The more user base we can get, increase popularity

Explore related opportunities

Venture Capitalist Share Buy-Out

IPO – Initial Public Offering

Self-Fund Entrepreneurship

### Software Deployment & Testing

Deploy app using AWS

Run and fix all test cases

Check that every parts work correctly by acting like different shareholders and go through all the testing scenarios manually (Section 3.1 platform error testing)

Optimise and evaluate your system performance, not lagging with mass data entry and retrieval – stress test

Response time, loading time

### User Support Manuel via YouTube Tutorial Channel

* record videos on user support (introduce and promote our app & describe the signup and logistics , how to change meals online
* write the headings here – contents in last section

## Phase 2 – Software Product Marketing & Commercialisation

Topic sentence

* post –
* YouTube channels
* justify why not email, social media marketing

Justification

* post – proofread letter content
* cost - 50p colour printing, paper, envelope, stamp postal cost, the number of posts (divided by phases)
* print 3x more QR codes menu because owners may lost it

Implementation

* draft the email and post the picture here – product pricing
* Company staff sends business posts to mass audience (mail template) – a city at a time
* business owner receives the mail, read it and want to join
* they type in the link into YouTube and watch our product demo videos
* if they are interested, they will confirm their legal consent (T&C) and provide register data, such as their name, restaurant weblink, personal telephone contact, username, password, number of tables, business bank card details (card, type, card number, expire date, security number, card holder name), menu upload option if no website.
* the system will automatically generate a confirmation email with instruction of registration process.
* the business will register these data into the database.
* Use the restaurant website to find the menu and add all the items
* The company employee will send the tablets and stands and QR codes
* Owner start using the software
* user referral us to new clients and benefit from discount code

Weekly Progress Report

I want to oversee the number of new clients I have added and removed each week so that I can compare and track my progress on client number; I want to understand why clients leaves the company so that we can improve upon the existing service. I want to describe the total projected profit each week so that I can aggregate the profit summary and form a long-term progress report. I want to document new problems and solutions not in the staff manual so that we can develop a central documentation for all the staff and CEO to follow. I want to submit a report to the CEO weekly regarding new innovative suggestions so that the company can improve its products and services. I want to refer to company staff manual every time I do something so that I can strictly follow company executive procedures without missing some important steps and can improve upon the existing documentation

## Phase 3 – Business Scaling

### Further Legal and Accounting Consultations

Hire more salespersons and expand the geographical territory (English speaking countries because the platform is written in English) – what countries are viable

More countries

Repeat phase 2-3

### Business Strategic Consultations

Business operations oversea

Cultural and business operation difference

Marketing research for demand and supply

### Human Resource Organisations

Interview and survey local people to investigate whether % similar software system exists in restaurants

Find job sites for description templates

Write descriptions here

Distributed workload for different people across location

### Business Executions

Follow phase 2 – software product marketing and commercialisation

# Design Principles v1 p2 p5 (Doing)

<https://razorware.wordpress.com/2012/01/04/task-3-the-fundamental-principles-of-hci/>

GU HCI course notes

Checklist of design principle to ensure that every page adhere to that

Online Heuristic evaluation

## Captivating Design Principles

// What is the principle

image over text

Images are engaging way of representation. It provides more visual impact. It is a entirely different experience having a image-intensive and text-intensive app. Comfort and the appreciate of good designs

// example

In our customer meal ordering page, we use circles rather than rectangles for the image frame. We display four different types of food in the screen and the minimal textual descriptions for information understanding. The user will not feel overwhelming with the amount of text and image on the screen and does feel ease of use through the payment process.

Information Arrangement

We do not cramp as much information as possible in each screen. We consider the spacing and comfortability of the interface. We adapted the colour palette [?] and ensure that all the colours are complementary with each other pleasantly. In our CEO interface page, all the different colours in the database rectangle headings are according to the colour palette

We consider the information position, font size, colour and style to ensure a consistent and predictive information hierarchy structure. We use both professional and warmth colour to contrast visual effects and enhance information memory. For example, for the company staff interface, we use competence colour at the top and the back of the rest of the page and warmth colours for the database rectangular headings

## Device Responsive Design

design to account for all screen sizes and the specific types of devices (phone, laptop and phone)

We consider the devices each interface will be used.

