

Project Management Plan

Voucher_Service

E-voucher application development using the incremental method

V1.1



Team: T16_01_Incremental

2. Executive Summary

Voucher_Service is a web-based voucher application that has been developed as a means to provide additional end-of-year bonuses for MYD employees in the form of vouchers which can be exchanged for goods and services from a variety of surrounding small businesses. This will help build employee satisfaction by rewarding staff for MYD's strong year. Voucher_Service will also support the participating small businesses surrounding MYD that have struggled due to the COVID-19 pandemic, strengthening their relationships with MYD, and encouraging future collaboration. The initial development of the application will demonstrate the viability of Voucher_Service, which if successful, could be opened to the public after further development. This could increase MYD's revenue through commissions on voucher sales.

The current project follows the incremental methodology, delivering the project in two releases over one month. The first release, delivered 7 May 2021, implements the main functionality of user registration, sign in, and voucher booking. The final release, delivered 24 May 2021, adds email confirmations for various stages of the voucher booking process, and allows users to modify their details.

The project budget is \$0, as the project is being implemented by a team of University of Melbourne students. The team of six has a project manager, business owner (representing MYD), one technical specialist, a UX expert and two web developers. While they are not paid for the development, the project team benefits by gaining experience in software project management.

A key risk for the project is that estimates of student availability may be lower than estimated, resulting in unimplemented features. Accordingly, progress will be closely monitored against the project schedule.

The technology stack for this project is React and Firebase. These were chosen for their rich feature set, ease of use, and simple deployment.

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4. Introduction

4.1 Purpose of document

The intent of this PMP is to document in detail the plan for the execution of the Voucher_Service project. The document will continue to be updated throughout the project and should be consulted as the definitive source of project information. The document is intended to be complemented by the full project schedule linked in Section 6. The project manager will be responsible for the maintenance of the PMP.

The PMP documents project information in Section 5. This includes stakeholders and an assessment of the value of the project to them. The project scope including in-scope and out-of-scope features is also provided. The SDLC chosen, the incremental method, and reasoning for its selection are detailed. The roles and responsibilities of the team are indicated, as well as the communication plan for stakeholders and the project team. Key risks and their management strategies are outlined. The possible tech stacks considered are compared, and a rationale for the chosen stack of Firebase/React is provided.

Section 6 of the PMP provides a breakdown of the project into a two-release project schedule.

4.2 Audience of document

This document is primarily intended for the project team, project manager, and MYD business owner Tianyi. It is also intended for the SWEN90016 tutor, and is the primary artifact used to communicate project planning, control and execution with them for marking. Future development or maintenance efforts should also benefit from this document by understanding the rationale for decisions made.

4.3 Evolution of document

Version	Individual Responsible	Date created	Comments
v1.0	James Sinclair	23/04/2021	Compiled by project team
v1.0.1	James Sinclair	29/04/2021	Add links to project artefacts
v1.0.2	James Sinclair	08/05/2021	Add Wk 9 project status update (7.1)
v1.0.3	James Sinclair	15/05/2021	Add Wk 10 project status update (7.2)
v1.0.4	James Sinclair	19/05/2021	Address PMP v1.0 feedback (1, 6.3) <ul style="list-style-type: none"> ○ Remove team member names from title page ○ Update risk table to use percentage for probability, 1-5 for impact, with footnote legend ○ Add references Set up Section 8
v1.0.5	Sakshi Chandel	20/05/2021	Address PMP v1.0 feedback (5.1) <ul style="list-style-type: none"> ○ Update Key Stakeholders by removing frequency, and adding teaching team as stakeholder
v1.0.6	Decy Restyan Damayanti	21/05/2021	Address PMP v1.0 feedback (5.5, 6.2, 5.6) <ul style="list-style-type: none"> ○ Update Business Value and convert it into table ○ Add Teaching Team in the communication matrix ○ Remove schedule, covid, and internet from constraints
v1.0.7	James Sinclair	21/05/2021	Complete Week 11 Status update (7.3) Address PMP v1.0 feedback (6.3, 6.5, 4.2) <ul style="list-style-type: none"> ○ Add comment about risk identification/analysis processes ○ Clarify project schedule overview ○ Replace baseline schedule with more detailed Gantt chart showing WBS, dependencies, resources ○ Replace WBS with more detailed WBS ○ Update delivery approach and justification to more clearly identify project characteristics, and explicitly link to risk ○ Update Audience of Document to include tutor

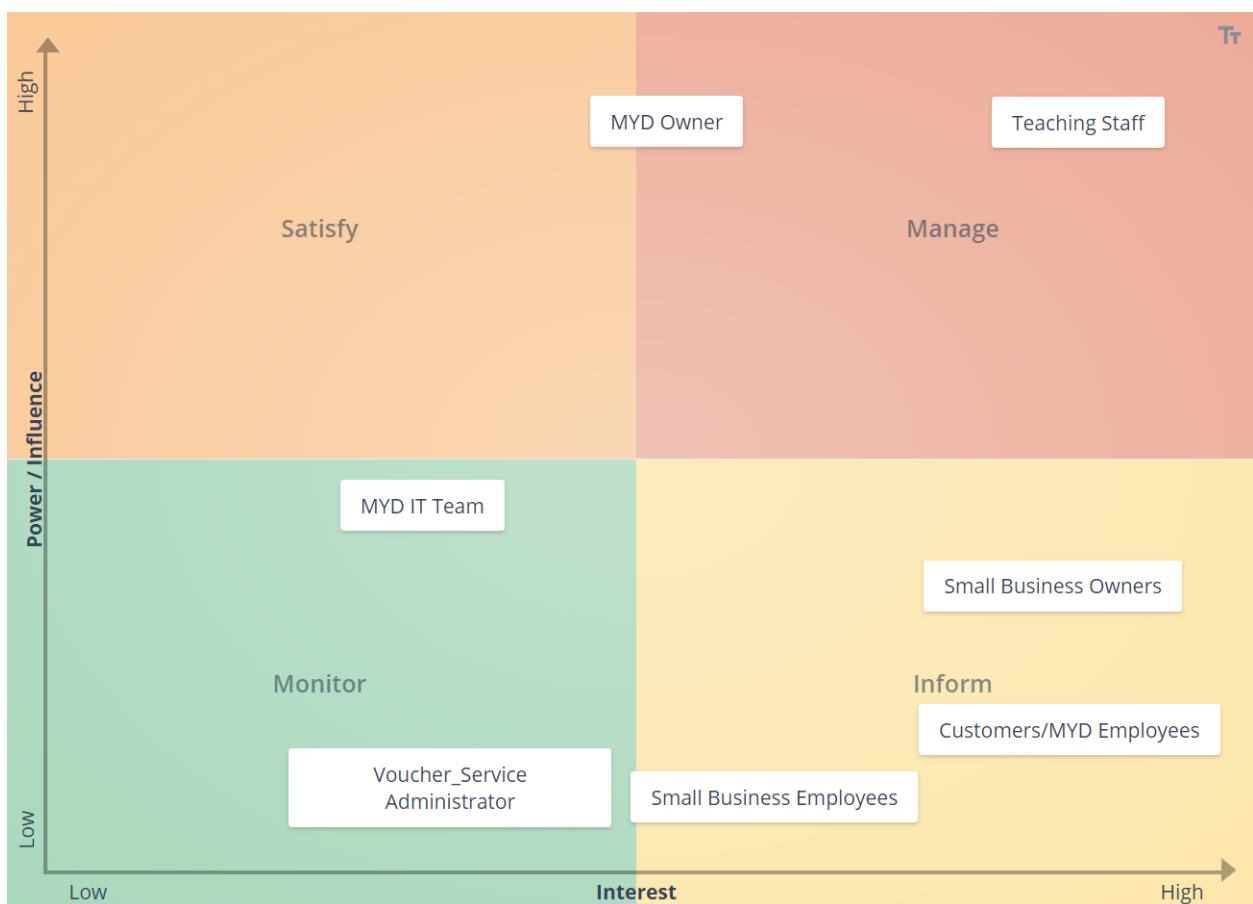
v1.0.8	Xin Wei Ding	21/05/2021	<p>Address PMP v1.0 feedback (6.4)</p> <ul style="list-style-type: none"> ○ Add scoring matrix of technologies ○ Clarify technology requirements and constraints
v1.0.9	Alastair Daivis	21/05/2021	<p>Address PMP v1.0 feedback (5.3, 5.4)</p> <ul style="list-style-type: none"> ○ Scope/Out of Scope was reformatted as table ○ Moved "nice-to-have" items from the out-of-scope list to the in-scope list ○ Added a scope boundary definition statement ○ Added justifications for out-of-scope features
v1.0.10	James Sinclair	23/05/2021	<p>Add timesheets to end of project as addendum to Week 11 Status update (7.3) Update Project Planning - Artefacts list (6.5) Minor refresh of Executive Summary (2)</p>
v1.1.0	James Sinclair	23/05/2021	<p>Add Project Retrospective, compiled by the project team. (8)</p>

5. Project Information

5.1 Key Stakeholders

Voucher_Service has many stakeholders that are interested in the outcome of the service. A stakeholder register is shown on the next page, detailing and classifying each stakeholder. The stakeholder map below shows the interest/power of each stakeholder.

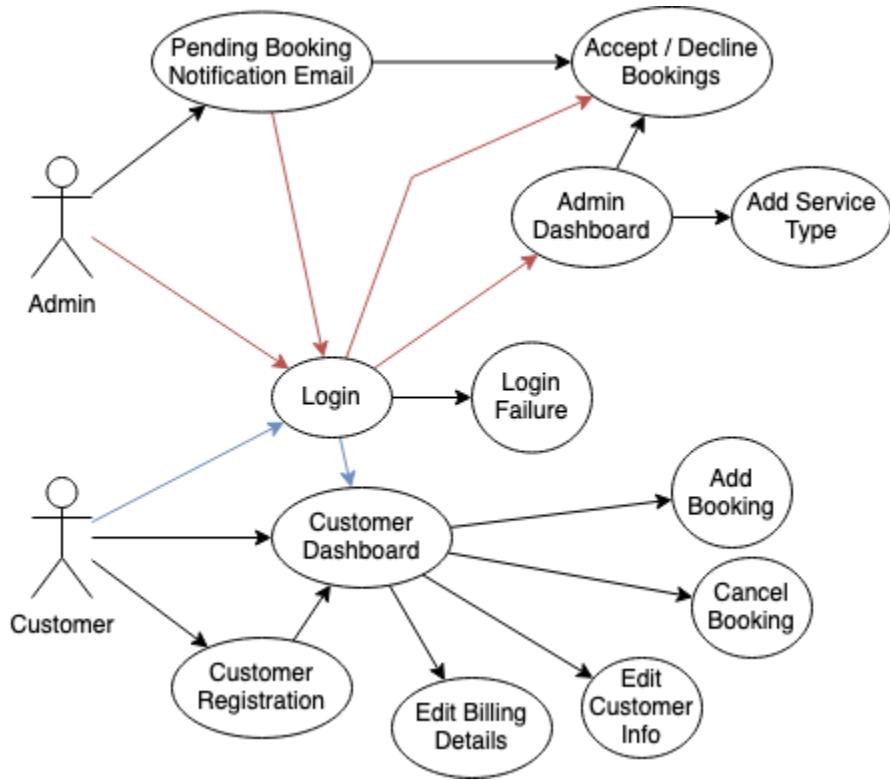
Stakeholder map



Stakeholder Register

Stakeholder	Internal/ external	Role	Communication Channel	Level of influence
Tianyi	Internal	Owner	Zoom meeting, Email	High
Voucher_Service Administrator	Internal	Ability to confirm/cancel voucher bookings	Email	Low
MYD IT Team	Internal	User administration (setup and maintaining account), Maintaining system.	Email	Low-Med
Project Team	Internal	Developing website for the customers /users for voucher service	Zoom meeting	Medium
Teaching Staff	Internal	Helping/Guiding developers with their ideas on voucher service website development.	Discussion forum	High
Small business owners	External	Shareholders pay the owner whenever a coupon is redeemed	Email	Medium
Customers (here MYD Employees)	External	Buy and redeem coupons from the website	Email notifications	Low
Small business staff members	External	Will need to check validity of vouchers	Face to face	Low

5.2 In-scope Features



Use Case Diagram for Voucher_System

The initial release of the voucher service application should include functionality for registering and managing users, adding service types, making bookings, and managing bookings through their various states (e.g. “approval-pending”, “approved”, “appending”, “done”). It should also support email notifications for different transitions in booking state.

Note that some items, such as any interface for service providers to access the system, point-balance tracking, and invoicing, are considered explicitly out-of-scope. See the [relevant section](#) for details.

Some features are considered “nice-to-have” rather than required for the initial development of the product. These features are explicitly noted in the table below, and any feature not explicitly marked as **nice-to-have** should be considered required for the initial development of the product.

Scope	Feature	Description
User management	Log-In (Administrator)	The user should be able to log in to the website using a hard-coded email address.
	User registration	Users should be able to self-register by providing their email address, password, name, and phone number. All of these fields should be required for registration to succeed.
	Registration failure	If user registration does not succeed, the user should be notified by a pop-up or “toast”.
	Log-In (User)	Registered users should be able to log in using the same email address and password they provided at registration.
	Log-In Failure	If login as either an administrator or user does not succeed, the user should be notified by a pop-up or “toast”.
Navigation	Log-in interception	If the user is not logged in, they should be directed to the log-in / registration page when trying to access other pages in the system. After logging in, the user should be directed to the page they were originally trying to access.
	Sidebar	Administrators and Users should both be able to access the following from a sidebar after logging in: <ul style="list-style-type: none"> - Bookings list - Service list - Preferences Users should additionally be able to access:

		<ul style="list-style-type: none"> - Billing details
View bookings	Bookings list	<p>Administrators and users should be able to view a list of their bookings, including booking state, time, and service provided.</p> <p>The list should be sortable by any field and paginated.</p> <p>The list should update automatically when a new booking is created or an existing booking changes state.</p>
	Bookings list (admin)	<p>Administrators should be able to cancel or accept bookings on behalf of the service provider from this list.</p>
View services	Service list	<p>Administrators and users should be able to view a list of available services.</p> <p>The list of services should be sortable and paginated, and should update automatically when services are added or removed.</p>
	Service details (user)	<p>By interacting with one of the services in the list, the user should be able to view its details, including:</p> <ul style="list-style-type: none"> - Service name - Delivery mode (pick-up / delivery)
	Booking creation	<p>From the service details page, the user should be able to make a booking for that service by selecting:</p> <ul style="list-style-type: none"> - A date / time for the booking, which may not be in the past - A delivery mode for the booking

	Booking creation failure	If creating a booking fails, the user should be notified of this failure by a popup or “toast”. Nice-to-have
	Service list (admin)	From the service list, the Administrator should be able to add new service types by providing service details including: <ul style="list-style-type: none">- Service name- Delivery mode (pick-up / delivery)
Booking state changes	Email notifications	When a booking is created , accepted , declined , or cancelled , the Administrator and the User that created the booking should receive email confirmation of these events.
Preferences	User information	Users should be able edit their customer information, including: <ul style="list-style-type: none">- Name- Email address- Phone number
	Billing details	Users should also be able to edit their billing details, including: <ul style="list-style-type: none">- Biller email address- Biller name
Persistence	Persistent storage	The following details need to be stored in persistent storage, such as a database: <ul style="list-style-type: none">- Administrator information (name, email address)- Customer information (name, email address, phone number, biller name, biller email)- Service types (name, delivery type)- Bookings (service type, delivery mode,

		booking date / time, message, user)
Service types	Removal and modification	Removal and modification of service types was not included in the key requirements list, and the lack of these features does not prevent the product from fulfilling its main goal. Nice-to-have
Administrator details	Change email / password	Project specification explicitly states that these should be hard-coded. Nice-to-have
Customer details	Delete profile	Not included in the key requirements list, and the lack of this feature doesn't prevent the product from fulfilling its main goal. Nice-to-have

Full details on the in-scope features may be found in the [Appendix: Use Case documentation](#).

5.3 Out-of-scope Features

A number of features are considered explicitly out of scope for the initial development of this project. For the most part, this includes features that would be needed after the set-up phase of deployment, or which were excluded from the key features as defined in the project definition.

Scope	Feature	Rationale
View bookings	Calendar view	In the project specification, this is noted as a future improvement for the system.
Invoicing system	Invoice generation after booking is completed	In the project specification, this is noted as a future improvement for the system.
Booking creation	Point balance tracking	This is implicitly excluded from the project, which is described as “a web-based system for appointment management”. It's also not

		included in the key requirements list in the project spec, from which we infer that the voucher allocation and point balance tracking system will be developed separately.
Service-provider interface	All features	<p>No interface for service providers is described in the project specification, however allowing service providers to register, modify, and delete service offerings, and to accept or decline bookings, would distribute the administration workload of the system and help ensure that appropriate decisions are made for each service type.</p> <p>Recommended for future development.</p>

5.4 Delivery approach / SDLC

Waterfall Incremental Agile

Three SDLC methodologies were considered for the implementation of this project: waterfall, incremental, and agile. In this section, we assess the suitability of these methodologies with respect to project characteristics including stability of requirements, team availability and communication, and team experience. Justification is then provided for our choice of the incremental approach as the SDLC with minimal project risk.

Requirements and change

Characteristic: This project's requirements have been well defined by Tianyi and are well understood. The voucher booking service itself is of low technical complexity and is not particularly novel, as booking services are a common requirement with many off the shelf

solutions available. Tianyi has clearly articulated their requirements, and the prevalence of online booking systems suggests Tianyi understands what to expect from Voucher_Service.

Assessment: Given the short project timeframe of 1 month, and the clearly defined project scope, it seems the probability of changes to requirements is small. This suggests that the project risk associated with adapting to changing requirements has very low probability, and so the rigidity of a formal approach is unlikely to reduce the likelihood of project success.

The small and simple scope of work suggests that a waterfall approach may be feasible, however any changes in requirements that do occur would have no time to be absorbed and the project modified accordingly. The incremental approach would allow core functionality to be demonstrated early in the project, and based on feedback from the business owner, changes could be made before final delivery. Any changes in requirements that do occur would have more opportunity to be incorporated using the incremental approach, and so the schedule risk resulting from changing requirements would have lower impact than a formal approach if this eventuated. The agile approach would be the most tolerant of change, and would have the lowest schedule risk resulting from changing requirements, however given the expectation of change is low, this does not make agile a preferred approach.

Communication and coordination

Characteristic: The team is spread across time zones, working virtually, and has conflicting availability.

Assessment: The synchronous communication which is typically expected with an agile approach (e.g. daily standups) poses a project risk, as limited availability may result in team members being unable to attend standups. This could produce communication breakdown and result in duplication of work and unimplemented features. Formal methods appear to be a lower risk alternative, as a clear communication plan is produced and documented before project kickoff, with no particular expectation of synchronous communication. While the incremental approach will have a higher overhead than waterfall in terms of documentation, by keeping the number of releases small (i.e. two or three), this will be kept to a minimum.

Team experience

Characteristic: Most of the team members are relatively inexperienced with web development.

Assessment: As a result, an agile approach requires team members to self-organise. This adds the schedule risk, as a lack of clearly defined roles may . In contrast, a formal approach establishes clearly defined roles and responsibilities, which will be simpler to follow for the inexperienced project team.

If an incremental approach was adopted, the team would be required to produce a working release part-way through the project, helping to minimise schedule risk by quickly building experience with a new toolset, and providing a buffer to adapt if the release does not meet requirements. Lacking a clearly defined point in the development lifecycle for an initial release, a Waterfall lifecycle model would not provide a convenient point at which to assess the efficacy of the toolset and adjust development practices accordingly.

Chosen SDLC

The project characteristics can be summarised as:

- The project's requirements are well understood, unlikely to change, and the application is not novel, suggesting formal SDLCs are not excluded by this characteristic, as the scheduling risk of changing requirements has low likelihood.
- The team is spread across time zones, with conflicting availability, suggesting that compared to agile, formal approaches have lower project risk due to the documented communication plan, and no requirement for daily standups.
- The majority of the team has limited web development experience, which suggests that formal approaches are a better fit than agile by establishing clear responsibilities and eliminating the challenge of self-organisation.

The project characteristics suggest that a formal methodology would be best suited to the task. While agile is tolerant of change, little change is expected. Agile would also produce communication/coordination challenges, and may add schedule risk due to self-organising team structure.

The choice between waterfall and incremental approaches was made by considering that the chance of change in requirements is small but non-zero. The waterfall approach is highly rigid, and provides no opportunity to change course, while the incremental approach is able to adapt to a small amount of change in requirements between releases, meaning incremental has a lower exposure to the schedule risk associated with changing requirements. The incremental approach also helps minimise the project risk of having undelivered core features by delivering the most important functionality in early releases.

5.5 Business Value (Financial & Non-Financial Benefits)

The value of the Voucher_Service application to each stakeholder is detailed below.

Stakeholder	Benefit	
	Financial	Non-financial
MYD Owner (Tianyi)	<ul style="list-style-type: none"> - Get an application with zero budget - The viability of the voucher service could provide an additional source of revenue to MYD 	<ul style="list-style-type: none"> - Develop relationship and collaboration with other businesses - Improve team morale and loyalty within MYD
MYD Voucher Service administrator	<ul style="list-style-type: none"> - Get additional income if MYD provides a bonus for admin role 	<ul style="list-style-type: none"> - Get convenience application to manage voucher service
MYD IT Team	None	<ul style="list-style-type: none"> - Get the initial project framework if the application works properly
MYD Employee (Customer)	<ul style="list-style-type: none"> - Get free voucher worth 100 points 	<ul style="list-style-type: none"> - Flexibility and convenience to redeem their vouchers
Small Business Owner	<ul style="list-style-type: none"> - Increase the business profit 	<ul style="list-style-type: none"> - The continuity of voucher service could expand market coverage - Open opportunities for developing relationships and collaborations with other businesses
Small Business Staff	<ul style="list-style-type: none"> - Not losing their income 	<ul style="list-style-type: none"> - Saving time because they have not lost their jobs and do not need to find a new job
Project Team	<ul style="list-style-type: none"> - Get a bonus voucher worth 100 points for each member 	<ul style="list-style-type: none"> - Gain experience and practice in an actual company - Sharpen communication, managerial, and technical skills
Teaching Staff	None	<ul style="list-style-type: none"> - Get material to train and evaluate student knowledge and skills

5.6 Constraints

There is a hard deadline for the delivery of this project on 24 May 2021. This implies that any delays to the schedule will reduce project scope, i.e. unimplemented features. As students are developing the project, the budget is \$0. Several team members are involved in other projects outside of this subject, and so their availability for the project is much lower than a full-time worker. Assuming each person has approximately 0.25 availability on a team of 6, this gives the equivalent of 1.5 full-time workers.

6. Project Governance

6.1 Roles and Responsibilities

The roles and responsibilities of each member of the project team are outlined below.

Role	Responsibilities	Influence	Engagement
Business Owner (Setender)	<ul style="list-style-type: none">- Represents MYD to the project- Provide guidance on priority of features to implement- Provide feedback on system releases to ensure alignment- Set up agreements with local businesses participating	High	Moderate
Project Manager (James)	<ul style="list-style-type: none">- Oversee execution of project: monitoring team members' progress against project plan- Coordinate updates to PMP- Monitor and maintain risk register- Monitor and maintain communications across team, and assist in conflict resolution- Coordinate with Business Owner to ensure alignment- Provide project status updates to Business Owner	Moderate	High
Senior User (Alastair)	<ul style="list-style-type: none">- Engage in testing of system- Coordinate with UX professional- Provide feedback on experience with voucher system	Moderate	Moderate
Developers (Sakshi, Xin, Setender)	<ul style="list-style-type: none">- Implement core functionality of system as directed by PM- Receive guidance from SME when technical issues arise	Low	High
Technical SME (Xin)	<ul style="list-style-type: none">- Provide guidance on technical implementation details- Guide high level design decisions	Moderate	High
UX Professional (Decy)	<ul style="list-style-type: none">- Research on potential user- Research on similar applications	Moderate	High

	<ul style="list-style-type: none"> - Create design prototype - Usability testing 		
Project Management SME (Tutor)	<ul style="list-style-type: none"> - Mark PMP submissions and project demonstration - Provide feedback on PMP v1.0 to help guide its development 	High	Low
Project Management SME (Teaching Staff)	<ul style="list-style-type: none"> - Provide guidance on formulating and executing the PMP via the discussion forum - Act as point of contact when issues arise or conflicts are unable to be resolved 	High	Low

6.2 Communication Plan

Communication with project stakeholders has been documented in the communication matrix below. This captures the plan for regular communication, as well as contingencies in case the above approaches fail.

Day to day team communication will be via WhatsApp. Weekly team meetings will be held on Zoom to review progress and address issues and help needed. Ad hoc meetings will be scheduled as needed for collaboration.

The escalation of team communications will follow a hierarchy from first to last of email, WhatsApp message, Zoom call. In the event that planned contingencies fail, a team member is unable to be contacted, or a conflict is unable to be resolved, university staff will be contacted for assistance.

Communication matrix

Communication	Goal	Format	Frequency	Owner	Audience	Importance
Project status report	Provides information about project progress, completed work, main issues and summary schedule.	Formal report via email	Weekly	Project manager	Tianyi (MYD owner)	high
	Inform all team members that the product will be released.	Release notes via email	Every release	Technical Subject Matter	Project Team	medium
	Report project progress	PMP Planning and PMP Final Report through LMS <i>Contingency plan:</i> Sending report via email	Every submission date	Project manager	Teaching Staff	high
Team meeting	Discuss each member's work progress from the previous meeting, what their next plans are, and find solutions if there are any obstacles or issues.	Virtual meeting (zoom) Meeting minutes available on google drive for the member who is unable to attend the meeting. <i>Contingency plan:</i> - Discussion via Whatsapp - Meeting minutes via email	Weekly	Project Manager	Project Team	high
	Discuss alternative solutions if urgent problems arise	Virtual meeting (zoom)	As needed	Project Manager	Project Team	high

		<p>Meeting minutes available on google drive for the member who unable to attend the meeting</p> <p><i>Contingency plan:</i></p> <ul style="list-style-type: none"> - Discussion via Whatsapp - Meeting minutes via email 				
Task progress updates	Notify team members about assigned tasks, and provide daily progress information	Discussion via Whatsapp and/or Email notification (from monday.com)	Daily	Project Manager	Project Team	high
Task's obstacle	Ask the teaching team to get insight, clarification, or confirmation of any difficulties during the project period.	<p>Discussion via LMS</p> <p><i>Contingency plan:</i></p> <p>Email tutor or lecturer</p>	As needed	Project Manager	Teaching Staff	high
Information about merchant's services	Research on the collaborating merchants (product, services, or availability)	<p>Meeting face to face</p> <p><i>Contingency plan:</i></p> <ul style="list-style-type: none"> - Get information from their website or social media - Ask via email 	As needed	Project Team	Small Business Owner or Small Business Staff	low
Project review	Present and review project outcomes, collect feedback and discuss the next actions	<p>Formal meeting face to face</p> <p><i>Contingency plan:</i></p> <ul style="list-style-type: none"> - Virtual meeting (zoom) - Discussion with instant message - Formal report via email 	Every milestone	Project Manager	Project Team, Tianshi (MYD owner)	high

Post mortem meeting	Evaluate project outcomes, identify if there are any undeliverable features, and discuss what actions to take.	<p>Virtual meeting (zoom)</p> <p>Meeting minutes available on google drive for the member who unable to attend the meeting</p> <p><i>Contingency plan:</i></p> <ul style="list-style-type: none"> - Discussion via Whatsapp - Meeting minutes via email 	At the end of the project	Project Manager	Project Team	high
Product release	Present project outcomes and discuss website or new feature hosting on MYD's local server.	<p>Formal meeting face to face</p> <p><i>Contingency plan:</i></p> <ul style="list-style-type: none"> - Virtual meeting (zoom) - Discussion with instant message - Formal report via email 	Every release	Project Manager	Project team, MYD's IT division, Tianyi (MYD owner), Voucher service administrator	high
	Provide information to the customer (MYD employees) , MYD owner and small business owner if the website ready to use or new features is launched	Information via email	Every release	Project Manager	MYD's employees, Tianyi (MYD owner), Small Business Owner	low
	Present final project outcomes	Virtual meeting (zoom)	Final Release	Project team	Teaching Staff	high

6.3 Risk Management

A number of risks have been identified and analysed for the project. Risks were identified through brainstorming, with impact and probability qualitatively determined by team consensus. The risk impact analysis, and risk response analysis for the top 5 risks are presented in the tables below.

Impact	High	11	7, 16	
	Med		5	
	Low		3	
Likelihood	Low	Med	High	
	Likelihood			

Risk Matrix for top 5 project risks. Number listed is Risk ID.