The customer interface will use the mobile phone because almost everyone has a phone in their pocket.

The chef & waiter and the owner interface will use a tablet. We don’t want to place a keyboard on a table because it will damage the device. We want to use a tablet stand so that the restaurant staff can see it properly. The restaurant owner should use a tablet so that they can use the tablets the chef and waiter uses to make changes (for saving cost).

The CEO and employee platform should be a laptop interface. Laptop is portable and it is easier to work with a laptop than a tablet which has a smaller screen size.

## Dynamic Information Management

Our databases adapt a click-to-change approach. Traditionally, to alter information in the database, you must click an add button and fill in a form to change it. To enable for fast and easy change in this data-driven system, we customise our database so that users can change the database contents by just clicking the data.

## Minimal Effort and Completion Time Design

Without compromising the software usability, ensure that every user action takes the least pages and time to complete. Reduce redundant details

they need to do the least things to do something with a computing system

Fitts’ law – consider the spacing of different software components and their sizes to achieve a optimal task completion time

minimal user inputs (menu details input all by company staff, they can change the menu content themselves or by contacting us; so that the customer has zero or minimal interaction with the software

## Ethical Design

We rigorously follow the ethical principles set out by the University to protect the wellbeing and the rights of our evaluation participants and app users. You can see that in our ethical consent form for our second phase semi-structured interview evaluation.

We also protect the fairness of our software users through adequate system feedback mechanism in our payment portal. In our customer interface, we have the cancel order functionality that allows customers to abort the transactions they approved. This is to ensure that we do not maximise our sales by exploiting user’s unfamiliarity with the platform.

Furthermore, for every software users, we obtained informed consent through our terms and conditions and legal policies to set out mutual agreement through our liability limiting statements.

Our company also abide to strict regulatory requirements to ensure the duty of care to our employees. These include health and safety practice to ensure that our staff are protected under long term screen exposure and the long number of working hours.

## Multimodal Interaction

The chef and waiter interface will have a sound notification every time a customer successfully pay for their meals. Restaurant staff cannot possibly look at the meals all the time. This system ensures that only when there is a new order will the staff look at the interface.

## Inclusive Design

Our mobile app takes into account users with specific difficulties, such as colour blind, dyslexia, eyesight problems and mental and physical disability. Over 0.038% of the world population [?] suffers from colour blind. To overcome this barrier, we ensure that we follow a checklist of colour-blind design criteria online [?], all our customer interface designs are high contrast, particularly for essential information that must be standout.

<https://www.colourblindawareness.org/colour-blindness/>

<https://www.designmantic.com/community/website-design-guide-color-blind.php>

We also incorporate simple English word choices for all the interfaces so that all people, regardless if they are linguistically or mentally disadvantage, can still use the interface.

All our interface components consistently accommodate for eyesight issue. All the texts are at least 16px [?]. Secondary texts are about 2 sizes smaller than the primary ones.

<https://learnui.design/blog/mobile-desktop-website-font-size-guidelines.html>

## System Feedback Mechanism

Our app also provides system feedback for

## Design for Automation & Infinity

* searching to find information that is the same as the input; list possible options after each character is entered so that you know the potential words to type in, less likely for the account user to type in incorrect search terms – auto-suggestion
* multi-selection from suggestion list so that can compare different values to help analyse further problems
* infinity scrolling not pagination
* multi-selection

## Design for Hacking

* design to assume that the system is logged by unauthorised personnel
* passwords are hidden
* cross password verification
* tutorials when this happens

## Worst-Case Scenario Design

* think what is the worst things that can happen
* what lawsuits can you possibly can

## Design for All Eventuality

* think about all the possible things that can happen, not just the obvious best or worse things
* think what all client need, not just what the majority needs, minority as well

## Child User Design

* design and think how to design so that every children will know how to use your system

## Collaborative Development

Outsourcing

* only work in areas of competence
* you don’t know security, payment, law and account, outsource them
* get professional advice

# Software Requirements Specification p6.5

## User Stories v2

// Go through each digital prototype and see if requirement is missing

// what is user stories pattern

The user stories software design pattern [?] identifies, for each stakeholder, what they want to do with the app and the reasons for them. The user stories expresses the software requirement using a consistent structure - as a [role], I want to [action], so that [benefit].