Risk Impact Analysis

Risk ID	Risk Type	Description	Probability	Impact ¹ (Low 1, High 5)	Exposure	Justification
7	Project	Inaccurate estimate of student availability	50%	4	2	Students undertake several subjects and may also work at the same time. Availability may be overestimated by the inexperienced project team, producing schedule impact and/or failure to meet specification.
16	Product	Email notification service unable to deliver emails and false spam detections.	50%	3	1.5	Email is a key part of booking confirmation/cancellation for this application. The backend mail delivery may fail. Recipient mail service providers (gmail, outlook, telstra) may mark notification emails as spam.
5	Project	Participating businesses modify the type of goods and services they are willing to provide	50%	2	1	Businesses often adjust the goods and services provided. Addition of different services is out of scope. A change in the types of goods and services may require modification to the data model and web interface, with impact to schedule for the update.
11	Product	MYD IT department rules prevent local deployment of web service.	20%	5	1	The IT department may be unwilling to host the service (e.g. security concerns, lack of budget). The impact is high because the service would not be able to be deployed.
3	Product	Local business owner pulls out of voucher program	50%	1	0.5	COVID has decimated local businesses, so there's no guarantee they'll survive to product deployment. This could mean bookings already made are unable to be honoured. It is beyond the current project scope to allow removal of services via the web interface.

¹ Risk impact: 1 - no impact, 2 - minimal impact, 3 - moderate impact, 4 - severe impact, 5 - catastrophic impact (Zalk, 2021).

Risk Register

Risk ID	Trigger	Owner	Response	Strategy	Resources Required
7	Release 1 does not have all of the planned functionality	PM	Mitigate - monitor progress per project schedule. Adjust project schedule between releases. May also need to reduce scope.	Mitigate	Project schedule tools to track progress and highlight shortfall early
16	Release 2 deployment shows emails being blocked	Technical SME	As initial release is intended to be hosted locally, MYD IT team can be handed the responsibility of ensuring email is able to pass through.	Transfer	Technical SME, PM should get buy-in on the transfer from Tianyi, and then inform MYD IT team
5	Business owner indicates they are modifying their goods/services	PM	Coordinate with participating business owners to find out early if they are planning to modify goods/services. Lock in business owners' goods/services with agreements, and indicate that changes may not be able to be supported in the project.	Mitigate	Tianyi, PM to ensure business owner agreements are in place
11	Final release is unable to be deployed by MYD	Technical SME	Coordinate with MYD IT team early in project to ensure that they are able to support the application	Mitigate	Technical SME to meet with MYD IT team
3	Local business indicates they no longer wish to participate in the program	PM	The MYD admin can reject/cancel vouchers for businesses that pull out.	Transfer	Get buy in from Tianyi on this approach. PM to notify MYD admin of the possibility and how to address it.

6.4 Technology

The software product is a web app that requires authentication, multiple user roles, persistent storage and sending emails. Below, the technology requirements are summarised based on features and constraints:

Technology Requirements based on feature requirements and constraint

Feature	Technology Requirement
Web server	The technology needs to offer a frontend solution to host websites. Free hosting and SSL certificate is not needed but would be a great addition to simplify system testing, UX testing/interviews and development.
Authentication	Offer simple authentication solutions without developers having to worry about password hashing, cookies, sessions, ip restrictions etc. The technology should also persist login so the user doesn't have to constantly login again.
User role based access	The system has two roles, admin and user, they perform different tasks based on their role. The technology needs to provide built in solutions for multi tenancy which our developers need to build from ground up. Users should only be able to access/modify data where they are supposed to, for instance, user_joe should not be able to see or cancel user_jane's bookings.
Send transactional emails	The system is heavily dependent on email delivery, the tenchonog needs to be able to send emails via smtp or be able to integrate with mail service providers such as mailgun or sendgrid.
Persist booking, customer and service information in the system	A persistent storage is needed for this system. The technology needs to offer some type of database and beable to CRUD.

Constraint-Related requirements

Constraint	Requirement
Budget	The project has 0 budget, therefore IaaS/PaaS/SaaS solutions with no trial options are not suitable. The technology needs to be open source or offer a free tier/ free trial.
Student Availability	Students have very limited availability, the project also has a strict deadline, therefore the chosen technology must provide toolsets/features to accelerate development. The technology must enable developers to focus on code instead of other things, such as built in security, fault tolerance and scalability. The technology should do that out of the box.
Web development Skills	Majority of students in the team have no web development experiences, therefore the technology needs to reduce the amount of HTML, CSS developers need to write. Cross platform compatibility is also needed so students do not have to worry about website breaking on some browsers.

Given the requirements above, the following technologies were researched and made to the shortlist.

Wordpress (PHP, MySQL, Apache or Nginx)

Wordpress is popular for web development, with built-in user authentication and user role management. Its content management system makes it suitable to use as a blogging platform. Wordpress comes with a large selection of first and third party plugins. Woo-commerce is a plugin that offers the ability to convert Wordpress into a production ready ecommerce platform with ease. Voucher_services could benefit from its out of the box ecommerce features. However, Wordpress requires each developer to set up their own local development environments, such as MySQL, Apache or nginx server. Any changes made to the database schema would require every developer to synchronize their environment. Furthermore, as all developers work on the same codebase, code merges could introduce some issues and overheads. As no team member has expertise in PHP, and given the small team size, meeting project schedules could be difficult using this approach.

React + Firebase (TypeScript, Firebase Firestore, Cloud Functions, Firebase Authentication)

Firebase offers authentication, NoSQL database, hosting and serverless functions out of the box. It enables developers to focus on coding rather than setting up development environments. Firebase offers a generous free tier (Google Cloud, 2021), meaning developers can use these services without charges. Developers may choose to use live services directly or local emulators freely. Firebase's Cloud Function offers several benefits, such as scalability, code splitting, and built-in event triggers with other Firebase offerings such as Firestore. It allows developers to use a separate code base for backend logic therefore reducing code merging issues. It is also highly failure resilient by allowing code to run in parallel to ensure errors in a single function do not crash the entire system.

React is one of the most popular web frameworks. It has a rich ecosystem, a large amount of learning resources and ongoing support from communities as well as large corporations such as Facebook, Airbnb and Microsoft. Building user interfaces with React is declarative and simple, making it ideal for a team of students to learn. React is rendered on the client side eliminating the need to set up a web server for this project. The flexibility of React allows developers to integrate with any other frameworks, making changes easy to implement.

However, only one team member has experience with React and Firebase.

Django

Django is a popular web framework, it is free to use and simple to deploy. It offers better flexibility compared to Wordpress as it does not require MySQL and can work with most databases. Django is Python based, a language all team members have experience with. Its abstraction and tools are easy to learn. Authentication and user role functionalities are out of the box.

However, the monolithic nature of Django makes it difficult to use for this project. All components are deployed together, producing a higher chance of some component crashing the whole site than other alternatives. Developers are required to understand the full system before they can contribute efficiently. Django's Object Relational Mapper could potentially create challenges when integrating with other systems. Furthermore, Django templates still require developers to write HTML and CSS but not many team members have substantial experience with HTML or CSS.

Spring Boot

Spring Boot is a popular web framework with a large amount of learning resources and community support. It works with most databases and allows easy integration with other Spring ecosystems. It offers many production ready features such as embedded server and health check. Managing dependencies are made easy with starter POMs.

However, Spring boot has a steep learning curve and only one member has experience with it. Without understanding of Spring's underlying system, developers may have difficulties with troubleshooting and modifications.

Final Project Stack Decision and Justification

React Firebase has been chosen for this project, because in comparison to Wordpress, Django and Spring Boot, React and Firebase offer more features out of the box. With Firebase's hosting offering, deployment can be done via a single command. CDN, versioning and traffic routing is automatically configured for free. The UX designer could conduct UX usability testing with ease, remotely or in person. With its hosting preview channels, different versions of the website can be tested simultaneously (Google Cloud, 2021). Other technologies are more time consuming to deploy.

React utilizes Virtual DOM (Facebook Open Source, n.d) which greatly improves user experience by providing responsive user interactions and reducing loading times between pages. Other frameworks (e.g. Wordpress) bundle large amounts of unused Javascript and CSS on every page, heavily impacting page load speed.

Firebase's Firestore database is the only database that does not require a server, and the React frontend is able to call the database directly. User interactions such as service booking and profile updates can be completed near instantly, which further enhances user experience. Other technologies require making API calls to the server first, then server to database, producing a longer delay. Firestore is a NoSQL database that is highly scalable without resource provisioning overhead, developers do not need to worry about or design partitioning, sharding like other databases such as MySQL used by Wordpress.

Firebase's Cloud Function is available in multiple programming languages (Google Cloud, 2021), allowing all team members to choose a language they feel comfortable coding with and contribute to the backend logic. In contrast, Wordpress, Django and Spring boot, all require code to be written in a specific language. Cloud Function's micro service architecture allows

deployment to be independent down to the function level. Therefore React and Firebase offer better availability than Django or Wordpress, as failure in any component will not bring down the entire system. Firebase Authentication integrates seamlessly with other Firebase products. It provides end to end identity solutions, freeing developers from writing any code for handling role based access control, such as adding services as an admin.

Each technology is graded in the table below with respect to a number of criteria, using a scale from 1 - 5, 5 being the highest and 1 being the poorest in terms of proficiency or advantage.

Criterion	Wordpress	Django	Spring Boot	React Firebase
Team experience with language	1	2	2	4
Ease of setup environment	2	2	1	5
DX & Developer toolset	1	2	3	5
Fault tolerance	1	1	3	5
Ease of conducting UX interview	1	1	1	5
Frontend user experience	1	1	1	5
Amount of out of the box features	5	4	4	4
Ease of learning / Learning curve	1	2	2	5
Scalability	1	1	3	5
Community/Enterprise support	3	2	4	5
Ease of integration & extension	2	3	5	5
Free hosting & SSL certificate	1	1	1	5
Versioning & Preview channels	2	1	1	5
Total Score	22	23	31	63

Overall, while other technologies/frameworks each have their own perks, the React and Firebase combination drastically outshines the others in terms of flexibility, development acceleration, availability, product quality and synergy with team members' skills. Therefore React Firebase is chosen for this project.

6.5 Project Planning

Overview of Project Plan

As a result of project planning activities, the project schedule is broken into two releases to be completed on 7 May 2021 and 21 May 2021 respectively. The first release will deliver the core functionality of user login and voucher bookings. The second release will extend the system by implementing features that use email integration, as well as features involving the update of user information and booking cancellation.

Project Schedule

The Project Manager is responsible for maintaining the project schedule and tracking team progress against it. The schedule will be tracked and updated weekly following status meetings to establish whether the project is progressing as planned. A larger update to the project schedule will take place between product releases as there will be a better understanding of team productivity.

The project schedule is maintained in Microsoft Project, and monday.com is used to track progress. The project schedule is presented below as a Gantt chart, showing the project timeline with dependencies, milestones, WBS, and resources.

Estimation of resources required for tasks was based on team consensus, and is expected to have a high uncertainty as student availability and productivity are not well known at project commencement. Task allocation (see [Work breakdown structure and resource allocation](#)) was then based on nominal roles, and adjusted for balance in workload across the team.

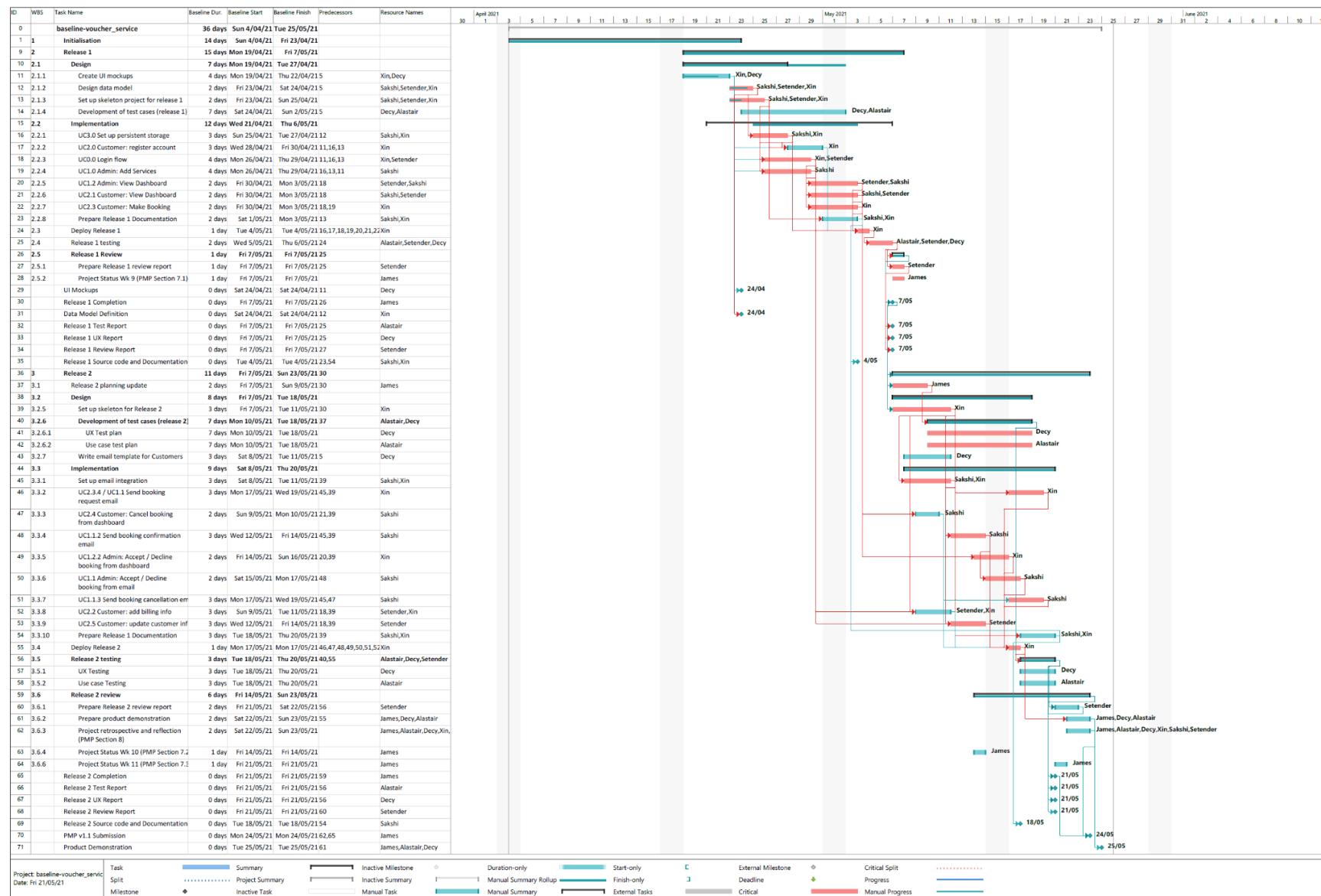
Project Schedule Artefacts

The definition of the project schedule is maintained at the following links:

- Project Schedule definition: see *PMP-attachments/voucher_service.mpp*
- Team collaboration tool: [Gantt Chart](#)

Gantt Chart

The definition of the Gantt chart is maintained in the Project Schedule. Screenshots are shown below for reference.

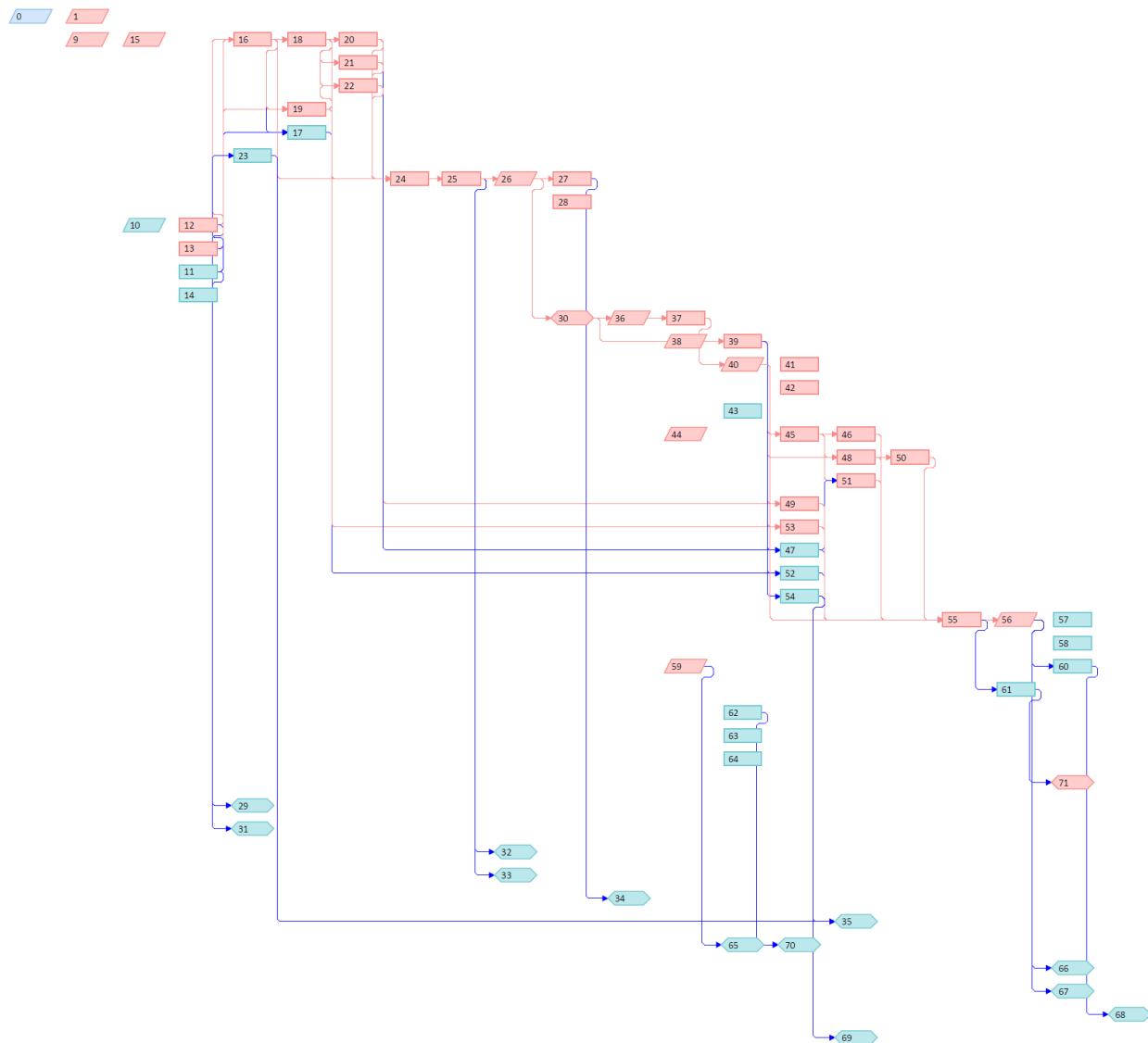


Work-breakdown structure (WBS)

The definition of the WBS is maintained in the Project Schedule. It is replicated here for reference. Implementation task descriptions beginning with UC correspond to use cases. Refer to [Appendix: Use Case Documentation](#) for further details. The corresponding task is the implementation of the functionality to fulfill the use case.

voucher_service							
ID	WBS	Task Name	Baseline Duration	Baseline Start	Baseline Finish	Predecessors	Resource Names
0		voucher_service	36 days	Sun 4/04/21	Tue 25/05/21		
1	1	Initialisation	14 days	Sun 4/04/21	Fri 23/04/21		
2	1.1	Research frameworks/technologies	12 days	Sun 4/04/21	Sat 17/04/21		Alastair,Decy,James,Sakshi,Setender,Xin
3	1.2	Select framework/technology	3 days	Mon 19/04/21	Wed 21/04/21	2	Alastair,Decy,James,Sakshi,Setender,Xin
4	1.3	Choose SDLC	3 days	Sun 18/04/21	Tue 20/04/21		Alastair,Decy,James,Sakshi,Setender,Xin
5	1.4	Complete PMP v1.0	10 days	Sun 11/04/21	Thu 22/04/21		Alastair,Decy,James,Sakshi,Setender,Xin
6	1.5	Requirements definition	5 days	Tue 13/04/21	Sun 18/04/21		Alastair,Decy,James,Sakshi,Setender,Xin
7	1.6	Risk identification and analysis	5 days	Sun 18/04/21	Thu 22/04/21		James,Alastair,Decy,Sakshi,Setender,Xin
8	1.7	PMP v1.0 Submission	0 days	Fri 23/04/21	Fri 23/04/21	5	James
9	2	Release 1	15 days	Mon 19/04/21	Fri 7/05/21		
10	2.1	Design	7 days	Mon 19/04/21	Tue 27/04/21		
11	2.1.1	Create UI mockups	4 days	Mon 19/04/21	Thu 22/04/21	6	Xin,Decy
12	2.1.2	Design data model	2 days	Fri 23/04/21	Sat 24/04/21	6	Sakshi,Setender,Xin
13	2.1.3	Set up skeleton project for release 1	2 days	Fri 23/04/21	Sun 2/05/21	6	Sakshi,Setender,Xin
14	2.1.4	Development of test cases (release 1)	7 days	Sat 24/04/21	Sun 2/05/21	6	Decy,Alastair
15	2.2	Implementation	12 days	Wed 21/04/21	Thu 6/05/21		
16	2.2.1	UC3.0 Set up persistent storage	3 days	Sun 25/04/21	Tue 27/04/21	12	Sakshi,Xin
17	2.2.2	UC2.0 Customer: register account	3 days	Wed 28/04/21	Fri 30/04/21	11,16,13	Xin
18	2.2.3	UC0.0 Login flow	4 days	Mon 26/04/21	Thu 29/04/21	11,16,13	Xin,Setender
19	2.2.4	UC1.0 Admin: Add Services	4 days	Mon 26/04/21	Thu 29/04/21	16,13,11	Sakshi
20	2.2.5	UC1.2 Admin: View Dashboard	2 days	Fri 30/04/21	Mon 3/05/21	18	Setender,Sakshi
21	2.2.6	UC2.1 Customer: View Dashboard	2 days	Fri 30/04/21	Mon 3/05/21	18	Sakshi,Setender
22	2.2.7	UC2.3 Customer: Make Booking	2 days	Fri 30/04/21	Mon 3/05/21	18,19	Xin
23	2.2.8	Prepare Release 1 Documentation	2 days	Sat 1/05/21	Mon 3/05/21	13	Sakshi,Xin
24	2.2.9	Modifications to release 1	5 days	Sat 1/05/21	Thu 6/05/21		Setender,Xin,Alastair,Sakshi
25	2.2.9.1	UX1. Update voucher service icon to "store" icon	1 day	Sat 1/05/21	Sat 1/05/21		Xin,Alastair
26	2.2.9.2	UX3. Investigate ordering issue	2 days	Sat 1/05/21	Sun 2/05/21		Xin,Decy
27	2.2.9.3	UX5. Mandatory image when adding service	1 day	Sat 1/05/21	Sat 1/05/21		Alastair,Xin
28	2.2.9.4	UX6. Phone number validation	3 days	Tue 4/05/21	Thu 6/05/21		Alastair,Xin
29	2.2.9.5	UX7. Add avatar of product to booking page	2 days	Sun 2/05/21	Mon 3/05/21		Alastair,Xin
30	2.2.9.6	UX8.1 Add full item description to booking form	2 days	Sun 2/05/21	Mon 3/05/21		Alastair,Xin
31	2.2.9.7	UX2.2, UX2.8, UX9, UX10.1 Capture as out of sync	3 days	Sat 1/05/21	Tue 4/05/21		Decy
32	2.2.9.8	UX10.2. Provide contact us information	3 days	Tue 4/05/21	Thu 6/05/21		Alastair,Xin
33	2.3	Deploy Release 1	1 day	Tue 4/05/21	Tue 4/05/21	16,17,18,19,20,21,22	Xin
34	2.4	Release 1 testing	2 days	Wed 5/05/21	Thu 6/05/21	33	Alastair,Setender,Decy
35	2.5	Release 1 Review	1 day	Fri 7/05/21	Fri 7/05/21	34	
36	2.5.1	Prepare Release 1 review report	1 day	Fri 7/05/21	Fri 7/05/21	34	
37	2.5.2	Project Status Wk 9 (PMP Section 7.1)	1 day	Fri 7/05/21	Fri 7/05/21		Setender
38		UI Mockups	0 days	Sat 24/04/21	Sat 24/04/21	11	Decy
39		Release 1 Completion	0 days	Fri 7/05/21	Fri 7/05/21	35	James
40		Data Model Definition	0 days	Sat 24/04/21	Sat 24/04/21	12	Xin
41		Release 1 Test Report	0 days	Fri 7/05/21	Fri 7/05/21	34	Alastair
42		Release 1 UX Report	0 days	Fri 7/05/21	Fri 7/05/21	34	Decy
43		Release 1 Review Report	0 days	Fri 7/05/21	Fri 7/05/21	36	Setender
44		Release 1 Source code and Documentation	0 days	Tue 4/05/21	Tue 4/05/21	23,63	Sakshi,Xin
45	3	Release 2	11 days	Fri 7/05/21	Sun 23/05/21	39	
46	3.1	Release 2 planning update	2 days	Fri 7/05/21	Sun 9/05/21	39	James
47	3.2	Design	8 days	Fri 7/05/21	Tue 18/05/21		
48	3.2.5	Set up skeleton for Release 2	3 days	Fri 7/05/21	Tue 11/05/21	39	Xin
49	3.2.6	Development of test cases (release 2)	7 days	Mon 10/05/21	Tue 18/05/21	46	Alastair,Decy
50	3.2.6.1	UX Test plan	7 days	Mon 10/05/21	Tue 18/05/21		Decy
51	3.2.6.2	Use case test plan	7 days	Mon 10/05/21	Tue 18/05/21		Alastair
52	3.2.7	Write email template for Customers	3 days	Sat 8/05/21	Tue 11/05/21	6	Decy
53	3.3	Implementation	9 days	Sat 8/05/21	Thu 20/05/21		
54	3.3.1	Set up email integration	3 days	Sat 8/05/21	Tue 11/05/21	48	Sakshi,Xin
55	3.3.2	UC2.3.4 / UC1.1 Send booking request email	3 days	Mon 17/05/21	Wed 19/05/21	54,48	Xin
56	3.3.3	UC2.4 Customer: Cancel booking from dashboard	2 days	Sun 9/05/21	Mon 10/05/21	21,48	Sakshi
57	3.3.4	UC1.1.2 Send booking confirmation email	3 days	Wed 12/05/21	Fri 14/05/21	54,48	Sakshi
58	3.3.5	UC1.2.2 Admin: Accept / Decline booking from dashboard	2 days	Fri 14/05/21	Sun 16/05/21	20,48	Xin
59	3.3.6	UC1.1 Admin: Accept / Decline booking from email	2 days	Sat 15/05/21	Mon 17/05/21	57	Sakshi
60	3.3.7	UC1.1.3 Send booking cancellation email	3 days	Mon 17/05/21	Wed 19/05/21	54,56	Sakshi
61	3.3.8	UC2.2 Customer: add billing info	3 days	Sun 9/05/21	Tue 11/05/21	18,48	Setender,Xin
62	3.3.9	UC2.5 Customer: update customer info	3 days	Wed 12/05/21	Fri 14/05/21	18,48	Setender
63	3.3.10	Prepare Release 1 Documentation	3 days	Tue 18/05/21	Thu 20/05/21	48	Sakshi,Xin
64	3.4	Deploy Release 2	1 day	Mon 17/05/21	Mon 17/05/21	55,56,57,58,59,60,61	Xin
65	3.5	Release 2 testing	3 days	Tue 18/05/21	Thu 20/05/21	49,64	Alastair,Decy,Setender
66	3.5.1	UX Testing	3 days	Tue 18/05/21	Thu 20/05/21		Decy
67	3.5.2	Use case Testing	3 days	Tue 18/05/21	Thu 20/05/21		Alastair
68	3.6	Release 2 review	6 days	Fri 14/05/21	Sun 23/05/21		
69	3.6.1	Prepare Release 2 review report	2 days	Fri 21/05/21	Sat 22/05/21	65	Setender
70	3.6.2	Prepare product demonstration	2 days	Sat 22/05/21	Sun 23/05/21	64	James,Decy,Alastair
71	3.6.3	Project retrospective and reflection (PMP Section 8)	2 days	Sat 22/05/21	Sun 23/05/21		James,Alastair,Decy,Xin,Sakshi,Setender
72	3.6.4	Project Status Wk 10 (PMP Section 7.2)	1 day	Fri 14/05/21	Fri 14/05/21		James
73	3.6.6	Project Status Wk 11 (PMP Section 7.3)	1 day	Fri 21/05/21	Fri 21/05/21		James
74		Release 2 Completion	0 days	Fri 21/05/21	Fri 21/05/21	68	
75		Release 2 Test Report	0 days	Fri 21/05/21	Fri 21/05/21	65	Alastair
76		Release 2 UX Report	0 days	Fri 21/05/21	Fri 21/05/21	65	Decy
77		Release 2 Review Report	0 days	Fri 21/05/21	Fri 21/05/21	69	Setender
78		Release 2 Source code and Documentation	0 days	Tue 18/05/21	Tue 18/05/21	63	Sakshi
79		PMP v1.1 Submission	0 days	Mon 24/05/21	Mon 24/05/21	71,74	James
80		Product Demonstration	0 days	Tue 25/05/21	Tue 25/05/21	70	James,Alastair,Decy

A network diagram is shown below, showing the critical path through the project (red tasks). Tasks are labelled by Task ID, as shown in the WBS above.