// how it is derived

We did not include the initial process how the software specification is developed because it is highly repetitive. However, you can find out the full design documentation on the wiki in GitLab, under software requirement documentation.

### As a Restaurant Customers

I want to access the menu online or at the door, so that I can pick the restaurant I want to go most; I can decide on the food and drinks to order before going into the restaurant; I can compare the restaurants in terms of their food, price, discount, customer service and location. I want to see all restaurant discounts from text and emails so that I can go to a restaurant that I may not normally go because they are too expensive. I want to see the exterior design, specialist food, type of food (vegan, vegetarian, gluten free, Japanese) so that I can pick the restaurant I want to go most based on these criteria. I want to get recommendations from celebrities, YouTubers, critics, friends, and Facebook and Instagram advertisement so that I can be inspired with new types of food across the world. I want to reserve a table before going to the restaurant so that I will not go to a restaurant that is full at the time. I want to know approximately when the meal is cooked so that I can choose not to go to the restaurant if I need to wait too long. I want to order meals when I am queueing outside for a table, so that the order can come along quickly. I want to order meals straight after I sit down in the restaurant, so that I can get food as quick as possible. I want to see food and drinks in text (meal name, description, price) and images, instead of just text, so that I have an idea what the meal looks like before ordering it (especially for foreign meals); I can see if the meal is too big, OK, or too small for me; I may have eyesight problems, colour blind, or dyslexia. I want the menu to be presented clearly, so that I find it easier to pick the food that I want. I want to see popular meals first so that I get some meal recommendation before deciding my own order. I want to know what the options for tailoring meals are (e.g. extra salt and pepper), so that I can try some new way of eating the same meal. I want to see all the meals I have ordered to make sure that these are the meals that I want to order, and I made no mistakes with my order. I want to tell the chef whether I want the food to come together or separately before making the order so that they can serve the food hot at the time they serve it. I want to see the overall price of the order before getting the bills so that I don’t over, or underspent. I want to have the option to pay by card when the card machine is unavailable. I want to give the restaurant staff a tip so that they are rewarded for their effort. I want to find similar restaurants so that I can try out the restaurants that serve similar food. I want to look at all the restaurants I have been in the past so that I know the types of restaurant I like and don’t like most.

### As a Restaurant Chefs

I want to see digital orders so that it is faster to see what orders need to be cooked; it is less likely for me to cook the wrong food or with the wrong quantity. I want to notify the waiter that the food is ready when they are not nearly so that the waiter knows that they need to serve a meal when they don’t notice it. I want to see all the meals that was ordered so that when the customer says that their meal is wrong, I can see the order history and the meals to cook for them. I want to have a seamless staff rota system so that they know when their shifts are as soon as possible.

### As a Restaurant Owners

I want to develop my restaurant website using the Laser Mate platform so that I can tailor the website and change the contents (menu, contact info, opening hours) quickly. I want to advertise the restaurant through the Laser Mate advertisement platform so that I can save additional costs when I switch the platform (from OpenTable). I want to have a staff rota system so that I can organise and distribute the roles to my staff digitally. I want to have a salary portal so that I can automatically pay my staff their salaries and, oversee, record and adjust the data. I want to have a customer analytics page so that I can see the popular food and drink and those that should be removed from the menu. I want to get advice and inspirations on food and drink recipes and cookery techniques so that my chefs can improve their cooking skills. I want to take online certified business growth and administration courses via Laser Mate’s YouTube channel so that I know how to better manage the restaurant business logistically and systematically. I want my staff (chef, waiter) to see Laser Mate’s induction tutorials so that they understand the operation of the app. I want to use Laser Mate’s low-cost accounting and legal services so that I don’t need to find my own consultant and I can get better advice on restaurant administration. I want to use Laser Mate’s insurance service so that I don’t need to find my own insurance company – it is also easier to provide documentation and get a lower price for the same service. I want to get recommendation and training for restaurant start-up and on dealing with emergency situations, such as breakage in interior design, furniture, repairing kitchen appliances and plumbing. I want to be able to contact the Laser Mate team so that they can change the menu details for me or answer some questions that are not posted online. I want to have a semi-automated emailing function for organising and scheduling food delivery so that I can email the food suppliers for food delivery (the item they need the stock, the time before the food must be delivered). I want to have a printer friendly version of the menu so that so that I can print out paper menus to serve customers who can’t use the Laser Mate platform. I want to have additional menu QR codes so that the customers can still use Laser Mate even when some QR codes are lost. I want to have different menus and costs at different times so that the customers can order different meals based on the time (morning, afternoon, evening). I want to use a mobile ordering system so that the restaurant can abide to the covid-19 rules by enforcing social distancing rules between the customers and the waiters. I want to have a customer complaint page so that I can improve my products and services based on their feedback.

### As a Laser Mate Employee

I want to have a login system to ask me for my email address and my password to get into the company employee platform so that unauthorised people cannot access to my employee account. I want to have a second login system to ask for my phone number and my second password so that the system checks whether I am happy with the email address and the phone number I currently have. It also prevents the situation where other company can log into the staff account if the employee chooses the same password for other companies. I want to then have a phone text message to ask me to input the text code in my phone to the login system so that I can be alerted if another person logs into my account. If I found that an unauthorised person is logging into my account, I can immediately obtain the text message and notify the incident to the company CEO. I want to get access to my account only if the 3-step login is successful at first attempt to prevent others from trying the login details. I want to add new client (restaurant owners) details to the restaurant database so that they can use the ordering system. I want to record the restaurant number so that I will not obtain the wrong information when referring to another restaurant with identical name. I want to record the restaurant name and address so that the customer interface can show this information to the customer to verify that the menu they are looking at is referring to the restaurant they are in. I want to record the name for the restaurant owner so that I can refer to the client by name when I get their phone call and can verify their identity. I want to record the restaurant email so that I can contact them (for advertisement, responding to their emails) by email if they cannot respond by telephone. I want to record the owner phone number so that I can contact them urgently when their system is down. I want to record all the restaurant QR code menus so that I can resend the QR code menus to the restaurant if they have lost it for a particular table number. I want to record the restaurant weblink so that I can generate the QR codes based on these weblinks. I want to record the restaurant login username and password so that I can access and change their restaurant menu (the time it serves, the meal (photo, price, short and longer descriptions, dish category, extras, allergy information and whether they are available for today); restaurant information (restaurant name, restaurant address, restaurant phone number, restaurant owner name, restaurant account password), restaurant staff account details (staff account username, staff account password); financial information (card type, card number, expire date, security number, card holder name). We will now move onto the weekly progress report page. I want to oversee the number of new clients I have added and removed each week so that I can compare and track my progress on client number; I want to understand why clients leaves the company so that we can improve upon the existing service. I want to describe the total projected profit each week so that I can aggregate the profit summary and form a long-term progress report. I want to document new problems and solutions not in the staff manual so that we can develop a central documentation for all the staff and CEO to follow. I want to submit a report to the CEO weekly regarding new innovative suggestions so that the company can improve its products and services. I want to refer to company staff manual every time I do something so that I can strictly follow company executive procedures without missing some important steps and can improve upon the existing documentation.