Project Artefacts

Key project artefacts include:

Artefact	Owner	Description
Voucher_Service	Xin	Link to live webapp
Code Documentation	Sakshi	Definition of application source code, and appropriate documentation to support future development and maintenance
Frontend source code	Xin	Git repository storing frontend source code for Voucher_service
Backend source code	Xin	Git repository storing backend source code for Voucher_service
Project Management Plan	James	Document planning, control, execution of the project
Meeting minutes	James	Minutes of meetings, including agenda, discussion, action items
Project Collaboration Board	James	Collaborative Gantt chart
Project Schedule	James	Definition of Project Schedule
Use Cases	Alastair	Detailed description of project requirements in the form of use cases
Data Model Definition	Xin	Definition of the data model for persistent storage
Test Report	Alastair	Test results for Release 1 and Release 2
UX Report	Decy	Research, planning, and assessment of UX for Release 1 and Release 2
UX Evaluation	Decy	Test results from UX evaluation for Release 1 and Release 2
Project retrospective and reflection	James	Reflection on teamwork and project

Weekly milestones

The weekly milestones are maintained in the Project Schedule. They are replicated here for reference.

Week 7

- PMP v1.0 submission

Week 8

- UI Mockups
- Data Model Definition

Week 9

- Release 1
- PMP 7.1 Project status
- Release 1 Test Report
- Release 1 UX Report
- Release 1 Review Report
- Release 1 Source code and documentation

Week 10

- PMP 7.2 Project status complete

Week 11

- Release 2 complete
- Release 2 Test Report
- Release 2 UX Report
- Release 2 Review Report
- Release 2 Source code and documentation
- PMP 7.3 Project status

Week 12

- Project Retrospective and Reflection
- Project demonstration
- PMP v1.1 submission

7 Project Execution, Monitoring and Control

7.1 Project Status: Friday Week 9

The first release of Voucher_Service has been completed this week as planned, with the service available at <https://voucher-service-swen.web.app>. Functionality includes:

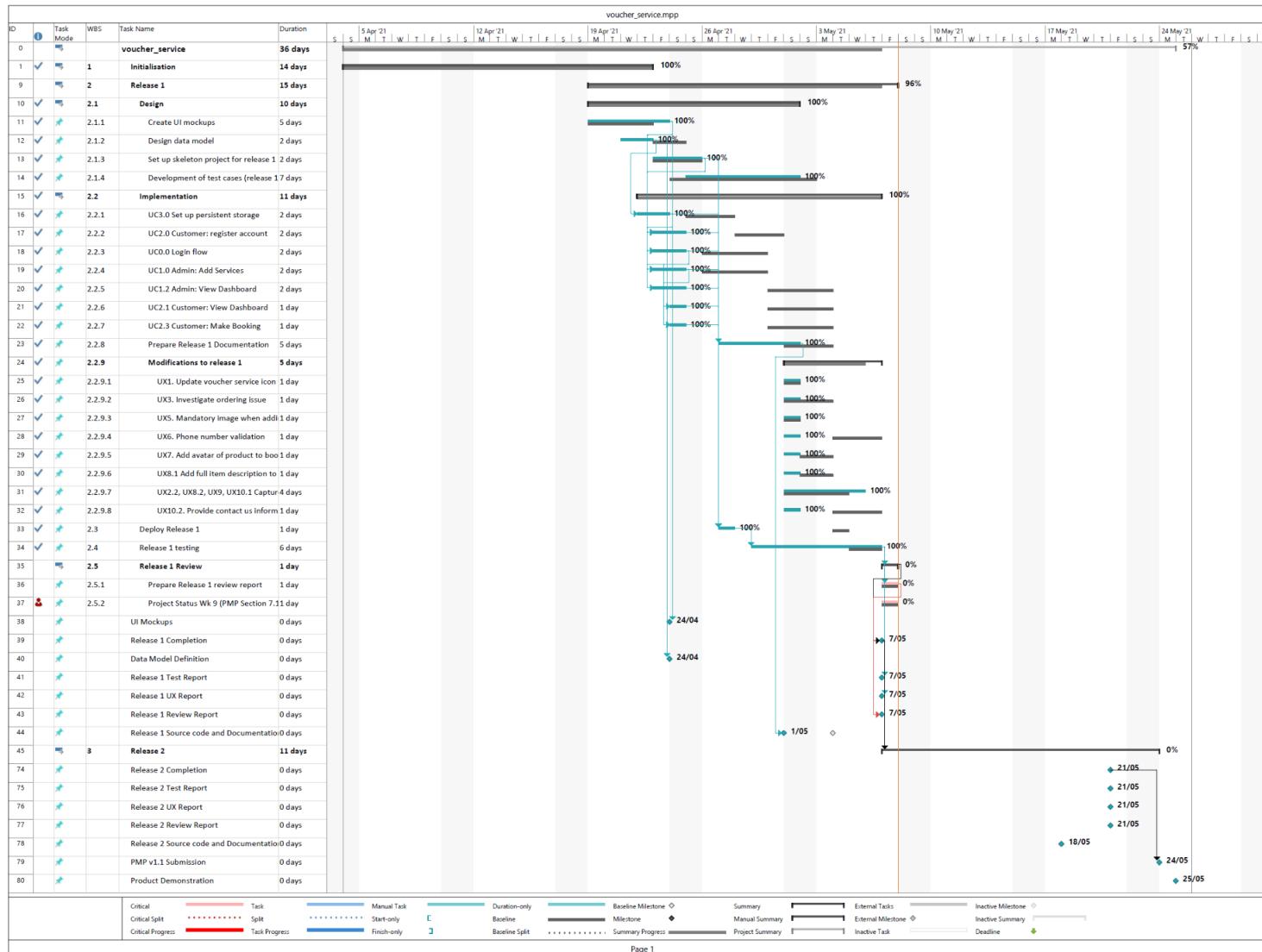
- Customer signup and login
- Administrator can add services
- Customer can create bookings for services
- Customer can view bookings for services

UI Mockups and Data Model Definition were completed early Week 8. Release 1 was deployed with all planned functionality one week ahead of schedule, by mid-Week 8. Test reports were completed for both UX and Use Cases. Some minor clarifications of requirements resulted from the test result review. Minor updates were implemented during Week 9. Release 1 documentation and release notes are complete. A review of release 1 from the business owner is pending.

7.1.1 Process Related Artefacts

Progress Gantt Chart

A progress Gantt chart displaying current project completion is shown below.



The following unplanned work was added to the schedule as a result of UX Testing. As deployment of Release 1 was one week early, these changes were able to be accommodated without causing any delay to the project schedule.

WBS	Task Name
2.2.9	Modifications to release 1
2.2.9.1	UX1. Update voucher service icon to "store" icon
2.2.9.2	UX3. Investigate ordering issue
2.2.9.3	UX5. Mandatory image when adding service
2.2.9.4	UX6. Phone number validation
2.2.9.5	UX7. Add avatar of product to booking page
2.2.9.6	UX8.1 Add full item description to booking form
2.2.9.7	UX2.2, UX8.2, UX9, UX10.1 Capture as out of scope/future recommendation
2.2.9.8	UX10.2. Provide contact us information

Minutes

Minutes for team meetings held on 30/4 and 7/5 are provided in [Appendix: Minutes \(Week 9 update\)](#).

Timesheets

Person	Date	Duration	Task
Xin	21-Apr-2021	<1 day	Create Firebase project
	21-Apr-2021	<1 day	Setup Github organization and repos
	23-Apr-2021	2 days	Initialized Skeleton frontend and backend code w/ Sakshi
	23-Apr-2021	2 days	Design Data model, security rules and indexes w/ Sakshi
	25-Apr-2021	3 days	Setup persistent storage and basic CRUD code
	28-Apr-2021	2 days	Authentication system and user roles
	28-Apr-2021	< 1 day	Hard code admin
	28-Apr-2021	2 days	Admin add services & Dashboard w/ Sakshi
	30-Apr-2021	1 days	Customer booking and Dashboard w/ Sakshi
	2-May-2021	5 days	Preparation of release 1 source code and documentation

Sakshi	23-Apr-2021	2 days	Design data models with Xin
	23-Apr-2021	2 days	Setting up skeleton project for release 1 with Xin
	25-Apr-2021	2 days	Set up persistent storage
	28-Apr-2021	3 days	Worked on Admin adding services part
	1-May-2021	2 days	Worked on Admin view dashboard
	2-May-2021	5 days	Preparation of release 1 source code and documentation
Decy	21-Apr-2021	2 days	Users research
	23-Apr-2021	1 days	Create UI Mockup
	29-Apr-2021	1 days	Create UX Evaluation Scenario
	30-Apr-2021	1 days	Discuss UX Evaluation with team
	5-May-2021	1 days	Create 1st UX Report
Alastair	29-Apr-2021	1 days	QA / testing pass for release 1
	21-Apr-2021	2 days	Use case definitions for PMP
	28-Apr-2021	1 days	Set up QA info spreadsheet
	29-Apr-2021	1 days	QA feedback / bug fixing with Xin
	14-Apr-2021	1 days	Test plan development for release 2
James	17-Apr-2021	3 day	Project schedule
	17-Apr-2021	3 day	PMP drafting
	23-Apr-2021	1 day	Final edit/submission
	27-Apr-2021	< 1 day	Review data model info
	28-Apr-2021	< 1 day	Walkthrough of system
	29-Apr-2021	< 1 day	Review test case info
	29-Apr-2021	< 1 day	Review UX testing info
	30-Apr-2021	< 1 day	Prep for meeting week 8, Chair meeting week 8
	1-May-2021	< 1 day	Update project schedule based on review of Release 1 testing
	1-May-2021	< 1 day	Project status week 8
	3-May-2021	< 1 day	Review Release 1 Source Code Documentation
	7-May-2021	< 1 day	Prep, chair meeting week 9
James	7-May-2021	< 1 day	Project status week 9
Setender	23-Apr-2021	1 day	PMP documentation
	24-Apr-2021	3 day	Review on Release 1
	30-Apr-2021	3 day	Working on code with Xin
	2-May-2021	2 day	Working on test cases

7.1.2 Product Related Artefacts

Completed features

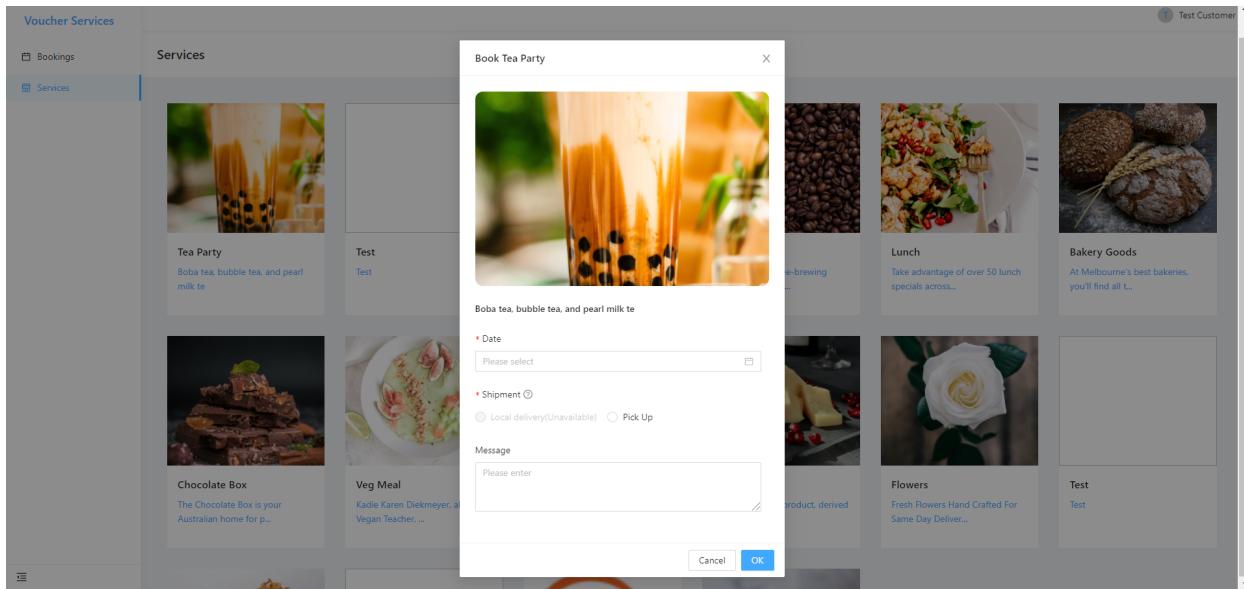
Release notes indicating completed features for Release 1 are shown below:

- Customer and admin are able to sign up and log in
- Phone numbers are validated on sign up
- Admin is able to add/delete services through the dashboard
- Customers are able to make bookings for services
- Customers and admin can access dashboards, showing current bookings etc.
- E2E tests cases simulating end to end user interaction.
- Contact Us button provided allowing a user to email the admin.

Screenshots of some of this functionality are shown below. Screenshots of Release 1 functionality are provided in [Appendix: Release 1 Demonstration](#).

The screenshot shows a web-based customer sign-up form titled "Voucher Services". At the top center is a logo consisting of a stylized "V" shape with a horizontal bar extending from its right side. Below the logo, the text "Voucher Services" is centered. The form contains five input fields: "Name" (with a person icon), "Email" (with an envelope icon), "Password" (with a lock icon), "Confirm Password" (with a lock icon), and "Phone" (with a phone receiver icon). To the right of the "Password" and "Confirm Password" fields are small circular icons with the letters "P" and "C" respectively. Below the input fields is a link "Already have an account?". At the bottom of the form is a large blue rectangular button labeled "Create Account".

Customer signup form



Customers can select their desired service and fill in the form to make a booking

Service	Message	Shipment	Date
Tea Party	everything i needed is on the ground	Pick Up	4/30/2021, 8:48:04 PM

1-1 of 1 items < 1 > 20 / page

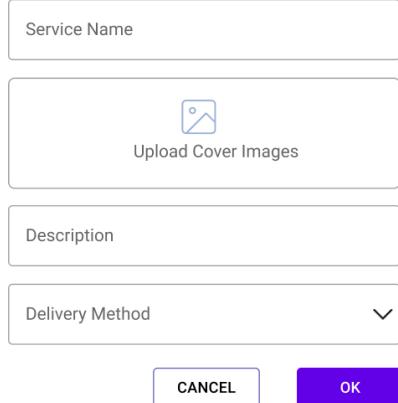
Contact Us
© 2021 Voucher Services

Customers can view their bookings from the dashboard

UI Mockups - Release 1

The UX professional created draft UI mockups for Voucher_Service. After consultation with the development team, finalised UI mockups for Release 1 were produced. These are shown in [Appendix: UX Report - Prototype](#).

Add Service



The UI mockup for adding services consists of a form with four input fields and two buttons at the bottom. The first field is a text input labeled "Service Name". The second field is a button labeled "Upload Cover Images" with a camera icon above it. The third field is a text input labeled "Description". The fourth field is a dropdown menu labeled "Delivery Method". Below the form are two buttons: "CANCEL" on the left and "OK" on the right.

UI Mockup for adding services

UX Report

The UX professional has prepared a report (see [Appendix: UX Report](#)) outlining the approach that is being taken to ensure the quality of Voucher_Service's user experience. Research was conducted via social media, interviews, and other sources to establish a persona (shown below) for a Customer of Voucher_Service. Draft UI Mockups were also prepared for Release 1 functionality. The results of the [UX Evaluation](#) were also assessed highlighting that Release 1 meets expectations for heuristics including:

- Visibility of system status
- Consistency and standards
- Error Prevention
- Aesthetic and minimalist design

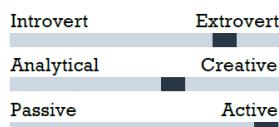


DAVID KHIELS

MYD DIRECTOR OF DIGITAL MARKETING

“Cafey is the best”

AGE : 30
FAMILY : 1st Born,
Single
JOB : Employee
LOCATION : Melbourne



COMPUTER(s) : iPhone,
Laptop 13"
INTERNET : ±12 hours

SOCIAL MEDIA



BACKGROUND

Over the past year, David has been working at MYD, located in a strategic area and is surrounded by various small businesses. He often held meetings with his clients at the coffee shop around his office.

DAVID's STORY

Every day I have to go to the office early in the morning and skip breakfast at home. But don't worry; usually, I grab my delicious breakfast from Cafey. Cafey is a kind of coffee shop near my office, but it sells breakfast and lunch too. They sell pretty various types of coffee, and the atmosphere is very comfortable. Barista at Cafey is the best. What could be better than that?

Sometimes I invite my clients to meetings and have lunch there. They enjoy the atmosphere and the dishes. However, I heard that Cafey and other restaurants nearby might close in two months due to the pandemic. Before, Cafey was quite busy, and some menus often ran out if I bought breakfast late. It is too bad. I don't have many times to prepare breakfast, so maybe I'll skip that next time.

GOALS

- Eat breakfast on the way to the office
- Meet client in a nearby location with a conducive environment
- Get his favourite menu

FRUSTRATIONS

- Busy schedule
- The news that some restaurant nearby will be closed amid the pandemic

Profile Picture from <https://imgbin.com/png/Ab2QmZfC/stock-photography-arm-png>

Profile of typical customer of Voucher_Service

UX Evaluation

An evaluation of the UX was performed by the team's UX professional for Release 1. This consisted of an heuristic evaluation (based on the methods of Nielsen (2000)) and a cognitive walkthrough. The recommendations were reviewed by the team, and some modifications to the system were made accordingly (as recorded in the Decision/Task field). The full UX Evaluation document is provided in [Appendix: UX Evaluation](#).

Release 1

The first stage evaluation was carried out using the guidelines by Nielsen Norman Group to assess usability and the cognitive walkthrough. These methods are used as an initial step in the assessment because they do not require participants.

Part A. Heuristic Evaluation

Website:	Voucher Service - voucher-service-swen.web.app
Technology:	Laptop 13 inches with Mozilla Firefox v.86.0 (64-bit)
Evaluator:	Decy Restyan Damayanti
Date of evaluation:	29/04/2021

Table of Findings

Heuristic (Nielsen, 2000)	Comments	Scope	Freq	Impact & Severity	Recommendation	Decision/Task								
Visibility of system status	No issue													
Match between system and the real world	 Services													
	The app using calendar icon on "Service"	100% Applicable to all users.	10% Applicable to new users	Low Users may not pay attention to the icon used. The application only has 2 menu items, so users do not spend a long time viewing the content on each page.	Using icons, words, and symbols that are familiar to the user saves their time to recognize the page's content. I.e for service  or 	<u>UX1</u> . Update icon to store icon (Xin)								
User control and freedom	<table border="1"> <thead> <tr> <th>Service</th> <th>Message</th> <th>Shipment</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Tea Party</td> <td>-</td> <td>Pick Up</td> <td>29/04/2021, 1:30:51 pm</td> </tr> </tbody> </table>					Service	Message	Shipment	Date	Tea Party	-	Pick Up	29/04/2021, 1:30:51 pm	
Service	Message	Shipment	Date											
Tea Party	-	Pick Up	29/04/2021, 1:30:51 pm											
	There is no button to change the order. If the user enters the wrong date, delivery type, or service, they must contact the admin.	98% Applicable to all customers	50% Applicable to all customers who make a mistake or want to change the order	High Users may feel frustrated because there is no instruction / feature available if they perform action by mistakes.	Gives opportunity for users to change orders by providing an edit button before the order being approved by the admin.	UX2.1 Cancel button to be provided in release 2 (evaluation 18/05/2021 : have been implemented in release 2) UX2.2 modification of the order is out of scope.								
Consistency and standards														

Excerpt of Heuristic Evaluation performed as part of UX evaluation for Release 1

Test Report

Tests were prepared against use cases for Release 1 functionality. The full results are produced in [Appendix: Release 1 Test Report](#).

Test Result							TRUE
Use Case	Scenario	Test procedure notes	Expected result	Responsive	Tested	Result	
0.0 - Login	Login with missing user		Login failure	✓	✓	✓	
0.0 - Login	Invalid password (admin)		Login failure	✓	✓	✓	
0.0 - Login	Invalid password (customer)		Login failure	✓	✓	✓	
0.0 - Login	Login -> admin dashboard		Nav to admin dashboard	✓	✓	✓	
0.0 - Login	Login -> user dashboard		Nav to user dashboard	✓	✓	✓	
0.0 - Login	Login is preserved across tabs	Nav to /services endpoint while logged in as admin in another tab	/services endpoint displayed	✓	✓	✓	
0.0 - Login	Login intercepts /services endpoint		Redirect to login	✓	✓	✓	
0.0 - Login	Login intercepts /bookings endpoint		Redirect to login	✓	✓	✓	
1.0 - CRUD service type	Admin can create service type from dashboard	From /services endpoint		✓	✓	✓	

Excerpt of Release 1 Test Results

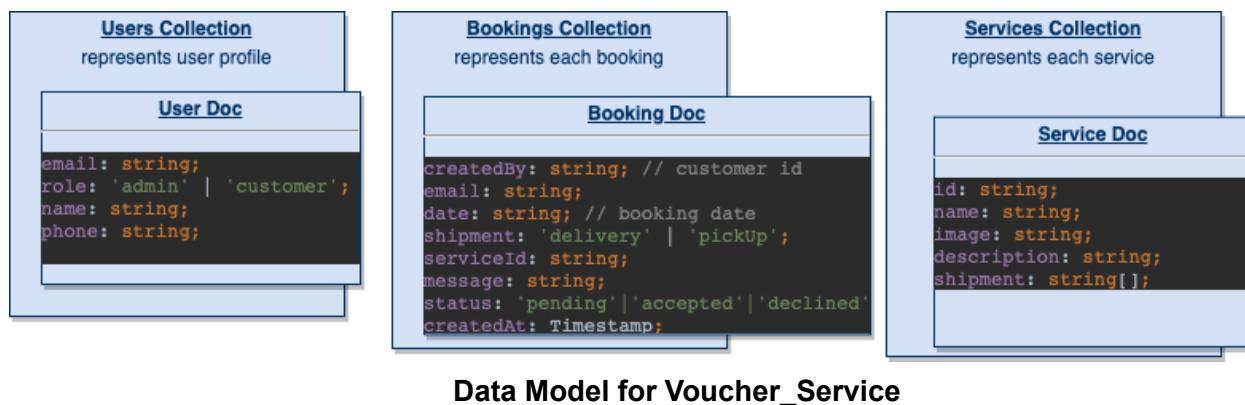
Source code

The commit corresponding to version 1.0.0 has been tagged in the git repo, and is available at the following link: [Release 1.0.0 · swen90016/voucher-service-web \(github.com\)](https://github.com/swen90016/voucher-service-web). A zip of the code is also provided in the PMP attachments as *voucher-service-web-1.0.0.zip*.

Release 1 Documentation

Documentation was produced for Release 1. The full documentation is provided in [Appendix: Source Code Documentation](#). This includes details on:

- Architecture
- Data model
- Development environment: build/test instructions
- Deployment
- Credentials for admin/tester
- Backend - Firebase Cloud functions
- Frontend - React app
- System walkthrough



7.1.3 Risk Monitoring and Control

The risk register was reviewed during the team meeting, with assessment of relevant risks provided below.

Risk 7: Inaccurate estimate of student availability

Some team members have had their availability impacted by personal circumstances and Covid-19, which is now an ongoing challenge for the project. The trigger for this risk (Release 1 is missing functionality) has not occurred. So far there has been no impact to the project

timeline, as Release 1 was deployed one week ahead of schedule, and the development team doesn't believe there will be any schedule impact resulting from this at present.

Risk 16: Email notification service unable to deliver emails and false spam detections

The highest scoring technical risk has not yet been addressed. Initial work on Release 2 to be completed will help to reduce the impact of this risk early by implementing email notification.

Risk 17: Project management tool access removed

The team has identified a risk that the project management tool we have been using (Monday.com), is on a free trial which is due to expire and may prevent access to the Gantt chart tool, however it is uncertain to what extent access will be restricted. This would have a high impact, hindering the ability to monitor project progress and prevent the tutor from viewing our project schedule. A license for this functionality is expensive and beyond the project budget. As a result, Monday.com support has been contacted to ask for an extension to the trial. Microsoft Project, available through the university, is also being investigated as an alternative or complementary Project Management tool in the event that this is unsuccessful.

7.2 Project Status: Friday Week 10

The project is currently on schedule, with work on Release 2 for Voucher_Service underway. Much of the planned functionality has been implemented, including acceptance/cancellation of bookings, as well as updating customer information. The remaining functionality is in work, and expected to be ready for deployment by 17 May as planned. This will enable testing to be undertaken per the Release 2 test plans for UX and use cases that have been completed this week. Email integration was a high-rated risk but initial work has indicated no problems are expected.

Artefacts completed this week include:

- UI mockups, Release 2
- Email templates
- Skeleton code for Release 2
- UX Evaluation plan, Release 2
- Testing plan, Release 2

Looking ahead for the rest of the project, the remaining milestones are:

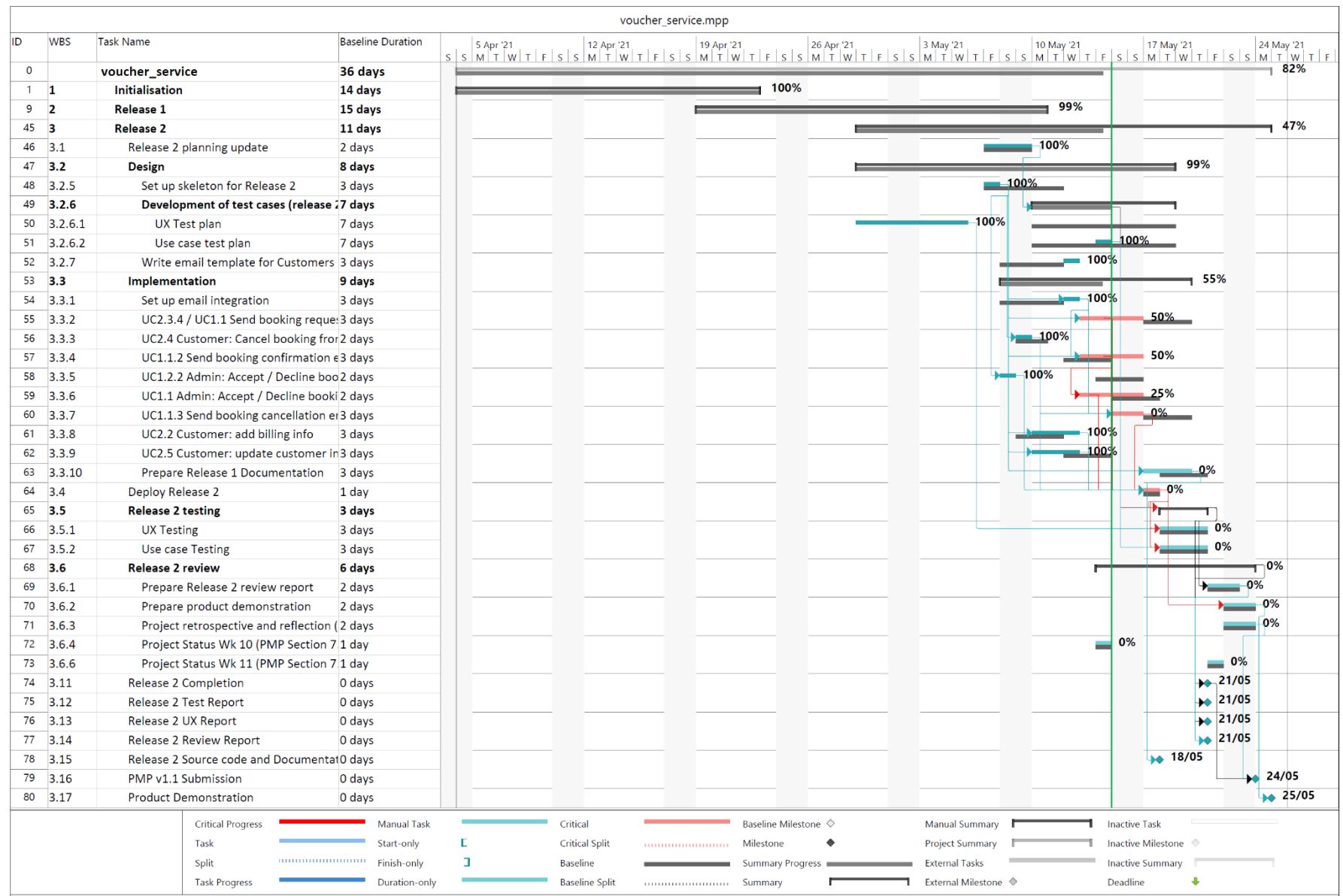
Milestone	Scheduled Completion
Release 2 Source code and Documentation completed	Tue 18/05/21
Release 2 Completion	Fri 21/05/21
Release 2 Test Report completed	Fri 21/05/21
Release 2 UX Report completed	Fri 21/05/21
Release 2 Review Report completed	Fri 21/05/21
PMP v1.1 Submission	Mon 24/05/21
Product Demonstration	Tue 25/05/21

Release 2 is expected to be finished by next Friday 21/5.