### As a Laser Mate CEO

We will now refer to the employee database. I want to add a new employee tuple so that I can record company data. I want to allow myself to edit all the information in the database by clicking the data so that I can make changes easily. I want to construct the database so that each company employee can only edit and see the data they registered within the database. This is to prevent malicious employee to reveal all the client data to third parties – they can only reveal the details for the clients they have added. I want to record the names for all the company employees so that I can remember what they call, and I can find each employee data easily. I want to record and oversee the employee login username and password so that if they leave the company without company notice, I can log into their account and change the employee who can edit the restaurant details. I want to be able to change the password for each company employee so that if they leave the company, they cannot log into the system again. I want to ask for a second login details for my CEO account once my first set of username and password are correct so that the hacker will need to enter a second combination of login details before they can access and change the data in the system. I want to have a second login system that again asks for my email address and second password (when actually the system demands for my telephone number under the false email address title) so that I can confuse the hacker to enter the wrong information. In the login system, I want to state that the second password should be 8 characters long, have at least one capital letter and one number when the actual password violates some of these criteria so that I can further confuse the hacker to enter the wrong password. I want to setup the second login system so that it will give me a phone alert that asks for my approval before the hacker can log into the system – therefore, they can only access the database when they get the textual approval from my phone. I want to setup a text messaging system that every time I scroll through another data entry or every time, I edit an entry, I will get a text message alert so that when hackers are viewing or editing my data without my acknowledgement, I will get a security alert straight away. I want to setup the system so that the CEO and the company employee accounts are frozen when I send a specified text code in my phone or via my email so that if either the CEO or the company employee accounts are hacked, the hacker is forced to logout and cannot view or edit the information. I want to have this multiple security measure so that when the hacker changes some parts of my security code, other parts of the security code will hopefully be active. My system will be compromised only when the hacker knows my email address, first password, phone number, second password, steal my phone, know my phone security code, reply to the text message, make sure that I don’t know that the security is compromised every time they access to the new database tuples and don’t allow me to freeze the CEO and employee accounts via phone or email. I want to get an email notification if an employee enters the wrong login details twice so that I can contact them to verify if they entered the incorrect login information twice. I want to store employee NIN number so that I can perform employee tax duty. I want to record employee telephone number so that I can contact them individually if I need to. I want to record the employee role so that I know their job descriptions. I want to record the job descriptions for all the employee roles so that I can organise and allocate tasks effectively. I want to record the employee hourly salary so that I can adjust their salary accordingly and help calculate their weekly working hours. I want to record the employee weekly working hours so that I can calculate their weekly salary and transfer them the money weekly. We will now move onto the restaurant weekly transaction page. I want to record the restaurant number so that I can cross-reference other restaurant data using the restaurant number. I want to record the weekly transaction date so that I can first search a specific restaurant number and sort their weekly transaction date so that I can see the weekly fee taken sequentially by date. I want to record the transaction date so that I can cross-check the full transaction details on the bank app with the transaction date. I want to record the weekly transaction status (success, failed, pending) so that I can quickly repeat the payment transaction and resolve any payment problems. I want to have the aggregated database from all the company employee accounts so that I can take on their job roles if they are sick; I can track the entire company activity for managing personnel. I want to have a manager section for each restaurant tuple so that only the allocated staff and the CEO can see the restaurant data. If the manager entry is changed, the previous allocated staff can no longer see this data entry and the only new manager, and the CEO can see it. I want to have a performance database so that I can track, for each company employee, the number of clients they signed up, the weekly profit that they help the company make, the number of clients who unsub-scripted to our service. I want to set up a telephone verification – the person who accesses the account must enter the randomised code that is sent to my phone to the database platform before they can access to the CEO account - so that I can know when someone log into my account without my acknowledgement. I want to create a new employee tuple so that when a new employee joins the company, I can add their information into the database. I want to allow for data sorting for all data tuples by clicking the database column so that I can easily find the same database entries.

## MOSCOW p6.6

Security is should have because we need to hire a security team to do that

Payment is should have because we need to ask for the payment company for it

# Software Development Process – ongoing

https://en.wikipedia.org/wiki/Software\_quality\_assurance

<https://standards.ieee.org/standard/24748-3-2020.html>

Summarise all methods

Business Models

https://www.investopedia.com/terms/b/businessmodel.asp

Value Proposition Canvas

<https://www.b2binternational.com/research/methods/faq/what-is-the-value-proposition-canvas/>

User Stories

<https://www.visual-paradigm.com/guide/agile-software-development/what-is-user-story/>

MOSCOW method

We want to showcase the recommended approach to develop the software as a whole. The point of this section is to document the algorithmic thinking that everyone can apply to develop the perfect software at first attempt with the shortest time possible. A world-class blueprint that produces the mastermind of designers, strategists, readers and 10x programmers – that those without this can never rival.

## Phase 1 – Product Conceptualisation, Prototyping, Evaluations and Testing

We want to showcase the recommended approach to develop the software as a whole. The point of this section is to document the algorithmic thinking that everyone can apply to develop the perfect software at first attempt with the shortest time possible. A world-class blueprint that produces the mastermind of designers, strategists, readers and 10x programmers – that those without this can never rival.

Make an overall plan with prioritisation from start to end

For each step, list all the key points to express in bullet points until the end of the plan

Write the first draft, in a normal way of essay writing, up to the point of coding

Write the second draft, in a normal way of essay writing, up to the point of coding. This is to ensure all the requirements are met before coding so that you don’t need to change the code in the future

Code and refine all sections

First, we write out the full systematic requirement analytics processes (Figure?) how the full restaurant business operation occurs, for the different stakeholders. After having a list of goals, we think about and write how software can better improve the experience. Once a table that denotes the goals and the software features for different stakeholders is written, we develop the paper prototype (see appendix) using the software components set out in the requirement statement. While writing the paper prototype, we exclude unimportant features so that we only write the minimal design. We now forget and set aside all these design inspirations and draft out another requirement statement, without referring to another notes. We want to use a different method, namely, the Value Proposition Canvas model (VPC) [?] (Figure X). This is to develop a second, better plan based on an established understanding. The VPC brainstorms the software ideas by identifying the customer profile (their gains, pains, jobs), and subsequently the value proposition (gain creators, pain relievers, product and services).

Restaurant Customer

|  |  |
| --- | --- |
| Goals (things that they will do step-by-step) | Software Features (how software can achieve it) |
|  |  |

Figure X

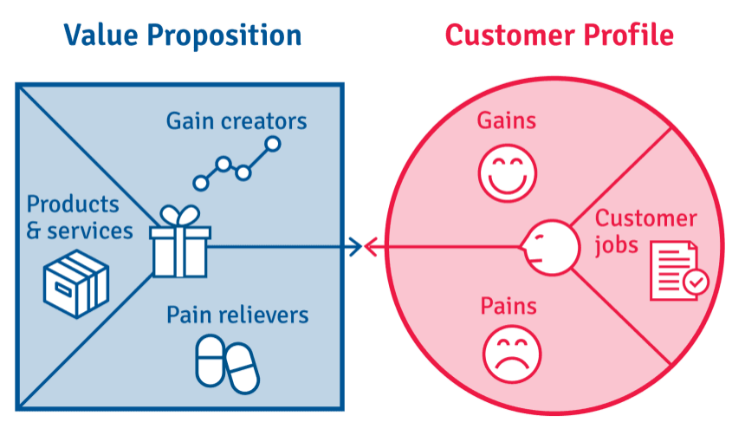
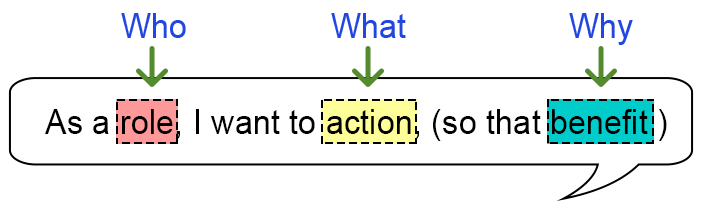


Figure X

Based on the two requirement statements and the paper prototype that are derived under different models and understandings,

we then create the minimal digital prototype (see appendix) using Adobe XD. The process is to gather and graphically place all software components logically

rewrite the requirements using the user stories [?] (Figure). The point to repeat the same process with different methods is to collect as many requirements as possible for future work. The user stories can now act as a communicator through which any other software developers can checklist the software components within the scope of the project, with the underlying reasons of importance. Based on the user stories, we develop



Write the bullet points then the passage

===

After that, using the (4) MOSCOW method [?], we categorise the software components based on the level of priority each feature should be deployed. Lower priority will be our future work. The objective of this prioritisation approach is to ensure that we first develop a minimum working product that our clients can use. Now, having a list of high-priority features, we then write out the corresponding (4) test cases with acceptance criteria under the test-driven development approach so that we develop a contract which states all the test cases for which their acceptance tests must pass for a minimum viable product.