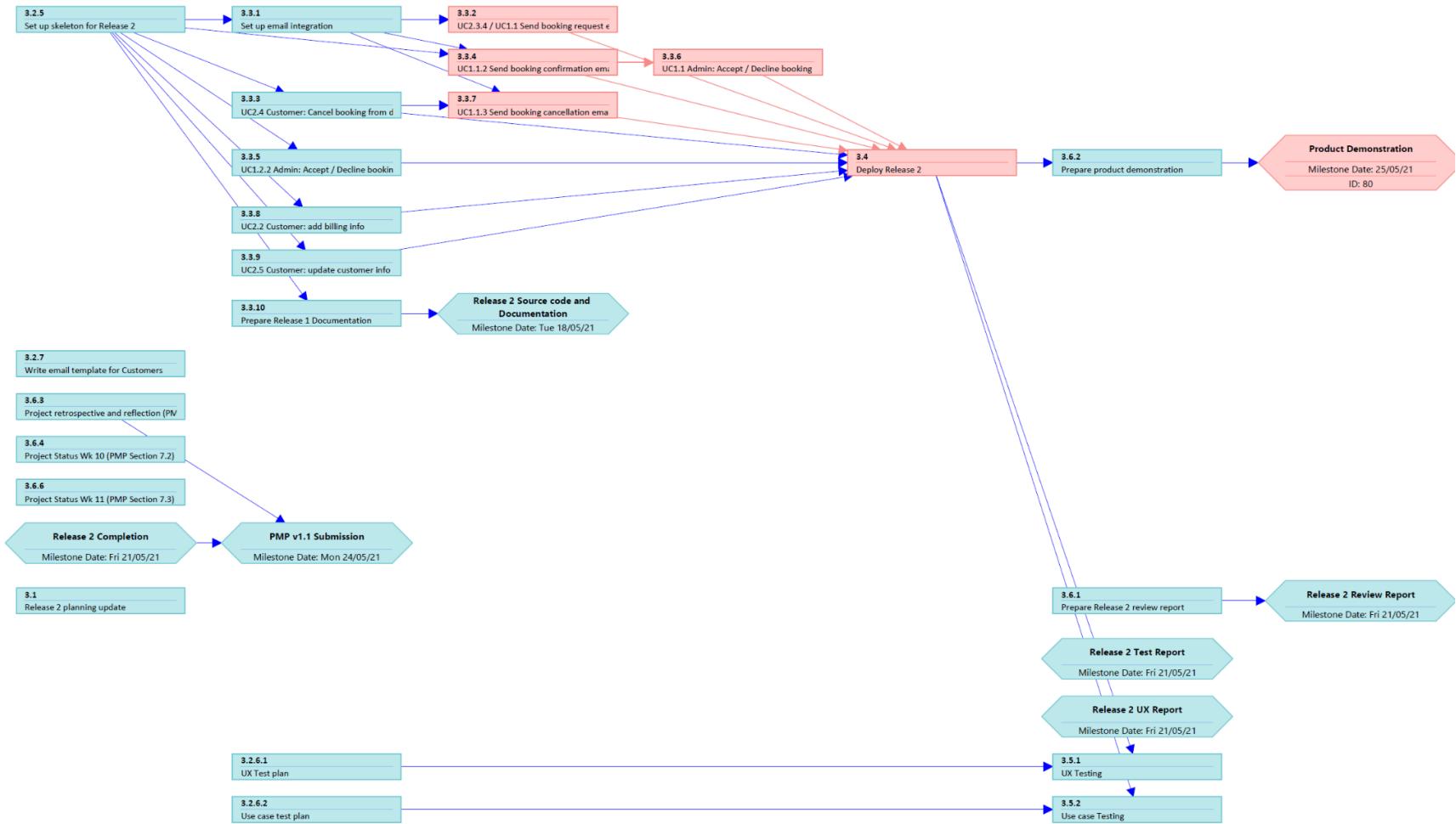
7.2.1 Process Related Artefacts

Progress Gantt Chart

A progress Gantt chart showing current status of each task is shown below:



The critical path for remaining tasks is shown in the network diagram below:



Minutes

Minutes for the team meeting on 14/5 have been included in [Appendix: Minutes \(Week 10 update\)](#).

Timesheets

Timesheets for each team member from 7-May-2021 to 14-May-2021 are shown below:

Name	Date	Duration	Task
Xin	8-May-2021	1 day	Admin accept and decline booking
	9-May-2021	1 day	Customer cancel booking and view booking w/Sakshi
	10-May-2021	2 day	Customer profile and billing w/ Sakshi
	12-May-2021	1 day	Backend code to send emails
Sakshi	9-May-2021	1 day	Customer cancel booking from dashboard
	10-May-2021	2 days	Worked on adding billing info with Xin
Decy	12-May-2021	1 day	Create Email Template for Customers
	12-May-2021	1 day	Create Prototype for Release 2
	13-May-2021	1 day	Create UX Evaluation Scenario
Alastair	14-May-2021	1 days	Test plan development for release 2
James	7-May-2021	< 1 day	Prep, chair meeting week 9
	7-May-2021	< 1 day	Project status week 9
	8-May-2021	< 1 day	Review Release 1 Source Code Documentation
	12-May-2021	< 1 day	PMP v1.0 comment review
	14-May-2021	< 1 day	Prep, chair meeting week 10
Setender	7-May-2021	1 day	Accessibility requirement

Emails re accessibility

Our UX Expert, Decy, flagged concerns that we have not captured accessibility requirements, e.g. ensuring support for screen readers. After discussing with the team, Decy emailed Setender, the business owner, to clarify whether there was a need for this functionality to be implemented. Initially, the business owner stated that they would like the functionality included - the Project Manager pushed back, asking if there was a real need based on the current staff at MYD. Based on this discussion, it was agreed that these accessibility requirements were out of scope, and will be captured for future work.



James Sinclair <jssinc@student.unimelb.edu.au>

Fwd: Voucher Service Requirement

4 messages

Decy Restyan Damayanti <ddamayanti@student.unimelb.edu.au>
To: James Sinclair <jssinc@student.unimelb.edu.au>

Tue, May 11, 2021 at 11:50 AM

Dear James,

This is the email confirmation from the Business Owner about a "special" feature for the website.

Thank you
Decy Damayanti

----- Forwarded message -----

From: setender_nandal <nandalsetender1995@gmail.com>
Date: Sun, May 9, 2021 at 2:04 PM
Subject: Re: Voucher Service Requirement
To: Decy Restyan Damayanti <ddamayanti@student.unimelb.edu.au>

Hey Decy , thanks for raising the question , As a Business owner , I don't think so I need the special requirement in the website . As such we should keep the website user friendly and simple . For the instance , it will be great if you provide the voice reader for the vision impairment user so that they can use the website easily and don't get any issue with them .

Your sincerely,

Setender nandal (Business owner)

On 30 Apr 2021, at 4:14 pm, Decy Restyan Damayanti <ddamayanti@student.unimelb.edu.au> wrote:

Hi Setender,

I am Decy, a student team member from the University of Melbourne building a voucher service website.

We have a question related to the website specification.

Do you have special requirements for people with particular barriers?

For instance, should we provide a voice reader for vision impairment users?

Yours sincerely

Decy Damayanti

James Sinclair <jssinc@student.unimelb.edu.au>
To: SETENDER NANDAL <nandals@student.unimelb.edu.au>
Cc: Decy Restyan Damayanti <ddamayanti@student.unimelb.edu.au>

Tue, May 11, 2021 at 3:17 PM

Hi Setender,

Following up from your exchange with Decy, could you please clarify whether the inclusion of screen reader functionality is essential for this initial development project? It may help to consider if there are any employees currently at MYD who would need this functionality. Our current project plan does not include this feature, so we would likely need to modify the project schedule if it is considered essential. Alternatively, we can record this feature to be out of scope for the current project but a target for future development. Please advise the preferred approach on this issue.

Regards,
James Sinclair (Project Manager)

[Quoted text hidden]

SETENDER NANDAL <nandals@student.unimelb.edu.au>
To: James Sinclair <jssinc@student.unimelb.edu.au>

Tue, May 11, 2021 at 4:00 PM

Hey James , thanks for clarifying me , I think it's not essential to include at this stage as there are no staff at MYD with these requirements, but it is still nice to have in case MYD hires new staff.

thanks and warm regards,

setender nandal
[Quoted text hidden]

James Sinclair <jssinc@student.unimelb.edu.au>
To: SETENDER NANDAL <nandals@student.unimelb.edu.au>
Cc: Decy Restyan Damayanti <ddamayanti@student.unimelb.edu.au>

Tue, May 11, 2021 at 5:00 PM

Thank you for the clarification - we will record this feature as out of scope for this project.

Regards,
James
[Quoted text hidden]

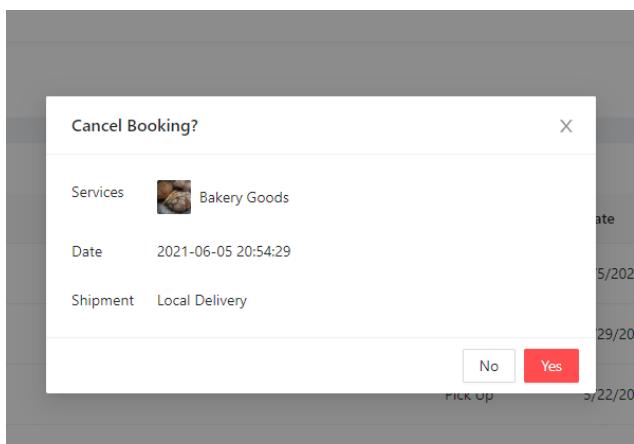
7.2.2 Product Related Artefacts

Completed Features

Features completed in the last week include:

- Admin can accept and decline booking from dashboard
- Customer can cancel bookings from the dashboard
- Customer can update profile and billing information

Screenshots of these features are shown below:



Customer can cancel bookings from the dashboard: If a customer wants to cancel the booking, he/she can do it by clicking on the cancel button right to the view option and can confirm cancellation by clicking on yes or no.

A screenshot of an Admin dashboard titled "Voucher Services". On the left, there is a sidebar with "Bookings" selected, along with "Services" and "Settings". The main area displays a table of bookings. The columns are: Service, Customer, Message, Shipment, Date, Status, and Operation. The table contains ten rows of booking data. For example, the first row shows a booking for "Bakery Goods" from "Test Customer" with the message "Hi". The status is "ACCEPTED" and the operation is "Accept". The last row shows a booking for "Flowers" from "Participant 1" with the message "-". The status is "CANCELED" and the operation is "Decline".

Admin can accept and decline booking from dashboard: Once a customer makes a booking, the admin page shows an option for decline or acceptance. If the admin accepts

the order, the status of the order is changed to ACCEPTED to both customer and admin booking page else it is changed to DECLINED.

The screenshot shows a sidebar with navigation options: Bookings, Services, Profile, and Billing. The Billing option is selected and highlighted in blue. The main content area is titled "Update profile". It contains two input fields: "Biller Email" and "Name On Invoice", each with a placeholder icon. Below the fields are two buttons: "Reset" and "Submit".

Add billing information/ update billing information: If a customer wants to add/change the booking information, he/she can do it by clicking on the booking option.

UI Mockups - Release 2

Mockups were prepared for new features in Release 2. Refer to [Appendix: UX Report - Prototype, Release 2](#) for full details. As an example, the image below shows the initial mockup of the form to update customer information:

The mockup shows a sidebar with a logo and navigation links: BOOKING, SERVICES, PROFILE (highlighted in blue), and BILLING INFO. The main content area is titled "Profile". It contains two sections: "Update Profile" and "Update Password". The "Update Profile" section has three input fields: "Customer Name", "Customer Email", and "Date & Time". Below these fields are two buttons: "CANCEL" and "UPDATE". The "Customer Name" field has a placeholder "Customer Name" and a circular placeholder icon with the text "Customer Name". The "Update Password" section has two input fields: "Current Password" and "New Password". A note at the bottom states "minimum 8 character ABC 123". Below these fields are two buttons: "CANCEL" and "UPDATE".

Email Templates

Email templates have been prepared by our UX professional, providing the text for emails sent by Voucher_Service. Refer to [Appendix: Email Templates](#) for details of each template. The templates prepared cover the following cases:

Template	Recipient	Purpose
1	Admin	New booking created
2	Customer	Voucher booking accepted
3	Customer	Voucher booking declined
4	Admin	Order cancellation by customer
5	Customer	Support request - Issue resolved

Template 2 is shown below as an example:

2. TO CUSTOMER : ACCEPT VOUCHER BOOKING

Thanks David, your Click & Collect order is confirmed

ORDER NUMBER: MYD-6481222

Name : DAVID KHIELS

Phone Number : 056711097

Email : dkhiels@myd.com

Date & Time : 21 May 2021 16.00

Location : FLORO MELBOURNE CENTRAL DISTRICT
SHOP 101
MELBOURNE DISTRICT
MELBOURNE VIC 3000

[View detail orders](#)

UX Evaluation Plan

A UX evaluation plan has been developed which will use five external testers to undertake planned scenarios and score the site against several criteria. It is expected that five testers will be sufficient to highlight the major usability issues. A consent form and plain language

statement have been prepared. Refer to [Appendix: UX Evaluation](#) - Release 2 for full details. Heuristic analysis, as used in Release 1, will also be conducted.

Below are the 5 scenarios testers will be asked to complete.

1. Register

Today your office is distributing vouchers worth 100 points that can be used on website service vouchers. Find a way that you can enter the homepage of the website

2. Order Flower - pickup

On Friday, you want to buy flowers for your girlfriend. You plan to pick it up after work before you meet her. Can you do that?

3. Cancel Order

You find out that your girlfriend is allergic to flower pistil, so you will immediately drop your flower order. How can you do that?

4. Contact Admin

When visiting a store, you see a Christmas hamper that is not available on the services list website. You want to suggest to the admin to add that product. How can you do that?

5. Update Password

Yesterday you ordered flowers from your colleague's PC and clicked activated the password reminder in his browser. So that you want to update your password today. Can you do it?

Source Code

The source code for the current Release 2 functionality is available in the GitHub repository (commit [f3e4f3d](#)).

Test Plan

A test plan has been developed for Release 2 functionality against use cases developed. This test plan also includes the tests from the Release 1 test plan to prevent regression. An overview of new test cases is provided in the table below. See [Appendix: Release 2 Test Report](#) for full details.

Test Result		
Use Case	Scenario	Test procedure notes
2.3.4 - Booking request email notification	Will need a tester-accessible email account for testers. UX spec not yet defined (see monday issue)	Email latency should be <1m
2.4 - Cancel booking from dashboard	Cancelled bookings should update state on the dashboard	Pay attention cancel / confirm buttons
1.1.2 - Booking confirmation email	Refer to this doc for email UX	Email latency should be <1m
1.2.2 - Admin accept/decline booking from dashboard	Accept booking	
1.2.2 - Admin accept/decline booking from dashboard	Decline booking	
1.1 - Admin accept/decline booking from email	Accept booking	
1.1 - Admin accept/decline booking from email	Decline booking	
1.1.2 - Booking acceptance email		Email latency should be <1m
1.1.3 - Booking cancellation email		Email latency should be <1m
2.2 - Customer add billing info		
2.5 - Customer update customer info		

7.2.3 Risk Monitoring and Control

The risk register was reviewed during our team meeting. The assessment of current risk status is discussed below.

Risk 7: inaccurate estimate of student availability

Student availability was reduced this week, due to a combination of high course load, Covid-19 impact, and other commitments such as work. Many of the tasks have nonetheless been completed on time. This is due to diligence on the part of the team to communicate about their limited availability and plan their time well. Having a clear project schedule that has been

monitored by the project team has helped us to stay on task and check how much work needed to be completed this week without falling behind. The initial estimates of task duration, especially regarding development tasks, appear to have been conservative, providing some buffer against limited student availability.

Risk 16: Email notification service unable to deliver emails and false spam detections

To address this risk, an initial trial was conducted by the development team to ensure that Voucher_Service is able to send emails. This gives confidence that the risk has been effectively mitigated, and will not eventuate for the demonstrated system.

Risk 17: Project management tool access removed

This risk eventuated as the Monday.com trial period expired, however the impact was smaller than anticipated, as we were still able to access the Gantt chart (however with reduced functionality). Monday.com support was contacted but have not replied so far. The project schedule is also in the process of being migrated to Microsoft Project as part of the mitigation activities. An advantage of this approach is that we now have a good collaboration tool for monitoring team status, as well as a heavyweight project management tool which has many more features, but is poor for collaboration.

7.3 Project Status: Friday Week 11

Release 2, the final release for this project, has been deployed, with all planned functionality implemented. UX testing has been completed with external participants testing the functionality of Voucher_Service. There are some small updates currently in work as a result of feedback from UX testing, expected to be finished tomorrow. Testing per use case is also in work, and is expected to finish tomorrow. Documentation for Release 2 is nearing completion.

Completed Milestones

- Release 2 Deployed
- Release 2 UX Report complete

Remaining Milestones

- Release 2 Test Report
- Release 2 Review Report
- Release 2 Source code and documentation
- Release 2 Complete

7.3.1 Process Related Artefacts

Progress Gantt

A progress Gantt chart at 21/5 is shown below, with dependencies hidden for clarity. Several tasks have slipped behind schedule, however the team anticipates completion of all deliverables by project finish date. The remaining critical task is use case testing.



Minutes

Minutes for the team meeting on 21/5 are attached in [Appendix: Minutes \(Week 11 update\)](#).

Timesheets

The timesheets for each team member from 15-May-2021 to 21-May-2021 are shown below:

Name	Date	Duration	Task
Xin	17-May-2021	5 days	Preparation of release 2 source code and documentation
Sakshi	17-May-2021	5 days	Preparation of release 2 source code and documentation
	17-May-2021	2 days	Conduct Loop11 Test
	19-May-2021	1 day	Conduct Heuristics Evaluation & Collect Loop11 Result
	20-May-2021	1 day	Analyse Loop11 Result
	21-May-2021	1 day	Update PMP (constrain, benefit, communication plan)
	22-May-2021	1 day	Finish UX Report for final release
Decy	20-May-2021	<1 days	Review UI spec for release 2
	22-May-2021	<1 days	Testing for release 2
	23-May-2021	<1 days	Update scope definition sections of PMP
Alastair	15-May-2021	< 1 day	Project status week 10
	18-May-2021	< 1 day	Review UX testing documentation release 2
	19-May-2021	3 days	PMP updates based on feedback
	21-May-2021	1 day	Project status week 11
Setender	21-May-2021	2 day	review on the documentation pmp release 2

Addendum: Timesheets for 21-May-2021 to 24-May-2021 are shown below:

Name	Date	Duration	Task
Xin	21-May-2021	1 day	Updates based on UX evaluation
	22-May-2021	1 day	Updates based on use case testing
Sakshi	17-May-2021	5 days	Preparation of release 2 source code and documentation
Decy	22-May-2021	1 day	Finish UX Report for final release
	22-May-2021	<1 days	Testing for release 2
Alastair	23-May-2021	<1 days	Update scope definition sections of PMP
	23-May-2021	1 day	PMP final edit
All	21-May-2021	3 days	Project Retrospective

7.3.2 Product Related Artefacts

Completed Features

Release 2, version 1.1.0 has the following new features:

- Customer able to view booking in a modal
- Customer able to cancel booking via a confirm dialog with yes/no button
- Sends email to admin when booking is cancelled
- Admin able to accept booking
- Admin able to decline a booking
- Sends email to the customer when booking is accepted
- Sends email to the customer when booking is declined
- Sends email to admin when booking is completed by the customer

The following UI changes are in work:

- UI change: Increase contact us button visibility
- UI change: Reverse profile and billing form submit button order

Select features are shown below:

The screenshot shows an email from 'No Reply' to 'voucher.service.swen, adalvis, ddamayanti, xind1, jssinc, nandals, me'. The subject is 'Booking Cancelled By Customer'. The email body contains the following text and a table of booking details:

Booking Cancelled By Customer

Name:	Tester 13
Phone:	0450240510
Email:	xdd13test@gmail.com
Date:	29/05/2021
Time:	5:36 PM
Service Name:	Hi
Delivery Mode:	Pick Up

Sends email to admin when booking is cancelled: Admin and people in the mailing list receive an email whenever a booking gets cancelled by a customer. The customer also gets the same cancellation email.

No Reply
to voucher.service.swen, adaivis, ddamayanti, xind1, jssinc, nandals, me • 11:04 AM (5 minutes ago) ☆ ⌂ ⋮

New Booking Recieved

Name: Tester 13
Phone: 0450240510
Email: xdd13test@gmail.com
Date: 29/05/2021
Time: 5:36 PM
Service Name: Hi
Delivery Mode: Pick Up
Message:

View Bookings

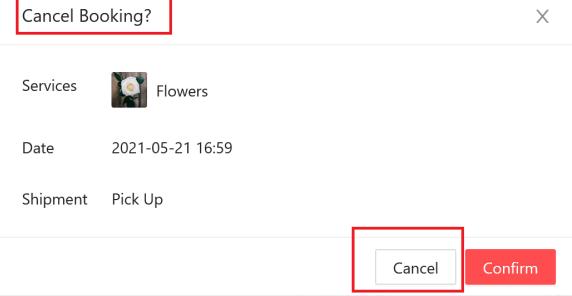
Admin accepts email regarding new booking: Whenever a customer books an order, admin/staff members (whoever is in the email list) receives an email regarding the booking in order to either accept or decline.

Source Code

The source code corresponding to Release 2 is available in the git repository at the following link: [1.1.0](#). A zip of the code is also provided in the PMP attachments as *voucher-service-web-1.1.0.zip*. Documentation for Release 2 is provided in [Appendix: Source Code Documentation](#).

UX Evaluation

Voucher_Service underwent heuristic evaluation and user testing as per the UX test plan. The heuristic evaluation determined one issue requiring action. Shown below is an excerpt of the heuristic evaluation concerning the booking cancellation form, which was found to contain ambiguity. Refer to [Appendix: UX Evaluation](#) - Release 2 for full details.

Heuristic (Nielsen, 2000)	Match between system and the real world
Comments	 <p>The meaning of “cancel” on the text button is ambiguous</p>
Scope	98% applicable to all user
Frequency	98% applicable to all user
Impact & Severity	30% Regular user may understand this term
UX Recommendation	Replace text button with “No” and “Yes”
Team Decision	Recommendation will be implemented.

Additionally, 5 external participants were asked to undertake test scenarios and score their experience. Full results are provided in [Appendix: UX Evaluation](#) - Release 2.

An example of responses to one task are shown below:

Task 6: Cancel Order

You find out that your girlfriend is allergic to flower pistil, so you will ... ↗

You find out that your girlfriend is allergic to flower pistil, so you will immediately drop your flower order. How can you do that?

Statistics

Complete	Abandon	Lostness	Avg Page Views	Avg Duration
100%	0%	0.57	3.6	01:01

Page views to complete task

	All	Complete	Abandon
Average	3.6	3.6	
Maximum	13	13	0
Minimum	2	2	0

Time to complete task

	All	Complete	Abandon
Average	01:01	01:01	
Maximum	04:27	04:27	
Minimum	00:20	00:20	

Clickstream & Heatmaps

Most common first click pages

Page URL	Response Count
https://voucher-service-swen.web.app/ ↗	5 (100%)

The summary of results is provided below.

Date	: 17 May 2021 - 18 May 2021
Evaluator	: Decy Restyan Damayanti
Participants need less than 5 minutes to complete each task. In the first task (register), the maximum time required is around 12 minutes because participants need time to adapt to Loop11 [the testing system]. Based on the answers to questions 9-13, website design gets a good response. Participants find the website relatively easy to use and quite efficient. All participants agreed that they could see what they wanted very quickly.	
The dashboard shows that of the five tasks given, a participant abandoned "change password" and a participant abandoned "contact admin". Four out of five participants found it challenging to find the "contact admin" menu because the text was too small and located at the bottom of the page.	

As a result of these findings, the team agreed to increase the size of the *Contact Admin* menu.

UX Report

Further discussion of the results of the UX Evaluation and recommendations for future work have been provided in [Appendix: UX Report](#).

Test Report

This artifact was in work at the time of the status report. The final test results will be provided in [Appendix: Release 2 Test Report](#).

7.3.3 Risk Monitoring and Control

Risk 7: inaccurate estimate of student availability

As noted in the progress Gantt chart, several tasks this week fell slightly behind schedule. This was due to low student availability resulting from a combination of high course load, Covid-19 impact, and external commitments. However, all tasks that are overdue are partially underway and expected to be completed over the next 2 days, with clear plans agreed to during the team meeting for completion on time. Whatsapp will also be monitored closely by the team to help address any issues that arise. As we were able to monitor the schedule closely throughout the project, this week was the first week that several tasks were behind schedule, and so the impact has been minimised, which can be accommodated with some additional team input over the weekend.

8. After the project

The team met for a project retrospective and reflection on working as a team on 23/5.

8.1 Project Retrospective

Lessons learnt are captured in the project retrospective sheet below, following the approach of Kerth (2013).

Project Retrospective	
<i>Project Name</i>	Website development for MYD Voucher Service System
<i>Date</i>	23/05/2021
<i>Effort</i>	Project period : 1 month Team member : 6 students SWEN90016 Unimelb Cost : 0
<i>Lessons learnt</i>	<p><i>Teamwork Delegation and Collaboration</i></p> <ul style="list-style-type: none">- TODOs integrated with IDEs worked well for collaborating and delegating tasks <p><i>SDLC Choice</i></p> <ul style="list-style-type: none">- Incremental using two releases seemed to fit pretty well for the reasons we chose it. The primary features could be implemented early, getting the developer team up to speed quickly, with the opportunity to change course if need- Hard to tell if agile would have produced a better result, but we anticipate that it would have been more challenging to negotiate the process, given we have no experience- Given limited team availability, a formal approach worked well as it was clear what needed to be done by who and when, so it was quite clear whether we were on schedule or not, and quite clear what needed to be done <p><i>Technology</i></p> <ul style="list-style-type: none">- Because of limited web dev experience, some developers needed time to get up to speed with the tech stack, but received good guidance from the Tech SME

	<ul style="list-style-type: none"> - React/Firebase was a good choice for this project, as we were able to implement the functionality on schedule with no major hiccups
	<p><i>PM tool and subscriptions</i></p> <ul style="list-style-type: none"> - Monday.com has a problem with a free trial (not explicitly stated feature limitation) - Monday.com is suitable for collaboration but lack of project management features, i.e. network diagrams, plotting critical path - Microsoft Project has most of the expected feature but has a clunky interface and lack of integration with cloud-based tools - A member feels that Monday.com was confusing, however email notifications were found to be useful by the team to help keep up to date
	<p><i>Time/effort estimation accuracy</i></p> <ul style="list-style-type: none"> - Several development tasks were done faster than initially planned - It was not easy to calculate student's time, with lots of impacts beyond our control - Sometimes the team members did not update the board schedule on time, so it can be challenging to measure the completion of tasks accurately
	<p><i>Quality</i></p> <ul style="list-style-type: none"> - Tests picked up bugs and there was good communication and a good workflow surrounding these
<i>Was the load evenly spread?</i>	<ul style="list-style-type: none"> - Reasonable spread of tasks - Everyone contributed to group chat and team meetings
<i>Was the communication plan followed closely?</i>	<ul style="list-style-type: none"> - No <i>per release</i> emails were sent out - Whatsapp was more effective than expected, removing the need for some of the emails planned - Use of live tools e.g. google sheets, meant some emails were not needed

<p><i>What worked well</i></p>	<p><i>Teamwork and Collaboration</i></p> <ul style="list-style-type: none"> - Detailed meeting notes are beneficial for team members who miss a meeting - Notification of tasks delegation, reviews, comments on google docs or monday.com to email, helping team members to engage with their duties quickly - Communication went well - Meetings with clear agendas, sticking to the time limit worked well for the team <p><i>SDLC Choice</i></p> <ul style="list-style-type: none"> - Selection of incremental as SDLC is an excellent choice to avoid an accumulation of work at the end <p><i>Technology</i></p> <ul style="list-style-type: none"> - Project delivered on time with expected features because of technology support
<p><i>What did not work well</i></p>	<p><i>Teamwork</i></p> <ul style="list-style-type: none"> - Reviews of work did not always happen in a timely manner - Inconsistent availability means sometimes team members do not have time to work on projects

8.2 Teamwork Reflection

During the retrospective session, the team discussed what roles we each played. Each team member's roles are summarised below:

James	<ul style="list-style-type: none">- <i>Coordinator/Evaluator</i> As the PM, I was primarily focused on combining the output of others, such as preparing summaries or cross-referencing others' work for the PMP. I also reviewed most artifacts, providing feedback for quality improvements.- <i>Harmoniser</i> I sometimes occupied this role, trying to build consensus during team meetings e.g. during test review on the appropriate course
Decy	<ul style="list-style-type: none">- <i>Standard setter</i> As a UX Expert (role), I want to make sure that the final product of this project is well received, user-friendly, and provides a good experience. I did usability testing, focused on the users, and measured how the product met their expectations and supported their goals. However, as a team member, I have to consider the developers' load and project's scope. Based on the evaluation results, I tried to provide some alternatives to increase the effectiveness, efficiency, and user satisfaction while using the product, considering the urgency and scope of the project.- <i>Follower</i> In some cases, I am a follower if I feel the arguments of other team members are reasonable. I realize that my skills are still lacking, for example for very technical matters, so in that particular area I chose to agree with the consensus.
Xin	<ul style="list-style-type: none">- <i>Initiator</i> As an Initiator, I researched different technology stacks and brainstormed ideas to develop the system. I proposed unique serverless ways to achieve project goals. I've also suggested new ideas such as incorporating cloud services to accelerate development and simplify testing.- <i>Information giver</i> As an information giver (Tech SME), I shared my web development experiences with the team, such as React best practices, serverless architecture, limitations of each framework and recommendations on which tools/libraries to use. I used my skill set to help with development and help other developers to catch up to speed.