After having all the software specifications set out in a contract, we then write out the overall (5) paper designs on paper for all the software components that are determined to be the highest priority. We will then draft out some (6) survey questions using Google Form, which will then be used to conduct the (7) semi-structured interviews. These interviews will be performed with my project supervisor and my family. We will also take some design guidance from an (8) online heuristic evaluation [?]. Once all the requirements and suggestions are collected, we develop a (8) digital wireframe using Adobe XD. We will perform additional evaluations, by first designing another version of (9) Google Form survey, such as (10) several semi-structure interviews, again with my project supervisor, my friends and family. Finally, we will (9) rewrite the project requirement specification and finalise the (10) digital wireframe and (11) the acceptance test criteria.

## Phase 2 – Software Coding, Programming Documentations and Testing

1. Platform Considerations

* version control (GitLab)
* web front-end (bootstrap, Django)
* database (PostgreSQL – scalability)
* test suites
* Security
* software deployment

## Phase 3 – Software Deployment, Evaluation and Testing

# Software Coding Manual p7

Web link

## Phase 1 – Pre-Programming Strategy

Justifications – above is the tricks – why use that platform

### Platform Considerations

* version control (GitLab)
* web front-end (bootstrap, Django)
* database (PostgreSQL – scalability)
* test suites
* Security
* software deployment

Database Requirements (PostgreSQL)

* High Traffics (50 million users per day)
* High volume of photo and text update and retrieval, bank transaction
* High speed

Framework Documentation and Support

* LinkedIn Learning (Intensive documentation and consider Ease of Development)
* Used by Similar Multi-Billion Apps such as Instagram

Ease of Development

- Bootstrap Studio – design webpages without coding then copy and paste the auto-generated code to Django

Security

* Django in-built security

Cost & Reliability of Coding Platform

* Development and deployment
* AWS

Cross-Platform – responsive designs

* Between mobile, tablet and desktop web
* Tablet (chef/waiters & business owner & admin interface)
* Mobile (customer)

Testing Suite

* Spring Boot

Evaluation

- Google Form

### Overall Coding Workflow

1. Initial Mockup

* 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. Development

* 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
* don’t program the payment portal and the security protocol before having a consultation with experts

### Coding Tutorials & Documentation Searching

**Responsive Design (2015)**

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

1. 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

## Phase 2 – Coding Executions and Documentations

### p8 (actual coding and testing)

### Programming Principles

### Coding Templates

Reduce image size

# Evaluation Techniques

<https://software.ac.uk/sites/default/files/SSI-SoftwareEvaluationCriteria.pdf>

<https://software.ac.uk/sites/default/files/SSI-SoftwareEvaluationTutorial.pdf>

more web link

## Phase 1 – Paper Prototype Evaluations p3

### Literature Review

* understand what other people have done
* limitation and how viewpoint differ
* tie to your project

dines

Since it is a fairly new business idea, our literature review indicates that there are limited existing designs for evaluation. We found some representable and similar software designs – Dines and Starbucks. Our software

However, their customer order interface is discouraging for use, due to the frustration felt by the users to navigate through enormous list of data (Figure 1), and the time-consuming factor to download the platform via an App Store.

### Semi-Structured Interviews with Questionnaires

1. Supervisor

// what you learnt and will do differently

The first evaluation with my supervisor was not effective but worth-while. I first drafted a script I just came up with 5 generic questions and apply it flexibly in every design. Although the supervisor provided constructive feedbacks, the design itself contains too much errors. I should have waited until I have a more throughout plan, however, I have some experience how a semi-structured interview work. The interview was a positive experience because I am now able to think with a larger scope before the next evaluation trial. Should refer to existing evaluation methods

1. Family

I also conducted the evaluation using a similar approach with my family.