Sakshi	<p><i>- Follower</i></p> <p>I was unfamiliar with React, and followed the guidance of the Technical SME. Also, I followed the PM on functionality which needs to be built. I followed Xin with the technology part and also other team members whenever I felt they were right.</p> <p><i>- Information seeker</i></p> <p>As Information seeker, I gained information about new technologies like React and Firebase for development and also gained information on how to write Source code and documentation in a proper way. Also, I gained information on how to write PMP in a better way and a proper format with my team members in a collaborative approach.</p>
Setender	<p><i>- Group observer</i></p> <p>As the business owner, I mostly occupied the role of group observer, providing feedback on progress from the lens of MYD. This was shown in my feedback on test cases, review of releases, and feedback on PMP quality.</p>
Alastair	<p><i>- Standard setter</i></p> <p>Filling the senior user role, I coordinated with Decy and Xin to perform manual testing on each release, taking on the perspectives of end-users and administrators of the application to ensure the application fit the users needs. I also helped determine which features were in and out of scope, with the aim of focusing development, testing, and design time on features relevant to the goals of the project.</p> <p><i>- Information giver</i></p> <p>As information giver, I tried to identify issues with the system design early in the development process and communicate those issues and their potential solutions to the group. Some examples of this include discussing potential errors caused by users being in different time zones, the inclusion of Lighthouse reports on website performance and accessibility in the test plan, and bringing attention to website behaviour on mobile devices.</p>

To assess how the team worked together, we discussed the following questions.

Did we collaborate well?

The development team worked closely on implementing functionality. The team also reviewed each other's artefacts, and as a team, reviewed test results, reaching consensus on the path forward (e.g. whether a previously unplanned modification was in scope or not). The team was overall happy with our collaboration.

How well did the team communicate?

The team discussed how well communication worked for us on each channel:

- **Whatsapp:** the group chat worked well for day to day communications while working remotely (see [Appendix: Whatsapp Messages](#) for examples)
 - We could have sent short notes more often summarising what people had been working on and had found to ensure everyone was up-to-date
- **Google docs comments:** we often reviewed documents by leaving comments on Google docs/sheets. This was really beneficial for collaboration, as team members could leave quick suggestions, notifying the other team member, which helped to reduce communication overhead.
- **Email:** overall email was used infrequently, much less than initially planned, as instant messaging via Whatsapp was sufficient
 - Email was used effectively to contact teaching staff, for example, when we were missing a booking slot for the project demonstration. This was then resolved quickly.
- **Discussion forum:** the group only posted a couple of questions, but this was fine as there weren't too many questions that needed answering. The discussion board was checked by team members every so often, and useful information was shared in team meetings or in the group chat
- **Zoom:** team meetings happened via Zoom, and most people did not use their webcam so communication was primarily audio plus screen share. This could sometimes make it difficult to get team members to speak.
 - Zoom meetings generally worked well for the team, there were a few technical glitches but was largely a positive experience
- **Monday:** helpful tool to communicate status of tasks/point out artifacts, but it wasn't always kept up to date and sometimes comments were missed
 - One issue raised was that there were no notifications when the predecessor of a dependent task was completed. This could cause a delay in starting work. Future communications plans should indicate that any tasks with dependencies should be communicated via the group chat on completion.

Overall, the team was happy with our communication throughout the project. Everyone contributed, team members were forthcoming, and there were no absenteeism issues.

Was meeting frequency/length/style suitable?

The team used weekly meetings as the primary coordination session. These generally went for one hour. The team felt that these generally worked well, as:

- A rough agenda was worked out ahead of time, which helped the team prepare and make the most of the time.
- Meeting notes were detailed and helped the team to review what had been discussed, or catch up if they weren't able to attend.
- The meetings were well attended, and mostly kept to the allotted time.

Ad hoc meetings were also held a few times (e.g. the project retrospective).

The team were happy with the meeting frequency, but some of the team thinks adding a 15 minute status meeting halfway through the week would help with coordination, however availability would have made this challenging.

What would we do the same if we worked together for another project?

- We should adopt a similar communications approach, primarily using Whatsapp for day-to-day communications, with face-to-face meetings if possible, otherwise weekly Zoom meetings.

What would we do differently if we worked together for another project?

- Make a habit of sending summary messages to the team when artifacts are complete etc to keep all up to date and in the loop.
- Should probably have a more in depth slot in meetings for risk review.
- Use github issues for issue tracking/resolution.
- Add a 15 minute status meeting halfway through the week.

What were the benefits of working together, as opposed to working alone?

- The development team had the opportunity to build skills in new technologies (React), and the technical SME had the opportunity to build leadership and delegation skills.
- The team recognised that we all brought varying backgrounds and expertise, and that we came up with better solutions by hearing a range of opinions, compared to working alone.
- The team was there to help when we weren't sure how to proceed.
- Having reviews of project artefacts helped improve artefact quality.

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Appendix: Use Cases

List of actors:

ADMIN
CUSTOMER

List of types:

SERVICE TYPE
PENDING BOOKING

- Service type (required)
- Delivery type (delivery / pick-up) (required)
- Booking date and time (required)
- Message

BOOKING

- Same fields as pending booking

CUSTOMER INFORMATION

- Name
- Email
- Phone number

BILLING INFORMATION

0.0 Login

In this section, “resource” may refer to any URL associated with the service, including:

URLs used to serve web pages
URLs used to access REST or database resources.

0.0.0 Login page

As a CUSTOMER or ADMIN of the service,
When I try to access any component of the service without being first authenticated,
I want to be presented with a login screen requiring me to enter my:

email address, and
password

This information should be encrypted in transit, and at rest (if it is ever stored in a persistent manner).

0.0.1 Login Failure

As a CUSTOMER or ADMIN of the service,
When I enter invalid credentials during a login interaction,
I want to access an error page.

0.0.2 Login Success with invalid destination

As a CUSTOMER of the service,
When I enter invalid credentials during a login interaction,
And the original resource I was trying to access was an ADMIN-RESTRICTED resource,
I want to access an error page.

0.0.3 Login Success with valid destination

As a CUSTOMER of the service,
When I enter valid credentials during a login interaction,
And the original resource I was trying to access was NOT an ADMIN-RESTRICTED resource,
I want to access to the resource I was trying to access.

1. ADMIN

1.0 CRUD service types

1.0.0 Add service types

As the ADMIN, I want to be able to add new service types to the list of service types accessible by vouchers.

The SERVICE TYPE information should include:

Display name
Point value

1.0.1 View service types

OUT OF SCOPE

As the ADMIN, I want to be able to view the list of service types accessible by vouchers.

1.0.2 Remove service types

OUT OF SCOPE

1.1 Bookings

1.1.0 Notification

As the ADMIN,
When a CUSTOMER makes a new PENDING BOOKING using the service,
I want to receive an email containing the following information:

CUSTOMER name
CUSTOMER phone number
CUSTOMER email address
PENDING BOOKING date and time
PENDING BOOKING message included by the CUSTOMER

The email should also include:

A button I can use to accept the PENDING BOOKING
A button I can use to decline the PENDING BOOKING

At this stage in development, validating this information is OUT OF SCOPE (invalid emails / phone numbers are ok)

1.1.1 Accept / Decline buttons in notification email require login

As the ADMIN,
When I click the accept or decline button included in the email in Notification while not logged in,
I want to be taken to a login page,
and on success taken through the accept / decline flow as described in:

- 1.1.2 (accept button), and
- 1.1.3 (decline button)

1.1.2 Accept button after login

As the ADMIN,
When I click the accept button included in the email in Notification while not logged in,
IF the PENDING BOOKING object still exists,

An email confirming the booking should be sent to the email associated with the CUSTOMER who made the booking.

The email should include:

- The CUSTOMER Name, Phone number, and Email address
- The PENDING BOOKING date, time, and delivery type

The PENDING BOOKING should be replaced with a BOOKING object

I should see a confirmation page showing the details of the booking that was accepted, using the same information as shown in the original email.

1.1.3 Decline button after login

As the ADMIN,
When I click the accept button included in the email in Notification while logged in,
IF the PENDING BOOKING object still exists,

An email stating that the booking has been declined should be sent to the email associated with the CUSTOMER who made the booking.

The email should include:

- The CUSTOMER Name, Phone number, and Email address
- The PENDING BOOKING date, time, and delivery type

The PENDING BOOKING should be deleted

I should see a confirmation page showing the details of the booking that was cancelled, using the same information as shown in the original email.

1.1.4 Accept / Decline of cancelled booking

As the ADMIN,
When I click the accept button included in the email in Notification while logged in,

IF the PENDING BOOKING object no longer exists,
I want to see a page informing me that the booking has already been cancelled.

1.2 Admin dashboard

Admin user must be able to view a list of all Voucher_Booking requests for all Voucher_Service_Types.

1.2.1 Dashboard requires login

As the ADMIN,
When I try to access my dashboard while not logged in,
I want to be taken through the login flow,
And taken to the dashboard on success

1.2.2 Dashboard

As the Admin,
When I access my dashboard while logged in,
I want to be able to access a list of all PENDING BOOKING objects, with the following information for each:

- Customer name
- Date and time
- Service type
- Accept / Decline buttons (behaviour as described here)

2. CUSTOMER

2.0 Registration

2.0.0 Registration

As a CUSTOMER
I want to be able to register my profile with the system by accessing a web url
I expect to need to provide:

- My name
- My contact phone number
- My email address
- A password

After registration, I expect to be taken to the dashboard.
At this stage, phone number and email address verification are out of scope.

2.1 Dashboard

2.1.0 Dashboard requires login

As a CUSTOMER,
After registering my profile with the system,

When I try to access my dashboard while not logged in,
I want to be taken through the login flow

2.1.1

As a CUSTOMER,

When I access my dashboard while logged in, I want to be able to access

A way to access the billing info flow

A way to access the update customer info flow

A way to access the add booking flow

A list of future bookings, with a way to access the cancel booking flow for each

2.2 Add *billing info*

2.2.0 Add *billing info* requires login

As a CUSTOMER, after registering my profile

When I try to add my billing information while not already logged in

I want to be taken through the login flow,

and directed to the add *billing info* page on success

2.2.1 Add *billing info* page

As a CUSTOMER, after registering my profile

When I try to add my billing information while logged in,

I want to be able to enter my booking information in a form.

The information should include:

The name to be included in any invoice sent to me

The email address to send any invoices to

2.3 Add *Booking*

2.3.0 Add *Booking* requires login

As a CUSTOMER, after registering my profile,

When I try to access the add-booking flow while not logged in

I want to be taken through the login flow,

and directed to the add booking page on success.

2.3.1 Add *Booking* page

As a CUSTOMER, after registering my profile

When I try to access the add-booking flow while logged in

I want to be able to enter my desired booking information in a form

This information should include:

Service type (from a drop-down)

Delivery type (Delivery or Pick-up)

The date and time the delivery should take place

- Date and time should be displayed in Melbourne local time (regardless of time zone on user's machine)

A message to associate with the booking, which may be blank

None of these values should have pre-filled content.

2.3.2 Booking submission button

As a CUSTOMER, after registering my profile

When I have entered booking information on the add booking page,

And that information includes at least:

Service type,
Delivery type,
Date and time

A button should become available that, when clicked, will:

1. Deduct the appropriate point value from my CUSTOMER INFORMATION, if possible
2. Create a PENDING BOOKING using the information I have described

2.3.3 Booking submission button availability

As a CUSTOMER, after registering my profile

When I have entered booking information on the add booking page,

And that information does not include at least:

Service type,
Delivery type,
Date and time

The button described in booking submission button should be inactive or otherwise unavailable.

2.3.4 Pending booking creation notifies admin

This is the same as Admin: bookings

2.3.5 Booking failure

As a CUSTOMER,

When I attempt to make a booking

If I have an insufficient number of points in my CUSTOMER INFORMATION

I want an error message to be displayed

AND the PENDING BOOKING to not be created

2.4 Cancel Booking

2.4.0 Cancel button shows a confirmation dialog

As a CUSTOMER,

When I click the “cancel booking” button on the dashboard

I want to be presented with a confirmation dialog requiring me to confirm my intention to cancel the booking.

The dialog should have two buttons (“confirm”, and “cancel”)
The default action should be “confirm”.

When the “cancel” button is clicked, the dialog should be closed.
When the “confirm” button is clicked:

1. The POINT VALUE of the BOOKING or PENDING BOOKING should be added to my CUSTOMER INFORMATION
2. The BOOKING or PENDING BOOKING object should be deleted
3. The dashboard should show some kind of confirmation that this has occurred

2.5 Update customer info

2.5.0 Update customer info flow

As a CUSTOMER,

When I click the “update profile” button on the dashboard,
I want to see a form containing fields for my CUSTOMER INFORMATION and BILLING INFORMATION

These fields should all be editable

A “submit” button should be available - as in registration, no validation is required.

2.5.1 Submit button

As a CUSTOMER,

When I click the “submit” button on the update info flow,
I want my details to be updated in the database,
And a confirmation of some kind to be displayed

3.0 Persistence

The following items need to be stored in persistent storage:

List of actors:

ADMIN

- Name
- Email

CUSTOMER

- CUSTOMER INFORMATION
- BILLING INFORMATION

List of types:

SERVICE TYPE

- Point value

PENDING BOOKING

- Service type (required)
- Delivery type (delivery / pick-up) (required)
- Booking date and time (required)

- Message
- (Point value? would help mitigate against price changes)

BOOKING

- Same fields as PENDING BOOKING

CUSTOMER INFORMATION

- Name
- Email
- Phone number
- Number of points

BILLING INFORMATION

- Biller name
- Biller email

Appendix: UX Report

Voucher Service System to Promote Small Business in Melbourne CBD

Background

Small businesses have already shown the impact of the COVID-19 pandemic. Many of them were forced to lay off employees or even close because they experienced a significant decline in profits. In collaboration with small businesses in the Melbourne CBD, MYD has started a voucher system to revive these businesses. The project proposes a web-based voucher system that allows customers to book services with their voucher. The convenience offered by this website is expected to be the precursor for further collaboration between MYD and other small businesses in a broader area.

Research

- Structured Interview

A structured interview was conducted with customers around the MYD area to discover their need, experience, and their motivation to visit small businesses in that area.

- Social Media

Research for social media was conducted by looking at small businesses' social media accounts, several posts mentioning these accounts, and looking for keywords, such as "Cafey Melbourne" or "Gifty Melbourne". The social media observed were Instagram, Twitter and Google Maps.

- Other sources

Further observations were made to study e-commerce and website vouchers on the market. This study was conducted to see architectural information and the common interactions on those websites.

Persona



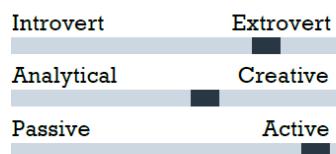
DAVID KHIELS

MYD DIRECTOR OF DIGITAL MARKETING

“Cafey is the best”

BACKGROUND

AGE :	30
FAMILY :	1 st Born, Single
JOB :	Employee
LOCATION :	Melbourne



ANALYTICAL	Creative
Passive	Active

COMPUTER(s)	iPhone, Laptop 13"
INTERNET	±12 hours

SOCIAL MEDIA



DAVID's STORY

Every day I have to go to the office early in the morning and skip breakfast at home. But don't worry; usually, I grab my delicious breakfast from Cafey. Cafey is a kind of coffee shop near my office, but it sells breakfast and lunch too. They sell pretty various types of coffee, and the atmosphere is very comfortable. Barista at Cafey is the best. What could be better than that?

Sometimes I invite my clients to meetings and have lunch there. They enjoy the atmosphere and the dishes. However, I heard that Cafey and other restaurants nearby might close in two months due to the pandemic. Before, Cafey was quite busy, and some menus often ran out if I bought breakfast late. It is too bad. I don't have many times to prepare breakfast, so maybe I'll skip that next time.

GOALS

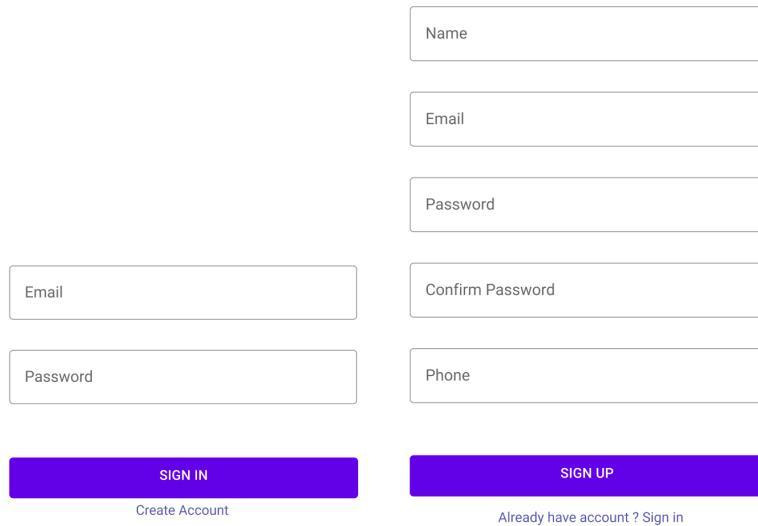
- Eat breakfast on the way to the office
- Meet client in a nearby location with a conducive environment
- Get his favourite menu

FRUSTRATIONS

- Busy schedule
- The news that some restaurant nearby will be closed amid the pandemic

Prototype

Release 1



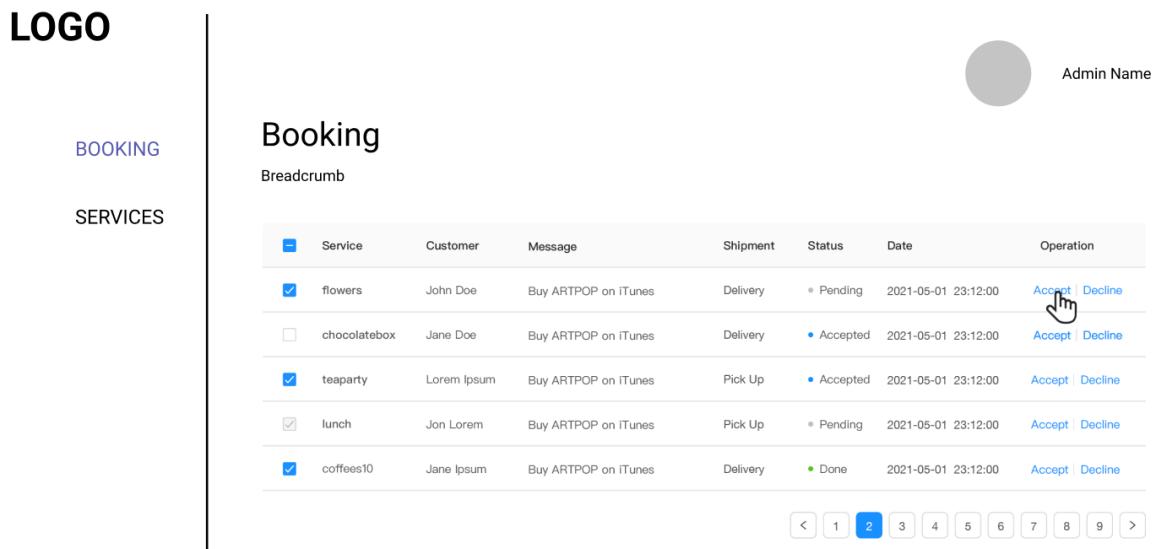
The login page features six input fields arranged in two columns. The first column contains 'Name' and 'Email'. The second column contains 'Password', 'Confirm Password', and 'Phone'. Below the inputs are two purple buttons: 'SIGN IN' on the left and 'SIGN UP' on the right. Underneath each button is a link: 'Create Account' under 'SIGN IN' and 'Already have account? Sign in' under 'SIGN UP'.

Name	
Email	
Password	
Email	Confirm Password
Password	Phone

SIGN IN
Create Account

SIGN UP
Already have account ? Sign in

Picture 1. Login Page



The booking page for admin includes a sidebar with 'LOGO', 'BOOKING', and 'SERVICES'. The main area has a breadcrumb trail and a title 'Booking'. It shows a table of bookings with columns: Service, Customer, Message, Shipment, Status, Date, and Operation. A hand cursor is over the 'Accept' button for the first row. The table has 5 rows of data. At the bottom are navigation arrows and page numbers 1 through 9.

Service	Customer	Message	Shipment	Status	Date	Operation
<input checked="" type="checkbox"/> flowers	John Doe	Buy ARTPOP on iTunes	Delivery	Pending	2021-05-01 23:12:00	Accept Decline
<input type="checkbox"/> chocolatebox	Jane Doe	Buy ARTPOP on iTunes	Delivery	Accepted	2021-05-01 23:12:00	Accept Decline
<input checked="" type="checkbox"/> teaparty	Lorem Ipsum	Buy ARTPOP on iTunes	Pick Up	Accepted	2021-05-01 23:12:00	Accept Decline
<input checked="" type="checkbox"/> lunch	Jon Lorem	Buy ARTPOP on iTunes	Pick Up	Pending	2021-05-01 23:12:00	Accept Decline
<input checked="" type="checkbox"/> coffees10	Jane Ipsum	Buy ARTPOP on iTunes	Delivery	Done	2021-05-01 23:12:00	Accept Decline

Admin Name

Booking

Breadcrumb

< 1 2 3 4 5 6 7 8 9 >

Picture 2. Booking Page for Admin

Services

Breadcrumb

Admin Name

ADD SERVICES

Service	Description	Shipment	Operation
<input checked="" type="checkbox"/> flowers	Buy ARTPOP on iTunes	Delivery, Pick Up	Delete
<input type="checkbox"/> chocolatebox	Buy ARTPOP on iTunes	Delivery, Pick Up	Delete
<input checked="" type="checkbox"/> teaparty	Buy ARTPOP on iTunes	Pick Up	Delete
<input checked="" type="checkbox"/> lunch	Buy ARTPOP on iTunes	Pick Up	Delete
<input checked="" type="checkbox"/> coffees10	Buy ARTPOP on iTunes	Delivery	Delete

< 1 2 3 4 5 6 7 8 9 >

Picture 3. Service Page for Admin

Add Service

Service Name

 Upload Cover Images

Description

Delivery Method

[CANCEL](#) [OK](#)

Picture 4. Add Service dialog for Admin

LOGO

BOOKING

SERVICES

Booking

Breadcrumb

Service	Message	Shipment	Status	Date	Operation
<input checked="" type="checkbox"/> flowers	Buy ARTPOP on iTunes	Delivery	● Pending	2021-05-01 23:12:00	View Cancel
<input type="checkbox"/> chocolatebox	Buy ARTPOP on iTunes	Delivery	● Accepted	2021-05-01 23:12:00	View Cancel
<input checked="" type="checkbox"/> teaparty	Buy ARTPOP on iTunes	Pick Up	● Accepted	2021-05-01 23:12:00	View Cancel
<input checked="" type="checkbox"/> lunch	Buy ARTPOP on iTunes	Pick Up	● Pending	2021-05-01 23:12:00	View Cancel
<input checked="" type="checkbox"/> coffees10	Buy ARTPOP on iTunes	Delivery	● Done	2021-05-01 23:12:00	View Cancel

< 1 2 3 4 5 6 7 8 9 >

Customer Name

Picture 5. Booking Page for Customer

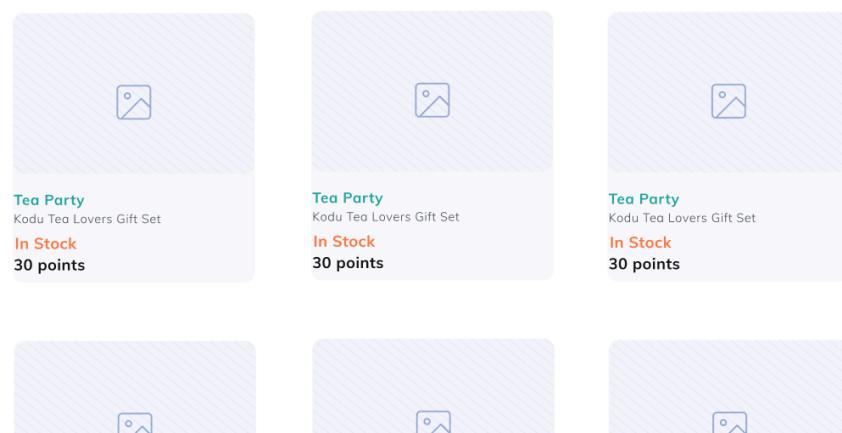
LOGO

BOOKING

SERVICES

Services

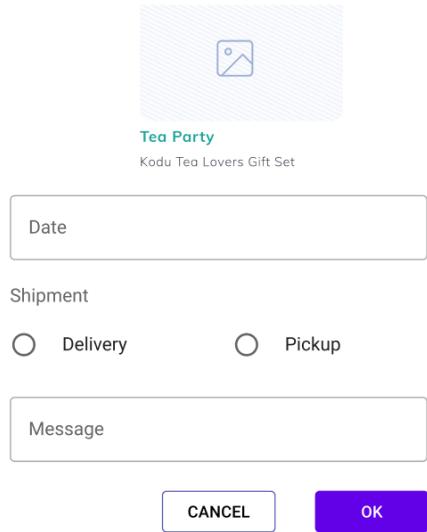
Breadcrumb



Customer Name

Picture 6. Service Page for Customer

Book Tea Party



Picture 7. Book Service dialog for Customer

Release 2

The interface shows a sidebar with "LOGO", "BOOKING", and "SERVICES". The main area has a title "Booking" and a table of bookings. The table has columns: Service, Customer, Message, Shipment, Date, and Operation. It lists three entries: 1. Flowers (Customer: -, Shipment: Pick Up, Date: 01/05/2021, 17:19:50, Operations: Accept, Decline). 2. Tea Party (Customer: Test Customer, Message: everything i needed is on the ground, Shipment: Pick Up, Date: 30/04/2021, 20:48:04, Operations: Accept, Decline). 3. Flowers (Customer: -, Shipment: Pick Up, Date: 30/04/2021, 20:19:36, Operations: Accept, Decline). A navigation bar at the bottom includes icons for back, forward, and search.

Service	Customer	Message	Shipment	Date	Operation
Flowers	-	-	Pick Up	01/05/2021, 17:19:50	Accept Decline
Tea Party	Test Customer	everything i needed is on the ground	Pick Up	30/04/2021, 20:48:04	Accept Decline
Flowers	-	-	Pick Up	30/04/2021, 20:19:36	Accept Decline

Picture 8. Booking Page for Admin (Revision)

Accept Booking

Customer Name

Customer Email

Date & Time

Delivery Pickup

Message

CANCEL
ACCEPT

Decline Booking

Customer Name

Customer Email

Date & Time

Delivery Pickup

Message

CANCEL
DECLINE

Picture 9. Accept and Decline Booking Dialog for Admin

LOGO

BOOKING
SERVICES

Services



Tea Party
Kodu Tea Lovers Gift Set
In Stock
30 points



Tea Party
Kodu Tea Lovers Gift Set
In Stock
30 points



Tea Party
Kodu Tea Lovers Gift Set
In Stock
30 points



Admin Name

ADD SERVICES

Picture 10. Service Page for Admin (Revision)

LOGO

BOOKING
SERVICES
PROFILE
BILLING INFO

Booking

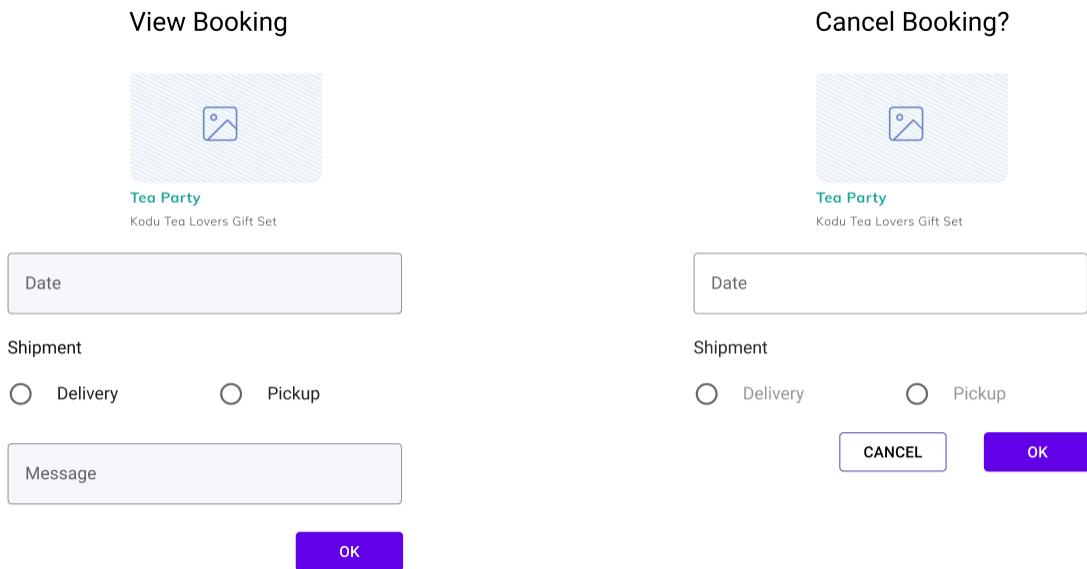
Service	Message	Shipment	Date	Operation
 Bakery Goods	Hi	Delivery	05/06/2021, 20:54:29	View Cancel
 Breakfast	Hello	Pick Up	29/05/2021, 19:53:14	View Cancel
 Tea Party	everything i needed is on the ground	Pick Up	30/04/2021, 20:48:04	View Cancel

< 1 2 3 4 5 6 7 8 9 >



Customer Name

Picture 11. Booking Page for Customer (Revision)



Picture 12. View & Cancel Booking Dialog for Customer

The image shows a mobile application interface for a customer profile and update functions.

Left Side (Navigation Bar):

- LOGO
- BOOKING
- SERVICES
- PROFILE** (highlighted in blue)
- BILLING INFO

Right Side (Profile Screen):

- Customer Name (placeholder text)
- Customer Email (placeholder text)
- Date & Time (placeholder text)
- Action Buttons: "CANCEL" (white) and "UPDATE" (purple)
- Update Password Section:**
- Current Password (placeholder text)
- New Password (placeholder text)
- Text: "minimum 8 character ABC 123"
- Action Buttons: "CANCEL" (white) and "UPDATE" (purple)

Picture13 . Update Profile & Password for Customer



Customer Name

LOGO

BOOKING
SERVICES
PROFILE
BILLING INFO

Billing Information

Name on Invoice

Biller Email Address

CANCEL UPDATE

Picture 14 . Billing Information Page for Customer

Discussion

The first evaluation was performed using the heuristic framework by Nielsen Norman Group and the cognitive walkthrough. The features developed have met some heuristics including,

✓ **Visibility of system status**

The application has highlighted the menu item according to the displayed page. A success message will also appear if the user has successfully booked the service. This feedback informs users about their current location and what is going on with their state on the website.

✓ **Consistency and standards**

Every element on the website is arranged consistently and has met external standards of the general commerce website. For instance, each product display is clickable and provides a booking form. This action is similar to website display products in general, making it easier for users to learn how to use this website.

✓ **Error Prevention**

The form in this application has applied validation. Required fields are differentiated with an asterisk (*) and an error message will be displayed in the associated fields if the fields are empty.

✓ Aesthetic and minimalist design

The website applies a facet interface with visualization to display products. Visual information would become an attractive way to present information on a website and help users to remember information. Besides, this website also shows only essential information so that users are not distracted by noise information.

✓ Match between system and the real world

The evaluation results also showed that participants were familiar with the terminology used on the website, such as the terms in the "change password" and "register" features. The use of icons that follow the real-world convention helps users recognize the functions on the website.

✓ User control and freedom

In the final release, users can cancel orders. This feature helps users to be more confident and less afraid of making mistakes when placing orders.

✓ Recognition rather than recall

The website provides products' images as a description to make users feel confident that they are picking up the right product.

✓ Help and Documentation

Users can contact the admin at any time if they need help via the "Contact Us" link available on the bottom page

Evaluation

Evaluation and discussion have been carried out on each release to improve the usability of the application. Improvements are made following in scope recommendations. The evaluation results in the final release show that the website has met the Nielsen Norman group's usability heuristics for UI design criteria. Usability testing by participants showed that they were able to complete the given tasks effectively. Some of the inputs that might be applicable for future developments are:

1. Provide Frequently Asked Questions (FAQ) to find out about errors or similar questions that other users have experienced.

2. Provide "Contact Us" page for users to ask admin if they experience problems
3. Provides a search function to speed up users finding the product they want
4. Provide a detailed page to provide information or options available for each product.
5. Provide information about product price (in point) and information about user's remaining point
6. Gives opportunity for users to change orders by providing an edit button before the order is approved by admin.

Version

<i>Date</i>	<i>Modified By</i>	<i>Update Information</i>
06-05-2021	Decy Damayanti	Initial Report (Background, Research, Pesona, Prototype Release 1, Discussion 1-4)
12-05-2021	Decy Damayanti	Provide Prototype for Release 2
22-05-2021	Decy Damayanti	Add : <ul style="list-style-type: none"> - Discussion Match between system and the real world, User control and freedom, Recognition rather than recall, Help and Documentation - Evaluation

Appendix: UX Evaluation

UX EVALUATION (FOR INTERNAL EVALUATION)

Release 1

The first stage evaluation was carried out using the guidelines by Nielsen Norman Group to assess usability and the cognitive walkthrough. These methods are used as an initial step in the assessment because they do not require participants.

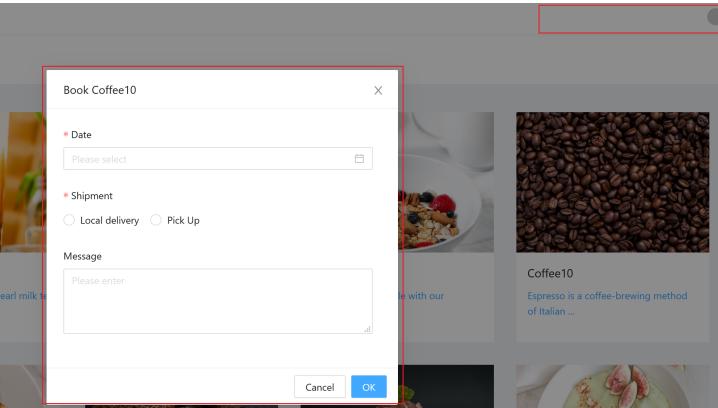
Part A. Heuristic Evaluation

Website:	Voucher Service - voucher-service-swen.web.app
Technology:	Laptop 13 inches with Mozilla Firefox v.86.0 (64-bit)
Evaluator:	Decy Restyan Damayanti
Date of evaluation:	29/04/2021

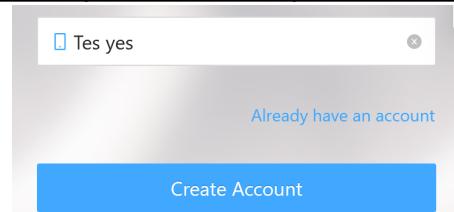
Table of Findings

Heuristic (Nielsen, 2000)	Comments	Scope	Freq	Impact & Severity	Recommendation	Decision/Task
Visibility of system status	No issue					
Match between system and the real world	 Services					
	The app using calendar icon on "Service"	100% Applicable to all users.	10% Applicable to new users	Low Users may not pay attention to the icon used. The	Using icons, words, and symbols that are familiar to the user saves their time to recognize the page's	UX1 . Update icon to store icon (Xin)

				application only has 2 menu items, so users do not spend a long time viewing the content on each page.	content. I.e for service  or 	
User control and freedom						
	Service	Message	Shipment	Date		
	Tea Party	-	Pick Up	29/04/2021, 1:30:51 pm		
	There is no button to change the order. If the user enters the wrong date, delivery type, or service, they must contact the admin.	98% Applicable to all customers	50% Applicable to all customers who make a mistake or want to change the order	High Users may feel frustrated because there is no instruction / feature available if they perform action by mistake.	Gives opportunity for users to change orders by providing an edit button before the order being approved by the admin.	UX2.1 Cancel button to be provided in release 2 (evaluation 18/05/2021 : have been implemented in release 2) UX2.2 modification of the order is out of scope. (21/05/2021 : put as recommendation for next stage)
Consistency and standards						

			
User accounts created from Firebase can place orders, while accounts from registration cannot place orders. Left : U : lisa2@swen90016.com P : lisablackpink Right	50% Applicable to customers who register to this app	50% Applicable to new customers who register in this app	High Users will feel confused if they cannot place orders after registration Standardizes the action that can be performed by customers.

	U : lisa@swen90016.com P : lisablackpink					
Consistency and standards	Service Tea Party	Message -	Shipment Pick Up	Date 29/04/2021, 1:30:51 pm		
	There is no feature or description to track the order.	98% Applicable to all customers	50% Applicable to customers who make a booking	High Customers may confused whether they should pick up the orders or not, if they do not know about the order status	Provide a column to show booking status.	UX4. This will be implemented in Release 2. (evaluation 18/05/2021 : have been implemented in release 2)
Consistency and standards	The product display on the Service page is inconsistent.	 Tea Party Boba tea, bubble tea, and pearl milk te...	 Test Test	 Breakfast Start your day in style with our fab...	Display picture on all products	<u>UX5.</u> Trade off between usability for admin and customers Admin: Mandatory images make it more difficult to enter services

						Customer: difficult to differentiate services Could use Default image Collaboration with merchant who provides image Decision: mandatory (Xin)
Error prevention						
	There is no phone number validation on the registration form	25% Applicable to customer who mistype the phone number	25% Applicable to customer who mistype the phone number	Low The severity of this problem may be low because the phone number is not used for another features in the app. However, this issue will provide additional work for MYD for further development if these fields are available but not validated.	Validate all fields so that users cannot continue to the next stage if the fields are not correct.	<u>UX6</u> . according to use cases "At this stage in development, validating this information is OUT OF SCOPE (invalid emails / phone numbers are ok)" Firebase does rough email validation Phone number validation https://www.npmjs.com/package/libphonenumber-js (Xin)

Recognition rather than recall	<table border="1"> <thead> <tr> <th>Service</th><th>Message</th><th>Shipment</th><th>Date</th><th colspan="2"></th></tr> </thead> <tbody> <tr> <td>Flowers</td><td>-</td><td>Pick Up</td><td>01/05/2021, 5:19:50 pm</td><td colspan="2"></td></tr> <tr> <td>Flowers</td><td>-</td><td>Pick Up</td><td>30/04/2021, 8:19:36 pm</td><td colspan="2"></td></tr> </tbody> </table>		Service	Message	Shipment	Date			Flowers	-	Pick Up	01/05/2021, 5:19:50 pm			Flowers	-	Pick Up	30/04/2021, 8:19:36 pm		
Service	Message	Shipment	Date																	
Flowers	-	Pick Up	01/05/2021, 5:19:50 pm																	
Flowers	-	Pick Up	30/04/2021, 8:19:36 pm																	
The booking page does not display a preview of the product purchased, i.e product picture. Floro provides 3 packages as a collaboration with MYD. In the picture, the customer orders 2 packages from Floro with different pickup dates. The user may forget which type of flower package he/she should pick up by 30/04/2021, but there is no information that differentiates the two orders.	98% Applicable to all customers	70% Customers who purchase products with a more specific name / description may not experience this issue	Medium	Provide product covers / previews/ detail items in the product column to make users feel confident that they are picking up the right product.	UX7 . Add in avatar to column (Xin)															

Recognition rather than recall					
	The "Service" menu provides information about available products, but users cannot see detailed information about these products. For example, the user does not know what cake he/she will get if he/she selects "Bakery Goods".	70% Applicable to all customers but maybe not all products	70% Applicable to all customers but maybe not all products	Medium Users who do not feel confident when making bookings through the website may choose to place orders directly at registered merchants	<p>Provide a detailed page to provide information or options available for each product.</p> <p>UX8.1 Add full description to booking form</p> <p>UX8.2 Further options for each product are out of scope for this project.</p> <p>(21/05/2021 : put as recommendation for next stage)</p>
Flexibility and efficiency of use					
The website does not provide the "Search" function that is generally available on the top right corner of commerce					
	50% Applicable to new customers	50% Applicable to new customers or if there are more products added	Medium Users spend more time searching for the product they want	Provides a search function to speed up users finding the product they want	<p>UX9. Out of scope Recommendation for further development (Decy)</p> <p>(21/05/2021 : put as recommendation for next stage)</p>

	websites. Users unfamiliar with the listed small businesses may need longer time to identify or search the available services.					
Aesthetic and minimalist design	No issue					
Help users recognize, diagnose, and recover from errors	No issue					
Help and documentation	Example Contact Us in bottom page					
	<p>1300 187 187 Monday to Friday, 9am to 5pm Sydney time</p> <p>Head Office and Distribution Centre Unit E1, 3-29 Birnie Avenue, Lidcombe NSW 2141 ABN 24 096 845 126</p>	MOBILE SITE     	<p>This website does not provide Frequently Asked Questions (FAQ) to find out about errors or similar questions that other users have experienced. Besides, there is no admin contact information available.</p>	<p>70% Applicable to new users</p>	<p>70% Applicable to new users</p>	<p>Medium Users who make mistakes, want to cancel orders, or don't know the booking procedure may feel confused.</p>
					<p>Provide admin contact information.</p>	<p>UX10.1 FAQs aren't specified - Recommendation for further development (Decy). (21/05/2021 : put as recommendation for next stage)</p> <p>UX10.2 Add in "Contact us" - provide admin email (Xin and devs)</p>

Part B. Cognitive Walkthrough

Website:	Voucher Service - voucher-service-swen.web.app
Technology:	Laptop 13 inches with Mozilla Firefox v.86.0 (64-bit)
Evaluator:	Decy Restyan Damayanti
Date of evaluation:	29/04/2021

Task 1

Task name:		Register to voucher service website and order Coffee 10		
Task Description:		Lisa want to purchase her end year voucher with Coffee 10		
Steps		Will users know what to do?	Will the user see how to do it?	Will users understand from feedback whether the action was correct or not?
1.	Open the browser	Yes, She used to use a browser.	Yes, the shortcut is available when she turns on the laptop	Yes, The computer provides a different UI when the browser is opened.
2.	Typing url “voucher-service-swen.w eb.app/”	Yes She used to it	Yes A placeholder in the browser's search box said: "search with google or enter an address."	Yes The browser shows some search results.
3.	Click “Create Account” on the login page	Yes It is available in the first row	Yes The font colour is blue. In the user's mental model, it is a clickable text.	Yes It redirects to Voucher Service's website
4.	Fill the form and click “Create Account” U : lisa@swen90016.com P : lisablackpink	Yes	Yes The form and button visible	Yes The page redirect to Voucher Service homepage
5.	Search “Coffee10”	Yes	No	No There is no feedback in this action

		Normally search function available on the websites	There is no search box on the website	
6.	Click menu “Service” and find “Coffee 10”	Yes	Yes The picture and product name available	Yes It is available on top right side
7.	Book on “Coffee 10”	Yes Normally she did it by clicking on the product picture	Yes The picture is clickable	No She click the images but the web said “Delete Service”

RELEASE 2

The usability evaluation in release two will be carried out in two stages. First, the website will be evaluated using the guidelines by Nielsen Norman Group. The results of the evaluation will be discussed with the development team to implement possible recommendations. Furthermore, the study will use Loop11 to find out whether the existing design works for users. Loop11 is a web-based evaluation tool used to perform unmoderated remote testing that allows researchers to record voices and the tester's computer screen (Barnum, 2011). These test results help improve understanding of user experience as knowledge for developing future products.

Part A. Heuristic Evaluation

Website:	<i>Voucher Service - voucher-service-swen.web.app</i>
Technology:	<i>Laptop 13 inches with Mozilla Firefox v.86.0 (64-bit)</i>
Evaluator:	<i>Decy Restyan Damayanti</i>
Date of evaluation:	<i>18-05-2021</i>

Table of Findings

Heuristic (Nielsen, 2000)	Comments	Scope	Freq	Impact & Severity	Recommendation	Decision

Visibility of system status	There is no information about the user's remaining points. There is no information about product / service prices	98% Applicable to all customers	98% Applicable to all users	90% Users will be confused if they don't know the product price or their remaining points	Provide information about product price (in point) and information about user's remaining point	Recommendation for future development
Match between system and the real world	<p>The meaning of "cancel" on the text button is ambiguous</p>					Recommendation will be implemented.
User control and freedom	No Issue					
Consistency and standards	No Issue					
Consistency and standards	No Issue					
Error prevention	No Issue					

Recognition rather than recall	No Issue					
Flexibility and efficiency of use	No Issue					
Aesthetic and minimalist design	No Issue					
Help users recognize, diagnose, and recover from errors	No Issue					
Help and documentation	No Issue					

Part B. LOOP11

TEST PLAN

This study will include 5 participants, around 20-45 years old, to represent MYD employees. Some experts believe that the first five participants will notice most usability problems (Lewis, 1994; Nielsen & Landauer, 1993; Virzi, 1992, as cited in Tullis & Albert, 2013, p.115). Participants must be able to operate computers and be familiar with using websites. Potential participants who have or have never used online shopping websites can participate in this study to represent users. However, prospective participants who have worked, developed, used, or visited the voucher service app before will be excluded from the study.

This study will recruit participants from our family, friends, or colleagues who are eligible for the criteria. Consent Form (Appendix EV-1) and Plain Language Statement (Appendix EV-2) will be sent to potential participants. Potential participants who do not send back the forms, are suddenly unwilling to participate in the study, or have a consent issue will not be included in the study.

Evaluation will be carried out using online tools (Loop11) and recording the user's screen to find out their stages in completing tasks. **Audio and face /webcam is not recorded.**

SCENARIO

- **INSTRUCTION**

The first task is about to begin. If you think you have completed a task, click on the round "SHOW" button on the bottom left corner and click on "TASK COMPLETED". If you are not able to complete the task and would like to move on to the next task, click on the "SHOW" button and click on "ABANDON TASK".

- **PRE TEST QUESTION**

1. What is your age?
2. What is your gender?
3. Have you been using online shopping websites recently?

- **LOOP11 TASK**

1. Register

Today your office is distributing vouchers worth 100 points that can be used on

website service vouchers. Find a way that you can enter the homepage of the website

2. Order Flower - pickup

On Friday, you want to buy flowers for your girlfriend. You plan to pick it up after work before you meet her. Can you do that?

3. Cancel Order

You find out that your girlfriend is allergic to flower pistil, so you will immediately drop your flower order. How can you do that?

4. Contact Admin

When visiting a store, you see a Christmas hamper that is not available on the services list website. You want to suggest to the admin to add that product. How can you do that?

5. Update Password

Yesterday you ordered flowers from your colleague's PC and clicked activated the password reminder in his browser. So that you want to update your password today. Can you do it?

○ **POST TEST QUESTION**

1. Website purpose

How difficult was it to identify the purpose of the website?

2. Finding speed

How quickly could you find what you wanted on the website?

3. Difficulties

How difficult was it to navigate and use the website?

4. Guidance

There was enough instructions and documentation to help you carry out the task

5. Efficiency

Was the website efficient? Did any task take too long to complete?

6. Easiest Task

Which task did you find the easiest

- a. Register
- b. Order Flower
- c. Cancel Order
- d. Contact Admin
- e. Change Password

and specify why ?

7. Hardest Task

Which task did you find the hardest?

- a. Register
- b. Order Flower
- c. Cancel Order
- d. Contact Admin
- e. Change Password

and specify why ?

8. Suggestion

Do you have any suggestions to improve the website?

RESULT

Date : 17 May 2021 - 18 May 2021
 Evaluator : Decy Restyan Damayanti

The results shown in Appendix EV-3. Participants need less than 5 minutes to complete each task. In the first task (register), the maximum time required is around 12 minutes because participants need time to adapt to Loop11. Based on the answers to questions 9-13, website design gets a good response. Participants find the website relatively easy to use and quite efficient. All participants agreed that they could see what they wanted very quickly.

The dashboard shows that of the five tasks given, a participant abandoned "change password" and a participant abandoned "contact admin". Four out of five participants found it challenging to find the "contact admin" menu because the text was too small and located at the bottom of the page.

Suggestions from participants will be accommodated and discussed with the team for website improvement.

Suggestion	Explanation & Decision
Improve website handle because the page auto-reload	<p>Evaluator set the start url for all task in Loop11 is :</p> <p>https://voucher-service-swen.web.app/</p> <p>If participant go from :</p> <p>https://voucher-service-swen.web.app/bookings, the page will visit the start url - then go to the destination url.</p> <p>So that participant feels that the page reload twice/ auto-reload</p>

Contact admin should inform clearly	Contact admin is out of scope. Developer team add "Contact Us" in bottom page to provide escape door for customers who make a mistake or experience any difficulties while using the website
Cannot register actual phone number	The participants are from Indonesia and the phone numbers are around 10-12 digits. In this project, the target customer is a MYD employee (located in the Melbourne area), so current validation is fine.
Add search box	The number of merchants who collaborated and the products offered at this time were not too many. This input is very useful as a recommendation for further development.
Add confirmation to phone number	These suggestions are good, so that the app can verify users. However, this feature is outside project's scope
Add dark mode	Additional feature and out of scope

RECOMMENDATION FOR FUTURE DEVELOPMENT

According to ISO (as cited in Barnum, 2011), usability is a measure that determines how specific users can use a design to complete tasks effectively, efficiently, and satisfactorily, in a particular context. The following are recommendations obtained from the evaluation results. Recommendation points are very useful but outside the project's scope.

No	Recommendation	Goals
1.	Provide Frequently Asked Questions (FAQ) to find out about errors or similar questions that other users have experienced.	Efficiency
2.	Provide "Contact Us" page for users to ask admin if they experience problems	Efficiency
3.	Provides a search function to speed up users finding the product they want	Effectiveness
4.	Provide a detailed page to provide information or options available for each product.	Efficiency

5.	Provide information about product price (in point) and information about user's remaining point	Efficiency
6.	Gives opportunity for users to change orders by providing an edit button before the order is approved by admin.	Efficiency & Effectiveness

Reference

Barnum, C. M. (2011). *Usability Testing Essentials: Ready, Set ... Test!* Burlington: Morgan Kaufman.

Nielsen, J. (2000). 10 Usability Heuristics for User Interface Design.
<https://www.nngroup.com/articles/ten-usability-heuristics/>

Tullis, T., & Albert, B. (2013). *Measuring The User Experience Collecting, Analyzing, and Presenting Usability Metrics*. Morgan Kaufmann.

Appendices

Appendix EV-1. Consent Form

Consent Form

School of Computing and Information Systems
Faculty of Engineering and I.T.



Project: Software Processes and Management SWEN90016_2021_SM1

Student Researchers:

James Sinclair - jssinc@student.unimelb.edu.au.
Decy Restyan Damayanti - ddamayanti@student.unimelb.edu.au
Alastair Daivis - adaivis@student.unimelb.edu.au
Setender Nandal - nandals@student.unimelb.edu.au
Sakshi Chandel - schandel@student.unimelb.edu.au
Xin Wei Ding - xind1@student.unimelb.edu.au

Student Researcher contact:

Decy Restyan Damayanti - ddamayanti@student.unimelb.edu.au

Name of Participant:

1. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written plain language statement to keep.
2. I understand that the purpose of this research is to evaluate a website for the purposes of completing a graduate coursework subject at The University of Melbourne.
3. I understand that my participation in this project is for research purposes only.
4. I acknowledge that the possible effects of participating in this research project have been explained to my satisfaction.
5. In this project I will be required to complete a number of tasks on a specified website.
6. I understand that my interview will be audio and/or video-recorded and that short segments of this may be used in a video summary to illustrate key issues with the website and/or things that it does well.
7. I understand that my participation is voluntary and that I am free to withdraw from this project anytime without explanation or prejudice and to withdraw any unprocessed data that I have provided.
8. I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements; my data will be password protected and accessible only by the named researchers.
9. I understand that given the small number of participants involved in the study, it may not be possible to guarantee my anonymity.
10. I understand that after I sign and return this consent form, it will be retained by the student researchers.

Participant Signature: _____ Date: _____

Appendix EV-2. Plain Language Statement

Plain Language Statement

► School of Computing and Information Systems
Faculty of Engineering and I.T.



Project: Software Processes and Management SWEN90016_2021_SM1

Student Researchers:

James Sinclair - jssinc@student.unimelb.edu.au.
Decy Restyan Damayanti - ddamayanti@student.unimelb.edu.au
Alastair Daivis - adaivis@student.unimelb.edu.au
Setender Nandal - nandals@student.unimelb.edu.au
Sakshi Chandel - schandel@student.unimelb.edu.au
Xin Wei Ding - xind1@student.unimelb.edu.au

Student Researcher contact:

Decy Restyan Damayanti - ddamayanti@student.unimelb.edu.au

Introduction

Thank you for your interest in participating in this research project. The following few pages will provide you with further information about the project, so that you can decide if you would like to take part in this research.

Please take the time to read this information carefully. You may ask questions about anything you don't understand or want to know more about.

Your participation is voluntary. If you don't wish to take part, you don't have to. If you begin participating, you can also stop at any time.

What is this research about?

In this student project, groups of graduate students will conduct an evaluation of the usability and user experience of a public website. The aim of the project is to understand how easy or difficult the website is to use, to identify where and why any difficulties occur, and to make recommendations about how to fix those issues.

What will I be asked to do?

Should you agree to participate, you will be asked to do one or both of the following:

- Complete an online survey using special software designed for this kind of evaluation. Your responses to questions will be collected automatically by the software and your identity will not be revealed to researchers. The survey takes about 10-15 minutes to complete.
- Participate in an online interview with a student researcher where you are asked to share your computer screen and complete specific tasks on a particular website. The student researcher will ask you questions about your use of the website. The online interview will take about 30-60 minutes and will be recorded for analysis. Short segments of the interview may be used in a video summary to illustrate key issues with the website and/or things it does well.

What are the possible benefits?

Your participation in this study helps us to train our students in how to conduct and analyse a study to evaluate the user experience and usability of a website. Although there are no direct benefits to you or to the site that is studied, your participation helps us to build a group of graduates who can work constructively and efficiently to make websites, computer systems, apps and other products easier and more efficient to use.

What are the possible risks?

We have not identified any risks to participants as part of this study.

Do I have to take part?

No. Participation is completely voluntary. You are able to withdraw at any time. Because we cannot identify individual participants, we cannot remove your data after you submit the online survey. If you wish to withdraw from the interview study, please contact the student researchers and ask them to delete your data.

Will I hear about the results of this project?

If you wish to read the report from the project, please contact the student researchers directly.

What will happen to information about me?

Student researchers will store your data on a password-protected computer system. It will be deleted after the research project ends when the students complete their studies. You will be referred to by a pseudonym in reporting the research.

Where can I get further information?

If you would like more information about this project, please contact the student researchers Decy Restyan Damayanti, at ddamayanti@student.unimelb.edu.au.

Who can I contact if I have any concerns about the project?

This project has human research ethics approval from The University of Melbourne (Approval 20182). If you have any concerns or complaints about the conduct of this research project, which you do not wish to discuss with the research team, you should contact the Research Integrity Administrator, Office of Research Ethics and Integrity, University of Melbourne, VIC 3010. Tel: +61 8344 1376 or Email: research-integrity@unimelb.edu.au. All complaints will be treated confidentially. In any correspondence please provide the name of the research team and/or the name or ethics ID number of the research project.

Appendix EV-3. Loop11 Result

Participant Demographics

Location	Operating System		
Jakarta, Jakarta, Indonesia	100.00% (5)	Windows 10	100.00% (5)
Device	Browser		
Desktop	100.00% (5)	Chrome	80.00% (4)
		Firefox	20.00% (1)

Total tasks & questions

Complete	Abandon	Lostness	Avg duration	Participants	Complete	Incomplete
92%	8%	0.65	02:35	5	5	0

Task 4: Register



● Complete (100%) ● Abandon (0%)

Page views (avg)	10.4
Time on task (avg)	05:59
Lostness	0.71

Task 5: Order Flower



● Complete (100%) ● Abandon (0%)

Page views (avg)	4.7
Time on task (avg)	01:33
Lostness	0.68

Task 6: Cancel Order



● Complete (100%) ● Abandon (0%)

Page views (avg)	3.6
Time on task (avg)	01:01
Lostness	0.57

Task 7: Contact Admin



● Complete (80%) ● Abandon (20%)

Page views (avg)	10.1
Time on task (avg)	03:02
Lostness	0.75

Task 8: Change Password



● Complete (80%) ● Abandon (20%)

Page views (avg)	4.7
Time on task (avg)	01:19
Lostness	0.53

Question 1:

Previous Next 1: What is your age? ▾

What is your age?

Participants Answered Skipped

5 5 0



20-24

2 responses
40.0%

25-29

3 responses
60.0%

30-34

0 responses
0.0%

35-39

0 responses
0.0%

40-44

0 responses
0.0%

>=45

0 responses
0.0%**Question 2:**

Previous Next 2: What is your gender? ▾

What is your gender?