## Phase 2 – Digital Wireframe Evaluations p6

### Subjective Evaluations

* Evaluate the wireframe by going through the software parts yourself as if you are a app user. What process went wrong, how to improve existing presentation. You want to make your design as perfect as possible before evaluating your design with other people who will care less about the prototype than yourself.
* Go through existing documentations – it is easy to make a mistake at first attempt, it is important to go through your dissertation again and check for errors – business executive blueprint, design principles, software requirement specifications - to make sure that every software component makes sense and flawless in your own prospective. Especially for design principles.

### Online Heuristic Evaluations

* It is an evaluation techniques in which I go through a list of design criteria and check whether the system adhere to them. This is to further ensure that the design contains less defects before evaluating it with the supervisor
* Login security criteria

### Ethical Form

http://dcs.gla.ac.uk/ethics/assessment-form.pdf

* secure the wellbeing and right of the participants - state at the start of the evaluation that they can withdraw from evaluation process if they want to
* informed consent – terms and conditions, legal policies, liability limiting statement, system notification on payment, security, enough information for the participants to make a reasonable choice, opportunity to ask questions, adequate time for consideration; voluntary: no coercion, manipulation or rational persuasion, written consent; no harm and risks related to the participant ; university ethical approval
* enough information for the participants to make a reasonable choice, opportunity to ask questions, adequate time for consideration; voluntary: no coercion, manipulation or rational persuasion, written consent; no harm and risks related to the participant ; university ethical approval
* maintain participant privacy (all data is kept secret)
* prevent unauthorized access to personal data through robust security protocols,

### Semi-Structured Interviews with Questionnaires

https://www.quirkos.com/blog/post/semi-structured-interview-guide-qualitative-interviews

The second attempt at evaluation is more constructive, mainly because I went through the dissertation again to make sure that each software parts are logical and adhered to the business executive blueprint, design principles, software requirement specifications stated above. I have conducted an interview with my family and friends first to make sure that the designs makes sense to them. Refine my evaluation goals and questioning approach. Check some internet resources. Draft the evaluation procedures with google form and rehearse in my mind the full interview process.

1. Supervisor
2. Family
3. Friends

## Phase 3 – Final Product Evaluations

### Semi-Structured Interviews with Questionnaires

1. Supervisor
2. Family
3. Friends

# Software Testing p8 (document each testing examples) p10 (run all tests)

<https://www.atlassian.com/continuous-delivery/software-testing/types-of-software-testing>

some one example how testing is done for each section

## Business Requirement Testing

– Functional Testing

* Business requirement met

## User Requirement Testing

* End-to-end testing
* Replicate user behaviours

## Error Testing

* Methods, functions and class testing
* Unit test

## Software Feature Testing

* Smoke testing
* Software features and functionalities work

## Interface and Service Integration Testing

* Integration
* Modules or services used by the application work well together

## Performance Testing

* System response time and loading speed under different data volumes

Optimise and evaluate your system performance, not lagging with mass data entry and retrieval – stress test

Response time, loading time

# Software Deployment p9

Web link

What is the choice of platform?

How to do it – the weblink and your brief descriptions

# Support and Help Page

Document potential issues and solutions so that employees can follow

Reduce enquiry to CEO

## User Support Manuel via YouTube Tutorial Channel p11

Headings and Contents

## Company Employee Execution Manuel

Device

Headings and contents

All possible problems

How to answer enquiries from customer and restaurant owners

How to do things properly

Document process and improvement – trouble-shooters

As part of staff training

Document why good and bad

# Conclusion

# Bibliography

Business Models

https://www.investopedia.com/terms/b/businessmodel.asp

Value Proposition Canvas

<https://www.b2binternational.com/research/methods/faq/what-is-the-value-proposition-canvas/>

User Stories

<https://www.visual-paradigm.com/guide/agile-software-development/what-is-user-story/>

MOSCOW method

IEEE International Standard – System and Software Engineering Life-Cycle Management https://standards.ieee.org/standard/24748-3-2020.html

# Appendix

Digital Prototype

Software Coding Templates Documentations

Software Testing Templates Documentations

Evaluations

Systematic Requirements Analysis

Value Proposition Canvas

Paper Prototype