Participants Answered Skipped

5 5 0



Female

3 responses
60.0%

Male

2 responses
40.0%

Other

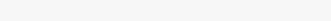
0 responses
0.0%**Question 3:**

Previous Next 3: The first task is about to begin. | ^

The first task is about to begin. If you think you have completed a task, click on the round "SHOW" button on the bottom left corner and click on "TASK COMPLETED".

Participants Answered Skipped

5 5 0



Yes

4 responses
80.0%

Absolutely Yes!

1 response
20.0%

Task 4: Register

Today your office is distributing vouchers worth 100 points that can be used on website service vouchers. Find a way that you can enter the homepage of the website

Statistics

Complete	Abandon	Lostness	Avg Page Views	Avg Duration
100%	0%	0.71	10.4	05:59

Page views to complete task

	All	Complete	Abandon
Average	10.4	12.9	4.7
Maximum	24	24	9
Minimum	1	6	1

Time to complete task

	All	Complete	Abandon
Average	05:59	05:59	
Maximum	12:07	12:07	
Minimum	00:37	00:37	

Clickstream & Heatmaps

Most common first click pages

Page URL	Response Count
https://voucher-service-swen.web.app/user/login?re...	5 (100%)

Task 5: Order Flower

On Friday, you want to buy flowers for your girlfriend. You plan to order from the website and pick it up after work before you meet her. Can you place an order?

Statistics

Complete	Abandon	Lostness	Avg Page Views	Avg Duration
100%	0%	0.68	4.7	01:33

Page views to complete task

	All	Complete	Abandon
Average	4.7	4.7	
Maximum	8	8	0
Minimum	2	2	0

Time to complete task

	All	Complete	Abandon
Average	01:33	01:33	
Maximum	02:51	02:51	
Minimum	00:50	00:50	

Clickstream & Heatmaps

Most common first click pages

Page URL	Response Count
https://voucher-service-swen.web.app/	5 (100%)

Task 6: Cancel Order

You find out that your girlfriend is allergic to flower pistil, so you will ... ↗

You find out that your girlfriend is allergic to flower pistil, so you will immediately drop your flower order. How can you do that?

Previous

Next

6: Cancel Order

▼

Statistics

Complete Abandon

Lostness Avg Page Views Avg Duration

100% 0%

0.57 3.6 01:01

Page views to complete task

	All	Complete	Abandon
--	-----	----------	---------

Average	3.6	3.6	
Maximum	13	13	0
Minimum	2	2	0

Time to complete task

	All	Complete	Abandon
--	-----	----------	---------

Average	01:01	01:01	
Maximum	04:27	04:27	
Minimum	00:20	00:20	

Clickstream & Heatmaps

Most common first click pages

Page URL	Response Count
https://voucher-service-swen.web.app/ ↗	5 (100%)

Task 7: Contact Admin

When visiting a store, you see a Christmas hamper that is not available on ... ↗

When visiting a store, you see a Christmas hamper that is not available on the services list website. You want to suggest to the admin to add that product. How can you do that?

Previous

Next

7: Contact Admin

▼

Statistics

Complete Abandon

Lostness Avg Page Views Avg Duration

80% 20%

0.75 10.1 03:02

Page views to complete task

	All	Complete	Abandon
--	-----	----------	---------

Average	10.1	7.8	16.0
Maximum	18	9	18
Minimum	5	5	14

Time to complete task

	All	Complete	Abandon
--	-----	----------	---------

Average	03:02	02:39	04:57
Maximum	04:57	04:50	04:57
Minimum	01:04	01:04	04:57

Clickstream & Heatmaps

Most common first click pages

Page URL	Response Count
https://voucher-service-swen.web.app/ ↗	5 (100%)

Most common abandon pages

Page URL	Response Count
https://voucher-service-swen.web.app/services ↗	1 (100%)

Task 8: Change Password

Yesterday you ordered flowers from your colleague's PC and clicked activate ... ↗

Yesterday you ordered flowers from your colleague's PC and clicked activated the password reminder in his browser. So that you want to update your password today. Can you do it?

Previous
Next
8: Change Password
▼

Statistics

Complete	Abandon	Lostness	Avg Page Views	Avg Duration
80%	20%	0.53	4.7	01:19

Page views to complete task

	All	Complete	Abandon
Average	4.7	5.2	3.5
Maximum	10	10	5
Minimum	2	3	2

Time to complete task

	All	Complete	Abandon
Average	01:19	01:09	01:59
Maximum	01:59	01:53	01:59
Minimum	00:46	00:46	01:59

Clickstream & Heatmaps

Most common first click pages

Page URL	Response Count
https://voucher-service-swen.web.app/ ↗	4 (80%)
https://voucher-service-swen.web.app/bookings ↗	1 (20%)

Most common abandon pages

Page URL	Response Count
https://voucher-service-swen.web.app/profile ↗	1 (100%)

Question 9:

How difficult was it to identify the purpose of the website?

Participants
Answered
Skipped

5 5 0


Response	Responses	Percentage
very difficult	0	0.0%
moderately difficult	0	0.0%
neutral	1	20.0%
moderately easy	1	20.0%
very easy	3	60.0%

Question 10:[Previous](#)[Next](#)

10: How quickly could you find what you wanted on the website?

How quickly could you find what you wanted on the website?

Participants Answered Skipped

5 5 0



very slow

0 responses
0.0%

moderately slow

0 responses
0.0%

neutral

0 responses
0.0%

moderately quick

5 responses
100.0%

very quick

0 responses
0.0%**Question 11:**[Previous](#)[Next](#)

11: How difficult was it to navigate and use the website?

How difficult was it to navigate and use the website?

Participants Answered Skipped

5 5 0



very difficult

0 responses
0.0%

moderately difficult

0 responses
0.0%

neutral

1 response
20.0%

moderately easy

0 responses
0.0%

very easy

4 responses
80.0%**Question 12:**[Previous](#)[Next](#)

12: There was enough instruction

There was enough instructions and documentation to help you carry out the task

Participants Answered Skipped

5 5 0



strongly disagree

0 responses
0.0%

disagree

0 responses
0.0%

neutral

0 responses
0.0%

partially agree

4 responses
80.0%

strongly agree

1 response
20.0%

Question 13:

Previous

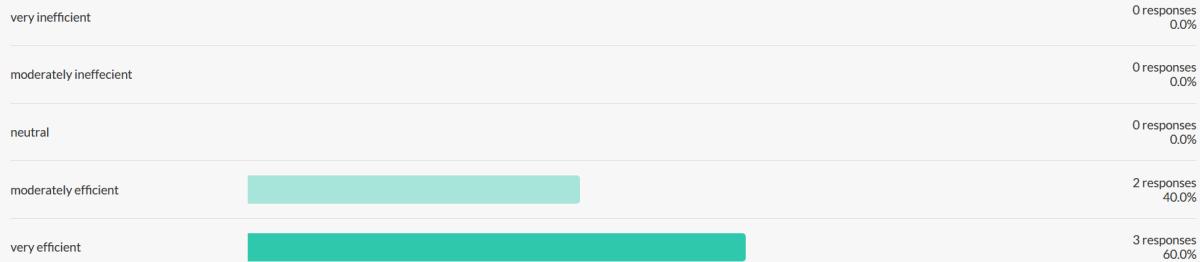
Next

13: Was the website efficient? Dic ▾

Was the website efficient? Did any task take too long to complete?

Participants Answered Skipped

5 5 0

**Question 14:**

Previous

Next

14: Which task did you find the easiest? Dic ▾

Which task did you find the easiest

Participants Answered Skipped

5 5 0

- 1. Register
- 2. Order Flower
- 3. Cancel Order
- 4. Contact Admin
- 5. Change Password

and specify why ?

Participant 11
18 May 2021 04:50 AM UTC

Change Password, because change password feature is a common feature and always include in profile feature

Participant 8
18 May 2021 04:01 AM UTC

Register is the easiest task in this website or application because it can see clearly and give notification if the user want to login but he/she not already registered

Participant 4
17 May 2021 02:43 AM UTC

3. it is visible on the homepage

Participant 1
17 May 2021 01:32 AM UTC

register, order flower, and cancel order.

Participant 2
17 May 2021 01:30 AM UTC

3. Cancel Order because the step is very simple like: Opening the list of bookings and I only need one click, "Cancel"

Question 15:

Previous Next 15: Which task did you find the ha ^

Which task did you find the hardest

1. Register
2. Order Flower
3. Cancel Order
4. Contact Admin
5. Change Password

Participants Answered Skipped

5 5 0

and specify why ?

Participant 11

18 May 2021 04:52 AM UTC

Contact Admin, text is to small, i can miss it if i not look carefully

Participant 8

18 May 2021 04:02 AM UTC

Contact Admin, because I still couldn't find the menu

Participant 4

17 May 2021 02:45 AM UTC

4. must be connected to mail, there is no form for contact admin on this website

Participant 1

17 May 2021 01:33 AM UTC

contact admin

Participant 2

17 May 2021 01:32 AM UTC

2. Order Flower There is no search box, so I must find it by scrolling the page

Question 16:

Previous Next 16: Do you have any suggestions t ^

Do you have any suggestions to improve the website?

Participants Answered Skipped

5 5 0

Participant 11

18 May 2021 04:56 AM UTC

Maybe improve in handle the web state, because i find sometimes the page reload and some menu not appear

Participant 8

18 May 2021 04:03 AM UTC

Maybe for contact admin menu should be informed clearly

Participant 4

17 May 2021 02:48 AM UTC

phone number when registration should be freed, my original phone number was invalid during registration, so i used a random number

Participant 2

17 May 2021 01:35 AM UTC

1. Add search box on bookings and service menu 2. Add confirm phone number to make sure the customer can be reached 3. Add dark mode :)

Participant 1

17 May 2021 01:33 AM UTC

nope

Appendix: Release 1 Test Report

Test Date	UX Reference	Use Case reference					
Test Result						Pass	
Use Case	Scenario	Test procedure notes	Expected result	Responsive	Tested	Result	Notes
0.0 - Login	Login with missing user		Login failure	TRUE	TRUE	TRUE	Error message flags nonexistent user
0.0 - Login	Invalid password (admin)		Login failure	TRUE	TRUE	TRUE	Error message flags bad password
0.0 - Login	Invalid password (customer)		Login failure	TRUE	TRUE	TRUE	
0.0 - Login	Login -> admin dashboard		Nav to admin dashboard	TRUE	TRUE	TRUE	
0.0 - Login	Login -> user dashboard		Nav to user dashboard	TRUE	TRUE	TRUE	
0.0 - Login	Login is preserved across tabs	Nav to /services endpoint while logged in as admin in another tab	/services endpoint displayed	TRUE	TRUE	TRUE	
0.0 - Login	Login intercepts /services endpoint		Redirect to login	TRUE	TRUE	TRUE	

0.0 - Login	Login intercepts /bookings endpoint		Redirect to login	TRUE	TRUE	TRUE	
1.0 - CRUD service type	Admin can create service type from dashboard	From /services endpoint		TRUE	TRUE	TRUE	
1.0 - CRUD service type	Adding duplicate service types			FALSE	FALSE	FALSE	Behaviour needs definition. Also we will likely need a delete process to avoid hoarding
1.0 - CRUD service type	Required fields		Name, Description, Shipment, Image may not be empty	TRUE	TRUE	TRUE	
1.2 - Admin dashboard	Displays bookings	From /bookings endpoint		TRUE	TRUE	TRUE	Empty messages displayed as "-" with identical styling to messages with content. Should consider changing styling (e.g. faded text)
1.2 - Admin dashboard	Updates on refresh	From /bookings endpoint		TRUE	TRUE	TRUE	
1.2 - Admin dashboard	Updates on new booking	From /bookings endpoint		TRUE	TRUE	TRUE	
1.2 - Admin dashboard	Layout style preserved over refresh	Change layout style, then refresh page	Layout style is preserved	TRUE	TRUE	TRUE	
1.2 - Customer dashboard	Layout style preserved over refresh	Change layout style, then refresh page	Layout style is preserved	TRUE	TRUE	TRUE	
2.0 - Customer registration	Required fields		Email, Password, Name, Phone number may	TRUE	TRUE	TRUE	

			not be empty				
2.0 - Customer registration	Passwords don't match		Registration failure	TRUE	TRUE	TRUE	
2.0 - Customer registration	Passwords match		Registration success	TRUE	TRUE	TRUE	
2.0 - Customer registration	email / password validation	out of scope		TRUE	FALSE		out of scope
2.1 - Customer dashboard	Shows bookings for the customer	/bookings endpoint		TRUE	TRUE	TRUE	Same notes as on admin dashboard
2.1 - Customer dashboard	Updates on new booking	/bookings endpoint		TRUE	TRUE	TRUE	
2.1 - Customer dashboard	Updates on refresh	/bookings endpoint		TRUE	TRUE	TRUE	
2.3 - Add booking	Enter add-booking flow from /services endpoint	/services endpoint		TRUE	TRUE	TRUE	SU suggestion: add a "make booking" button to the bookings page
2.3 - Add booking	Required fields		Date, Shipment type	TRUE	TRUE	TRUE	
2.3 - Add booking	Can select date			TRUE	TRUE	TRUE	SU suggestion: probably don't need seconds in the date picker

2.3 - Add booking	Can select delivery / pickup			TRUE	TRUE	TRUE	For services with only one delivery type, only one radio button is displayed, and once selected it can't be unselected. SU suggestion: always show all delivery types, with disabled ones greyed out and tooltips e.g. "this service doesn't support delivery"
2.3 - Add booking	Cannot enter date in the past	out of scope		FALSE	FALSE	FALSE	out of scope
Service can be self-hosted				TRUE	TRUE	TRUE	

Accessibility Scores

Lighthouse (desktop / perf)	Lighthouse (desktop / accessibility)	Lighthouse (mobile / perf)	Lighthouse (mobile / accessibility)
77	76	16	76

Appendix: Release 2 Test Report

<u>Test Date</u>	<u>UX Reference</u>	<u>Use Case reference</u>	<u>Test URL</u>				
Test Result							
Use Case	Scenario	Test procedure notes	Expected result	Responsive	Tested	Result	Notes
0.0 - Login	Login with missing user		Login failure	TRUE	TRUE	TRUE	
0.0 - Login	Page is scrollable when resized		Scroll with mouse wheel / scrollbar works	TRUE	TRUE	TRUE	
0.0 - Login	Invalid password (admin)		Login failure	TRUE	TRUE	TRUE	
0.0 - Login	Invalid password (customer)		Login failure	TRUE	TRUE	TRUE	
0.0 - Login	Login -> admin dashboard		Nav to admin dashboard	TRUE	TRUE	TRUE	
0.0 - Login	Login -> user dashboard		Nav to user dashboard	TRUE	TRUE	TRUE	
0.0 - Login	Login is preserved across tabs		/services endpoint displayed	TRUE	TRUE	TRUE	
0.0 - Login	Login intercepts /services endpoint		Redirect to login	TRUE	TRUE	TRUE	

0.0 - Login	Login intercepts /bookings endpoint		Redirect to login	TRUE	TRUE	TRUE	
1.0 - CRUD service type	Admin can create service type from dashboard			TRUE	TRUE	TRUE	Ability to upload images might be a risk (could cause extra cost for image hosting if a lot of large custom images are uploaded)
1.0 - CRUD service type	Adding duplicate service types		Duplicate services can be created	TRUE	TRUE	TRUE	
1.0 - CRUD service type	Required fields		Name, Description, Shipment, Image may not be empty	TRUE	TRUE	TRUE	
1.2 - Admin dashboard	Displays bookings	Note UX changes (e.g. status column)		TRUE	TRUE	TRUE	
1.2 - Admin dashboard	Updates on refresh			TRUE	TRUE	TRUE	
1.2 - Admin dashboard	Updates on new booking			TRUE	TRUE	TRUE	
2.0 - Customer registration	Required fields		Email, Password, Name, Phone number may not be empty	TRUE	TRUE	TRUE	
2.0 - Customer registration	Passwords don't match		Registration failure	TRUE	TRUE	TRUE	
2.0 - Customer registration	Passwords match		Registration success	TRUE	TRUE	TRUE	
2.0 -	email / password	out-of-scope		FALSE	FALSE	FALSE	

Customer registration	validation						
2.1 - Customer dashboard	Shows bookings for the customer			TRUE	TRUE	TRUE	
2.1 - Customer dashboard	Updates on new booking			TRUE	TRUE	TRUE	
2.1 - Customer dashboard	Updates on refresh			TRUE	TRUE	TRUE	
2.3 - Add booking	Enter add-booking flow from /services endpoint			TRUE	TRUE	TRUE	
2.3 - Add booking	Required fields		Date, Shipment type	TRUE	TRUE	TRUE	
2.3 - Add booking	Can select date			TRUE	TRUE	TRUE	Seconds no longer available, time now specified in AEST (DST might be a problem)
2.3 - Add booking	Can select delivery / pickup			TRUE	TRUE	TRUE	
2.3 - Add booking	Cannot enter date in the past	out-of-scope		FALSE	FALSE	FALSE	On admin dashboard, bookings in the past can't be accepted / declined and are stuck in "pending" state
2.3 - Add booking	Bookings are entered in Melbourne-local time	out-of-scope		TRUE	TRUE	TRUE	
Service can be self-hosted				FALSE	FALSE	FALSE	

2.3.4 - Booking request email notification	Will need a tester-accessible email account for testers. UX spec not yet defined (see monday issue)	Email latency should be <1m		TRUE	TRUE	FALSE	Email is sent to voucher.service.swen@gmail.com and cc'd to the project team, but should be sent to the admin's email address. Privacy risk (project team does not work for MYD)
2.4 - Cancel booking from dashboard	Cancelled bookings should update state on the dashboard	Pay attention cancel / confirm buttons		TRUE	TRUE	TRUE	
1.1.2 - Booking confirmation email	Refer to this doc for email UX	Email latency should be <1m		TRUE	TRUE	TRUE	
1.2.2 - Admin accept/decline booking from dashboard	Accept booking			TRUE	TRUE	TRUE	
1.2.2 - Admin accept/decline booking from dashboard	Decline booking			TRUE	TRUE	TRUE	
1.1 - Admin accept/decline booking from email	Accept booking			TRUE	TRUE	TRUE	
1.1 - Admin accept/decline booking from email	Decline booking			TRUE	TRUE	TRUE	

1.1.2 - Booking acceptance email		Email latency should be <1m		TRUE	TRUE	TRUE	Location is given using service name - may be confusing if a business offers several service types
1.1.3 - Booking cancellation email		Email latency should be <1m		TRUE	TRUE	TRUE	
2.2 - Customer add billing info				TRUE	TRUE	TRUE	
2.5 - Customer update customer info				TRUE	TRUE	TRUE	

Accessibility Performance

Lighthouse (desktop / perf)	Lighthouse (desktop / accessibility)	Lighthouse (mobile / perf)	Lighthouse (mobile / accessibility)
85	62	45	78

Appendix: Source Code Documentation

Release notes

Changelog

1.1.0 (22/05/2021)

- feat: Customer able to view booking in a modal
- feat: Customer able to cancel booking via a confirm dialog with yes/no button
- feat: Sends email to admin when booking is cancelled
- feat: Admin able to accept booking
- feat: Admin able to decline a booking
- feat: Sends email to the customer when booking is accepted
- feat: Sends email to the customer when booking is declined
- feat: Sends email to admin when booking is completed by the customer
- UI change: Increase contact us button visibility
- UI change: Reverse profile and billing form submit button order

1.0.0 (01/05/2021)

- feat: Customer and admin are able to sign up and log in
- feat: Phone numbers are validated on sign up
- feat: Admin is able to add/delete services through the dashboard
- feat: Customers are able to make bookings for services
- feat: Customers and admin can access dashboards, showing current bookings etc.
- feat: E2E tests cases simulating end to end user interaction.
- feat: Contact Us button provided allowing a user to email the admin.

Architecture

- Voucher_Service uses a serverless architecture, with Firebase managing infrastructure and developers managing the code.
- No virtual machine is directly used in this system.
- The backend uses Cloud Functions as the server.
- Frontend React App can directly CRUD the database.
- Data access is tied to the user's account and managed by Firebase Authentication.

- The React app does not make any REST API calls to backend Cloud Functions, as business logic is driven by database triggers.
- The components of Voucher_Service are described in the table below.

Frontend	React
Database	Firebase Firestore
Backend Server	Cloud Function
Authentication Provider	Firebase Authentication
Hosting	Firebase Hosting

Development

Website link: <https://voucher-service-swen.web.app>

Frontend repository

<https://github.com/swen90016/voucher-service-web>

Backend repository

<https://github.com/swen90016/voucher-service-backend>

```
// clone the repo, i'm using ssh here, feel free to https
git clone git@github.com:swen90016/voucher-service-web.git
git clone git@github.com:swen90016/voucher-service-backend.git
```

Environment Preparation

Install node_modules:

if you run into issues such as umi g tmp, try npm install again, or use yarn instead

```
// for frontend repo
npm install
Or
yarn

// for backend repo
```

```
cd functions  
npm install
```

Start development server

```
npm start
```

Build

```
npm run build
```

Lint

```
npm run lint
```

Lint and auto fix

```
npm run lint:fix
```

Tests

```
npm test
```

Deployment

Install firebase_tools globally:

```
npm i -g firebase-tools  
Or  
yarn global add firebase-tools
```

Login into Firebase:

```
firebase login
```

Deploy to Firebase hosting

After building project

```
firebase deploy --only hosting
```

Localhost Deployment

Firebase supports serving on localhost.

```
firebase serve --only hosting
```

Deploy Cloud Functions

After building project

```
firebase deploy --only functions
```

Credentials

Admin email

admin@swen90016.com

swen90016

Tester credentials

test.customer@swen90016.com

testtest

Authentication

- All users must authenticate to access the system. For unauthenticated visitors, the system restricts access to all routes other than login and signup. Visitors are forced to the login screen if they attempt to access any other routes. Authenticated users will be redirected to the home page if they try to access the login and signup page.
- Authentication state is persisted on the user's computer. Reauthentication is not required unless the user logs out manually or clears browser cookies and data.

- Upon successful login, Firebase will automatically fetch an access token. This token is managed by Firebase, and is automatically appended to all database request headers.

Related hooks

- `useProfile()`

returns current user's profile information, which includes name, email etc.

- `useUid()`

returns current user's ID, used for creating bookings.

- `useClaims()`

Returns the secure custom user properties called claims, user role is stored in claims.

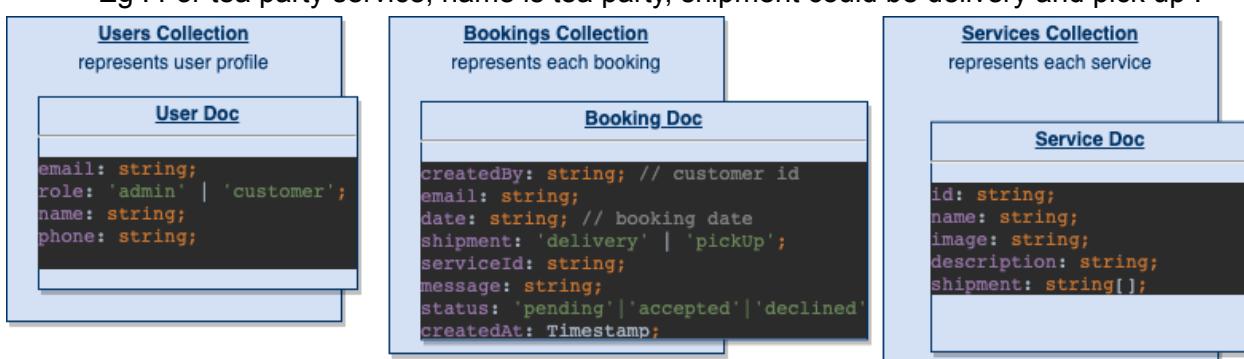
Database

Model

Firebase Firestore is a NoSQL document database. Documents live in collections, which are simply containers for documents (e.g. each user profile lives in a users collection).

There are 3 collections, users, bookings and services.

- Users collection has fields email, role, name and phone number. Role can be customer or admin .
- Bookings collection has fields related to customer bookings and can be seen in the pic below.
- Services collection has fields like image , description , shipment .
Eg . For tea party service, name is tea party, shipment could be delivery and pick up .



Types

Below is the Typescript types

```
export type Profile = {
  email: string;
  role: 'admin' | 'customer';
  name: string;
  phone: string;
};

export type Service = {
  id: string;
  name: string;
  image: string;
  description: string;
  shipment: string[];
};

export type Booking = {
  createdBy: string; // customer id
  email: string;
  date: string; // booking date
  shipment: 'delivery' | 'pickUp';
  serviceId: string;
  message: string;
  status: 'pending';
  createdAt: Timestamp | Date;
};
```

Database rules

Write refers to create, update and delete in CRUD operations.

Each user, including admin, has a role field. It has 2 possible values: 'admin' or 'customer'. This field is used for access control in both frontend and backend.

How do database rules work

- After authenticating with Firebase Authentication, users will obtain short-lived temporary access tokens.
- Frontend clients can directly call the database by putting this access token in the request header.
- The database can identify user identity via an access token.

Full Rule

```
match /databases/{database}/documents {

  function isAdmin(){
```

```

        return request.auth.token.role == 'admin';
    }

function validProfile(){
    return request.resource.data.role != 'admin';
}

match /users/{userId} {
    allow read: if request.auth.uid == userId || isAdmin();
    allow write: if (request.auth.uid == userId && validProfile()) || isAdmin();
}

match /{document=**} {
    allow read, write: if request.auth.uid == userId || isAdmin();
}
}

match /bookings/{bookingId} {
    allow read: if resource.data.createdBy == request.auth.uid || isAdmin();
    allow write: if request.resource.data.createdBy == request.auth.uid || isAdmin();
}
}

match /services/{serviceId} {
    allow read: if request.auth.uid != null;
    allow write: if isAdmin();
}
}
}

```

Break down

Helper functions

```

function isAdmin(){
    return request.auth.token.role == 'admin';
}

```

This function checks whether the user role is admin. This helper function is used in places where the operation should only be performed by the admin, such as accept booking.

```

function validProfile(){
}

```

```
        return request.resource.data.role != 'admin';
    }
```

This function checks whether the profile is valid or not in an update profile request. If an update request changes role to admin, the update request is invalid. No user should be able to become admin.

Collections (Database tables)

1) Users

```
match /users/{userId} {
    allow read: if request.auth.uid == userId || isAdmin();
    allow write: if (request.auth.uid == userId && validProfile()) || isAdmin();
}
```

- Inside users collection, each document represents the user profile. User name, email, phone etc are stored under the user profile.
- For each read request, the requester's id is validated against requesting the document's user ID to prevent user_1 from reading user_2's profile. The system allows the admin to read other user's profiles.
- For each write operation, user IDs are validated and profile validity is checked too. No user can update their role to 'admin'. However, users can write their role as 'customer', this is needed for the initial sign up. The system allows the admin to write other user's profiles.

2) Bookings

```
match /bookings/{bookingId} {
    allow read: if resource.data.createdBy == request.auth.uid || isAdmin();
    allow write: if request.resource.data.createdBy == request.auth.uid || isAdmin();
}
```

- Inside bookings collection, each document represents a voucher booking.
- For each read request, the requester's ID is validated against the creator of the booking document. Only admins can read bookings made by other users. User_1 can not read user_2's bookings.
- For each write request, the booking creator field is validated against the requester's user ID to ensure users can only make bookings for themselves, not anyone else.

3) Services

Inside services collection, each document represents a voucher service.

```
match /services/{serviceId} {
    allow read: if request.auth.uid != null;
    allow write: if isAdmin();
}
```

For each read request, only authenticated users can read services.

For each write request, only the admin can write to the services collection.

Backend - Firebase Cloud Function

Triggers

Auth

- On user create
- When users sign up, a cloud function will be triggered by this event.
- This function hardcodes the admin user.
- If the user email matches admin email, add admin role custom claim to the user, otherwise, add a customer role.
- Custom claims cannot be changed from frontend, it can be seen as the ultimate source of truth for user roles.
- Firestore is able to access claims via database rules.

```
request.auth.tokens.role
```

Database

The following triggers are attached to bookings collection in the database, any document creation or updates in the collection will trigger backend code to run.

On booking create

Booking documents are created when customers book a voucher service.

The data of the document is sent to this backend function, the code uses the booking creator's id to fetch their user profile. A predefined booking HTML template is then loaded and tagged with relevant booking and profile data. The server then calls mailgun API to send the tagged HTML to the admin in the system.

On booking update

Booking documents are updated when customers cancel voucher service, or admin declines/accepts a booking.

A predefined booking HTML template for the update event (accepted, declined or cancelled) is then loaded and tagged with relevant booking and profile data. The server then calls mailgun API to send the tagged HTML to the relevant recipient.

Frontend - React App

Typescript, Babel, Webpack

- Typescript was chosen because it offers better autocomplete suggestions than Javascript.
- Most modern IDE support Typescript, such as VS Code and Webstorm. Babel is used to transpile Typescript into Javascript and Webpack is responsible for tree shaking and bundle Javascript.
- Typescript path aliases make code cleaner. Instead of importing with relative path, for instance

```
import { useUid } from '../../hooks/useUser'
```

Alias can be used to simplify importing path

```
import { useUid } from '@/hooks/useUser'
```

State Management

- Besides built-in useState and useContext, Recoil is used for state management.
- User profile is stored inside a recoil atom and this enables easy profile fetching in every component via useProfile hook.
- A snapshot listener watches any changes made to the user profile and updates profile atom and rerenders relevant components using the hook.

Pages

- All pages are located under /pages directory and group by route. For instance, login and signup pages are stored under /pages/user; the bookings page is located under /pages/booking.
- Code splitting is used and each page is lazy imported to avoid loading unnecessary code.

- To add pages, add a file to pages directory and modify the configuration file to load the file.

Components

Reusable components are located under /components directory.

Hooks

Hooks are located under the hooks directory. Hooks are often usable, such as useProfile and useUid for obtaining user profile data and uid. Storing hooks inside components could cause circle dependencies.

Customise Styles

This system uses Less and transpiles to CSS. Themes can be customized in multiple ways.

1. Global style sheet global.less
2. Component level fewer files
3. Inline style

Data Fetching

- The system makes use of React Suspense for data fetching.
- Data fetching is asynchronous, rendering components before data is fetched could lead to all kinds of issues.
- By wrapping components inside React Suspense, suspense fallback will be rendered while data is still loading. Manual checks are not needed.

The following code demonstrates how bookings are loaded. Bookings made by users are stored in the database, data fetching from Firestore is asynchronous. While data fetching is happening, page loading components will be rendered instead. It is cleaner than using if else to check the loading state.

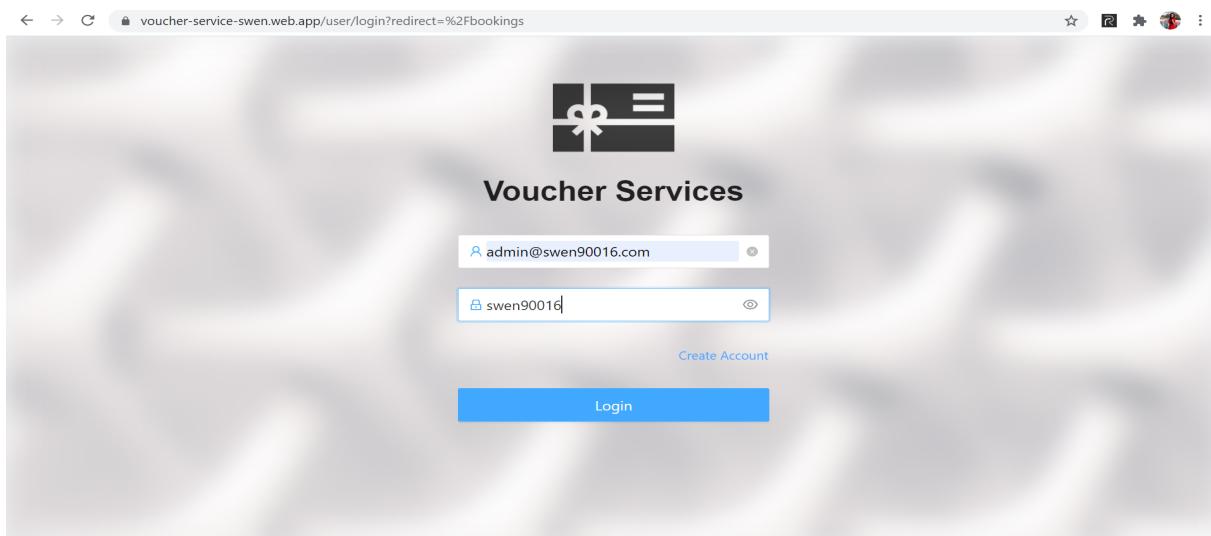
```
<Suspense fallback={<PageLoading />}>
  <BookingsTable />
</Suspense>
```


Appendix: Voucher_System Demonstration, Release 1

Website link: <https://voucher-service-swen.web.app>

Release 1 (1.0.0)

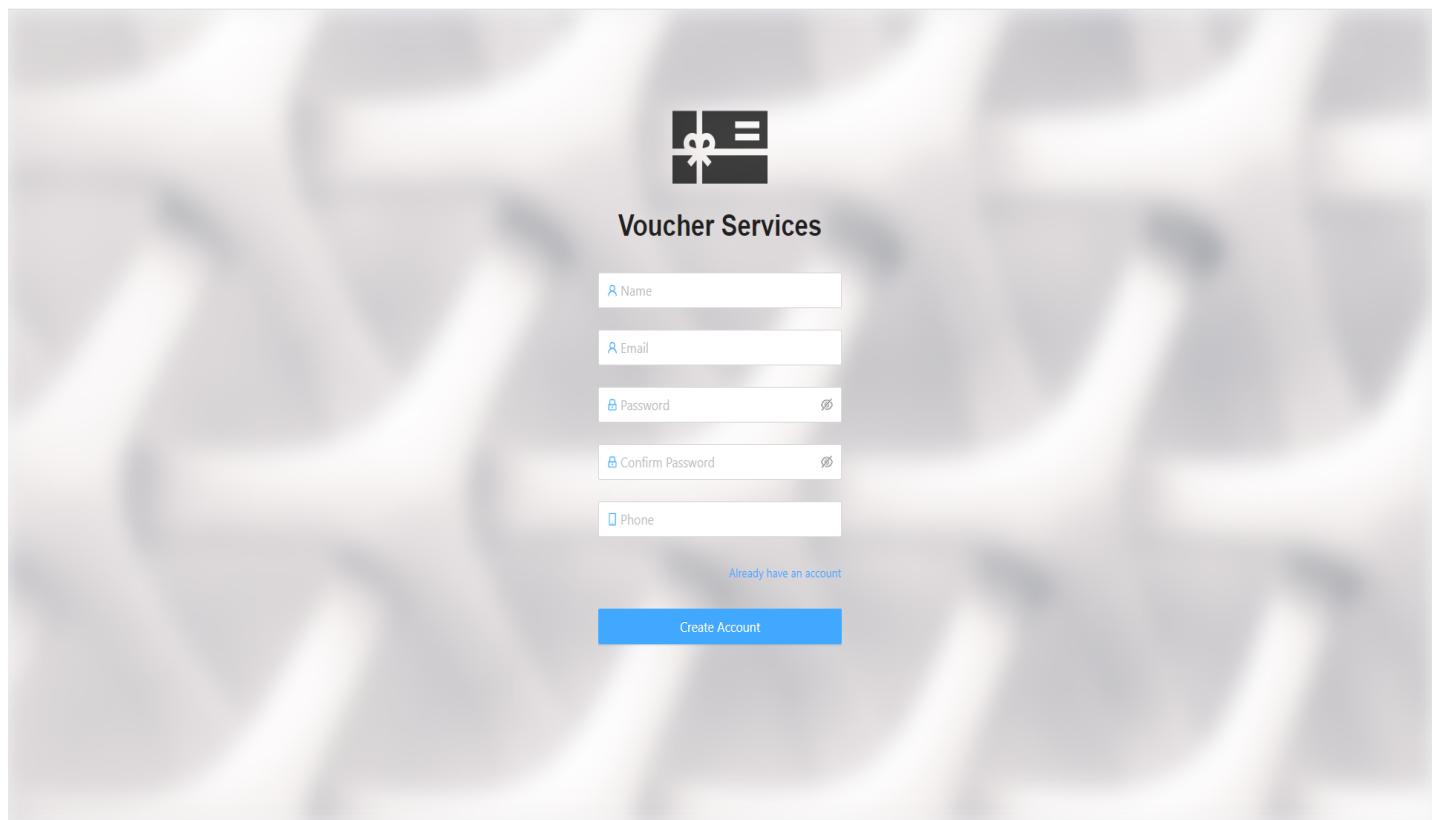
1) Admin login



Description : When opening the main page, the admin (Tianyi) will be able to log in using her credentials.

Role of Admin : Admin can add services like tea service, meal service etc after login.

2) Create Account (For customers/ Employees)



Description: After clicking on the “Create Account” option, customers/employees will be able to create their accounts for booking services.

Role of Customers/Employees: Can book services from the list and see the status of their bookings.

3) Admin Services Page

The screenshot shows the 'Services' section of the admin dashboard. At the top right, there's an 'Admin' account icon. Below it, a blue button labeled 'Add Service' with a plus sign. On the left, a sidebar has 'Services' selected. The main area displays four service cards in a grid:

- Tea Party**: Boba tea, bubble tea, and pearl milk te.
- Test**: A placeholder card.
- Breakfast**: Start your day in style with our fabulous break...
- Coffee10**: Espresso is a coffee-brewing method of Italian ...

Below the grid, there are two rows of smaller images: a salad, a stack of pastries, a dessert, and a plate of pancakes.

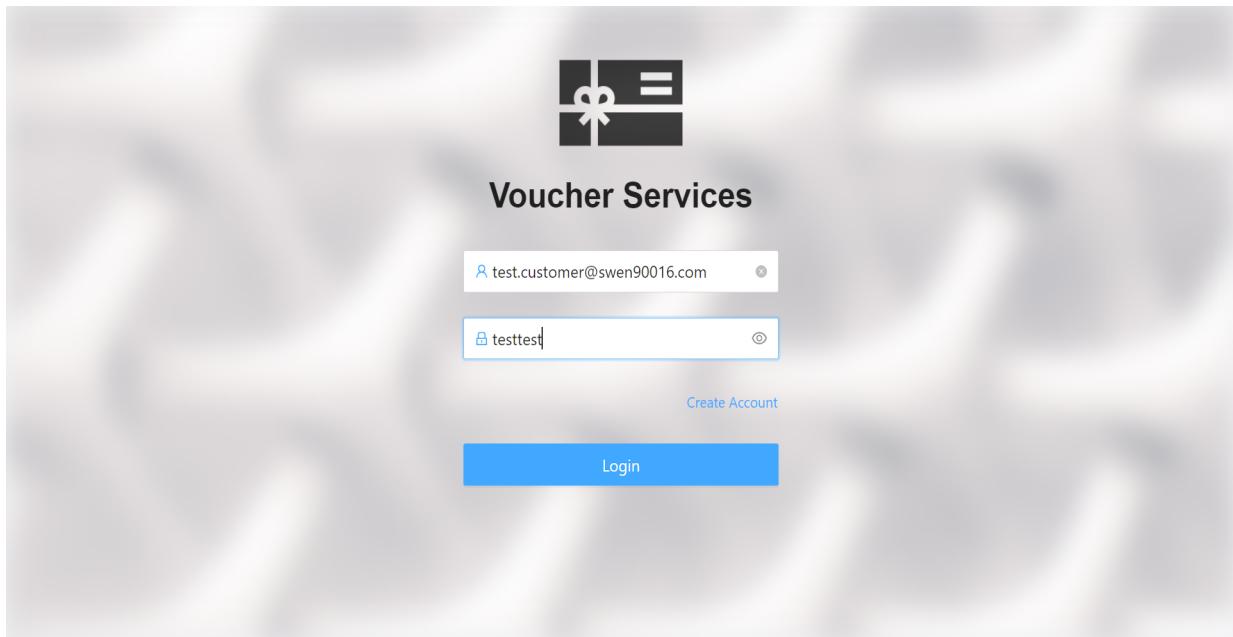
Description : Admin can see the services they offer to their customers.

4) Admin adding new services to the Service Page

The screenshot shows a 'Add Service' modal window overlaid on the main services page. The modal has fields for Name, Cover image, Description, and Shipment, each with a placeholder text. At the bottom are 'Cancel' and 'OK' buttons. The background shows the same service cards as the previous screenshot.

Description: Add Services button allows admin to add new services for their customers.

5) Customer/Employee login



Description: Customers/ Employees can log in with their credentials and see respective profiles.

6) Customer Booking Page

A screenshot of the 'Bookings' section of the Voucher Services application. The left sidebar shows 'Voucher Services' and 'Bookings' (which is selected). The main area has a header 'Bookings' and a user profile 'Test Customer'. Below is a table with four columns: 'Service', 'Message', 'Shipment', and 'Date'. One row is shown: 'Tea Party', 'everything i needed is on the ground', 'Pick Up', and '4/30/2021, 8:48:04 PM'. At the bottom are navigation links 'Contact Us' and '© 2021 Voucher Services'.

Description: Customers can see their booking status here.

7) Customer Services

The screenshot shows a user interface for 'Voucher Services'. On the left, there's a sidebar with 'Bookings' and 'Services' tabs, where 'Services' is currently selected. The main area is titled 'Services' and displays a grid of four service categories. Each category has a thumbnail image, a title, a brief description, and a partial description. The services shown are 'Tea Party', 'Test', 'Breakfast', and 'Coffee10'. Below this grid, there are two more rows of service cards, each containing two items.

Service	Description
Tea Party	Boba tea, bubble tea, and pearl milk te
Test	(Partial description)
Breakfast	Start your day in style with our fabulous break...
Coffee10	Espresso is a coffee-brewing method of Italian ...
Chocolate Box	The Chocolate Box is your Australian home for p...
Veg Meal	Katie Karen Diekmeyer, a Vegan Teacher, ...
Flowers	Fresh Flowers Hand Crafted For Same Day Deliver...
Bakery Goods	At Melbourne's best bakeries, you'll find all t...
Lunch	Take advantage of over 50 lunch specials across...
Test	(Partial description)

Description: Customers can see services available for them here.

8) Customer booking any service from the booking page.

This screenshot shows a modal window titled 'Book Tea Party' overlaid on the main 'Services' grid. The modal contains a large image of a boba tea drink, the service title 'Boba tea, bubble tea, and pearl milk te', and three booking fields: 'Date' (with a placeholder 'Please select'), 'Shipment' (with radio buttons for 'Local delivery(Unavailable)' and 'Pick Up'), and a 'Message' input field ('Please enter'). At the bottom right of the modal are 'Cancel' and 'OK' buttons. The background grid of services is partially visible behind the modal.

Service	Description
Tea Party	Boba tea, bubble tea, and pearl milk te
Test	(Partial description)
Chocolate Box	The Chocolate Box is your Australian home for p...
Veg Meal	Katie Karen Diekmeyer, a Vegan Teacher, ...
Flowers	Fresh Flowers Hand Crafted For Same Day Deliver...
Bakery Goods	At Melbourne's best bakeries, you'll find all t...
Lunch	Take advantage of over 50 lunch specials across...
Test	(Partial description)

Description: Customers can select any service by clicking on it and can give their booking details by filling up the form.

9) “Contact us” option for Customers

The screenshot shows a web-based customer account interface for 'Voucher Services'. The top navigation bar includes links for 'Voucher Services', 'Bookings' (which is selected), 'Services', 'Profile', and 'Billing'. A 'Test Customer' button is located in the top right corner. On the left, there's a sidebar with icons for 'Bookings', 'Services', 'Profile', and 'Billing'. The main content area is titled 'Bookings' and displays a table of service interactions:

Service	Message	Shipment	Date	Status	Operation
Bakery Goods	Hi	Delivery	6/5/2021 20:54	ACCEPTED	View Cancel
Breakfast	Hello	Pick Up	5/29/2021 19:53	CANCELED	View Cancel
Breakfast	mbncbd	Pick Up	5/22/2021 22:50	DECLINED	View Cancel
Coffee10	-	Delivery	5/21/2021 16:29	DONE	View Cancel
Breakfast	Originally booked for 0900 on 15/5, EST (New York)	Pick Up	5/15/2021 09:00	CANCELED	View Cancel
Breakfast	time zone test	Pick Up	5/13/2021 21:41	CANCELED	View Cancel
Tea Party	everything i needed is on the ground	Pick Up	4/30/2021 20:48	DONE	View Cancel

At the bottom of the page, there's a footer with 'Contact Us' and '© 2021 Voucher Services' text, along with a link to '20 / page'.

Description: The footer of the customer account page allows them to contact admin via email directly using any preferred mailing service. Eg (Gmail)

Appendix: Voucher_System Demonstration, Release 2

(v1.1.0)

- 1) Email list for adding staff members who receive new booking details

The screenshot shows a web-based application interface titled "Voucher Services". On the left, there is a sidebar with three items: "Bookings", "Services", and "Settings", with "Settings" being the active tab. The main content area is titled "Admin Settings" and contains a sub-instruction: "This page is for demonstration purpose. We do not know which tutor will be marking our project. Tutors can use this page to add their emails to CC list, so they can see the admin notification email when customer complete a booking. Check you spam folder if you are in the list but can not receive emails from our system." Below this, a table lists several email addresses under the heading "Emails below will be CC-ed on admin emails." Each row includes an "Email" column listing an email address and an "Operation" column with a "Delete" link. At the top right of the table, there are buttons for "Add New Email", "C", "I", and "G". At the bottom right, there is a pagination control showing "1-6 of 6 items" and "20 / page".

Email	Operation
adaavis@student.unimelb.edu.au	Delete
ddamayanti@student.unimelb.edu.au	Delete
jssinc@student.unimelb.edu.au	Delete
nandals@student.unimelb.edu.au	Delete
schandel@student.unimelb.edu.au	Delete
xind1@student.unimelb.edu.au	Delete

Description: Whenever a booking is made by any customer, these email will receive the notification to either accept or decline. And whenever any order is cancelled by a customer, a cancellation email is sent to these emails. There is a button “Add New Email” which can be used to add more people to the emailing list.

- 2) Customer cancel booking

The screenshot shows the 'Bookings' section of the Voucher Services application. A modal window titled 'Cancel Booking?' is open, asking if the user wants to cancel a booking for 'Bakery Goods'. The modal includes fields for 'Service' (Bakery Goods), 'Message' (Hi), 'Date' (2021-06-05 20:54:29), 'Shipment' (Local Delivery), and 'Status' (ACCEPTED). Below the modal is a table of bookings with columns: Service, Message, Date, Shipment, Status, and Operation. The table shows several entries, including one for 'Breakfast' with a message 'Hello' and another for 'Tea Party' with a message 'everything i needed is on the ground'. The status column indicates various booking statuses like ACCEPTED, CANCELED, DECLINED, and DONE. The operation column contains 'View' and 'Cancel' buttons.

Description: If a customer wants to cancel the booking, he/she can do it by clicking on the cancel button right to the view option and can confirm cancellation by clicking on yes or no.

3) Cancellation email when a customer cancels any order

The screenshot shows an email message with the subject 'Booking Cancelled By Customer'. The recipient is 'No Reply' with the email address 'to voucher.service.swen, adaivis, ddamayanti, xind1, jssinc, nandals, me'. The email was sent at 11:07 AM (5 minutes ago). The body of the email contains the following text:

Booking Cancelled By Customer

Name: Tester 13
 Phone: 0450240510
 Email: xxdd13test@gmail.com
 Date: 29/05/2021
 Time: 5:36 PM
 Service Name: Hi
 Delivery Mode: Pick Up

Description: Admin and people in the mailing list receive an email whenever a booking gets cancelled by a customer. The customer also gets the same cancellation email.

4) Admin can accept/decline

Voucher Services

Admin

Service	Customer	Message	Shipment	Date	Status	Operation
Bakery Goods	Test Customer	Hi	Delivery	6/5/2021 20:54	ACCEPTED	Accept Decline
Breakfast	Test Customer	Hello	Pick Up	5/29/2021 19:53	CANCELED	Accept Decline
Flowers	customer two	Same-Day Delivery	Pick Up	5/29/2021 16:09	PENDING	Accept Decline
Lunch	customer two	vegan plz	Pick Up	5/27/2021 18:16	CANCELED	Accept Decline
Tea Party	Xin	Mango	Pick Up	5/26/2021 23:07	DECLINED	Accept Decline
Tea Party	Xin	oo	Pick Up	5/24/2021 16:35	CANCELED	Accept Decline
Breakfast	Test Customer	mbncbd	Pick Up	5/22/2021 22:50	DECLINED	Accept Decline
Coffee10	jimbo	your finest beans	Pick Up	5/22/2021 12:15	CANCELED	Accept Decline
Flowers	Participant 1	-	Pick Up	5/21/2021 17:00	CANCELED	Accept Decline
Flowers	Lisa	-	Pick Up	5/21/2021 16:59	CANCELED	Accept Decline

Description: Once a customer books an order, the admin page shows an option for decline or acceptance. If the admin accepts the order, the status of the order is changed to ACCEPTED to both customer and admin booking page else it is changed to DECLINED.

5) Booking status for Customer booking page

Bookings

Service	Message	Shipment	Date	Status	Operation
Bakery Goods	Hi	Delivery	6/5/2021 20:54	ACCEPTED	View Cancel
Breakfast	Hello	Pick Up	5/29/2021 19:53	CANCELED	View Cancel
Breakfast	mbncbd	Pick Up	5/22/2021 22:50	PENDING	View Cancel
Coffee10	-	Delivery	5/21/2021 16:29	DONE	View Cancel
Breakfast	Originally booked for 0900 on 15/5. EST (New York)	Pick Up	5/15/2021 09:00	CANCELED	View Cancel
Breakfast	time zone test	Pick Up	5/13/2021 21:41	CANCELED	View Cancel
Tea Party	everything i needed is on the ground	Pick Up	4/30/2021 20:48	DONE	View Cancel

1-7 of 7 items < 1 > 20 / page

Description: Once a customer books some order, an email is sent to the admin plus a notification is added to the admin bookings page (where all bookings are mentioned) about the confirmation/ availability. If the admin confirms the booking, the status is changed to ACCEPTED. If a customer cancels the booking or the admin cancels the booking, the status is changed to CANCELLED. If a customer gets the order delivered, the status is changed to DONE.

6) Add billing information/ update billing information

Voucher Services

- Bookings
- Services
- Profile
- Billing**

Update profile

Biller Email

Name On Invoice

Contact Us
© 2021 Voucher Services

Description: If a customer wants to add/change the booking information, he/she can do it by clicking on the booking option.

7) Admin accepts email regarding new booking

No Reply
to voucher.service.swen, adaivis, ddamayanti, xind1, jssinc, nandals, me ▾ 11:04 AM (5 minutes ago) ⚡ ⋮

New Booking Recieved

Name:	Tester 13
Phone:	0450240510
Email:	xxdd13test@gmail.com
Date:	29/05/2021
Time:	5:36 PM
Service Name:	Hi
Delivery Mode:	Pick Up
Message:	

View Bookings

Description: Whenever a customer books an order, admin/staff members (whoever is in the email list) receives an email regarding the booking in order to either accept or decline.

Appendix: Email Templates

Template	Recipient	Purpose
1	Admin	New booking created
2	Customer	Voucher booking accepted
3	Customer	Voucher booking declined
4	Admin	Order cancellation by customer
5	Customer	Support request - Issue resolved

1. TO ADMIN : NEW BOOKING

**NEW BOOKING
ORDER NUMBER: MYD-6481222**

Name : DAVID KHIELS

Phone Number : 056711097

Email : dkhiels@myd.com

Date & Time : 21 May 2021 16.00

Message : Please add blue ribbon

[View/update detail orders](#)

2. TO CUSTOMER : ACCEPT VOUCHER BOOKING

Thanks David, your Click & Collect order is confirmed

ORDER NUMBER: MYD-6481222

Name : DAVID KHIELS

Phone Number : 056711097

Email : dkhiels@myd.com

Date & Time : 21 May 2021 16.00

Location : **FLORO MELBOURNE CENTRAL DISTRICT**
SHOP 101

MELBOURNE DISTRICT
MELBOURNE VIC 3000

[View detail orders](#)

3. TO CUSTOMER : DECLINE VOUCHER BOOKING

Sorry David,

Unfortunately, we can't process your click & collect for order number **MYD-6481222**.

Your remaining voucher's points are not sufficient to purchase this item(s).

**DECLINED
ORDER NUMBER: MYD-6481222**

Name : **DAVID KHIELS**

Phone Number : **056711097**

Email : **dkhiels@myd.com**

Date/Time : **21 May 2021 16.00**

[View detail orders](#)

Thanks,
MYD Customer Support Team

4. TO ADMIN : CUSTOMER CANCEL ORDER

**CANCELATION
ORDER NUMBER: MYD-6481222**

Name : **DAVID KHIELS**

Phone Number : **056711097**

Email : **dkhiels@myd.com**

Date & Time : **21 May 2021 16.00**

Cancelation Message : **Booking has been cancelled**

[View detail orders](#)

5. TO CUSTOMER : ISSUE RESOLVED

Your support request is now complete

Ticket # 226869

Hi David,

Your cancellations **ORDER NUMBER: MYD-6481222** has been completed.

If you need any further assistance, just reply to this email.

Thanks,

MYD Customer Support Team

Appendix: Minutes (Week 9 update)

Minutes 30/4

Subject:	Software Processes and Management (SWEN90016_2021_SM1)
Group name/ identifier	T16_01
Meeting Location, Date & Time	zoom, 2pm aest 30/4
Group members present	Alastair Daivis Decy Restyan Damayanti Xin Wei Ding James Sinclair Setender Nandal Sakshi Chandel
Apologies	

1 Actions from previous meetings

Task	Who is responsible	Deadline
Submit PMP	James	4:30pm 23/4
Update stakeholder map	Sakshi	4pm 23/4

2 Agenda items - discussion and decisions made

Issues? Help needed?
- Monday.com -> student plan; loss of => James to figure out what to do here
Dev status
Data model
Test review
- Use cases
- https://docs.google.com/spreadsheets/d/18mEBJUF3-y3bjZ9KOBnAIGtYzmi0J3IGvMzw_stVaBU/edit?usp=sharing
- Add monday tasks for bugs and crossref in spreadsheet
- Discussion of deletion behaviour
- UX
- https://drive.google.com/file/d/1mmPAgefKGNiE9GGDtRnJofya-VQGRNV3/view?usp=sharing
- Decisions on recommendations, documented in UX report
- James - assign to Alastair (done), then to devs
- Alastair - update use cases, assign to james
- Any other pieces missing?
- Accessibility?

- To discuss with Tianyi (email chain: Decy -> Setender) whether needed for blind users
- Don't know how to test: lighthouse built into Chrome; 76% for accessibility; performance improvements suggested
 - Future work (Decy)
- Responsive design
 - Already responsive, no action needed
- Online chat: future work (Setender)
- FAQ: future work (Setender)
- PM
 - Notify team of deployment (email)
 - Happy with weekly meetings

3 Agreed actions from this meeting

Task	Who is responsible	Deadline
Monday.com -> student plan; loss of gantt	James	
Update use cases based on release 1 testing	Alastair	
Update system based on release 1 testing	Xin	
Release 1 documentation	Sakshi	
Capture out of scope features/future work	Decy	
Accessibility email	Decy, Setender	

4 Next meeting

Location	Zoom
Date & Time	7/5 2pm
Goals	Release 1 completion

Minutes 7/5

Subject:	Software Processes and Management <u>(SWEN90016_2021_SM1)</u>
Group name/ identifier	T16_01
Meeting Location, Date & Time	zoom, 2pm aest 7/5
Group members present	Alastair Daivis Decy Restyan Damayanti Xin Wei Ding James Sinclair
Apologies	Setender Nandal Sakshi Chandel

1 Actions from previous meetings

Task	Who is responsible	Deadline
Monday.com -> student plan; loss of gantt chart <ul style="list-style-type: none"> - Extended trial for now - options are pay/move to microsoft project - ongoing 	James	
Update use cases based on release 1 testing <ul style="list-style-type: none"> - done 	Alastair	
Update system based on release 1 testing <ul style="list-style-type: none"> - Done 	Xin	
Release 1 documentation <ul style="list-style-type: none"> - To confirm updates (James, Sakshi) 	Sakshi	
Capture out of scope features <ul style="list-style-type: none"> - Done - Future work at bottom of UX document (Decy) - Where to include: <ul style="list-style-type: none"> - Project retrospective document 	Decy	
Accessibility email <ul style="list-style-type: none"> - Setender => needs to respond 	Decy, Setender	

2 Agenda items - discussion and decisions made

Issues? Help needed? <ul style="list-style-type: none"> - Clarification of email text task for Decy: would be better to call "email template" - Formal methodology - how to write use cases/tests? <ul style="list-style-type: none"> - Release 2 may use different approach for testing - Will await feedback on PMP submission 1 before changing process
Release 1 - updates from last week, based on UX evaluation <ul style="list-style-type: none"> - All implemented
Documentation - updates needed to release notes (Sakshi)
Risk review - any new risks/changes to current risks? <ul style="list-style-type: none"> - None identified
Release 1 completion <ul style="list-style-type: none"> - Release 1 review - business owner (Setender)
Wk 9 status update <ul style="list-style-type: none"> - Repo -> tag with Release 1 (Xin) = v1.0.0 <ul style="list-style-type: none"> - link to commit - add tutor to repo; show git log in PMP (James) - Need timesheets for everyone (All) - Earned value analysis <ul style="list-style-type: none"> - Methodology? - costing? - Status report wk 9 (james to complete; team to review)
Release 2 planning

- Review of key documents (James will review all too) =>
 - Use case (Alastair; Xin, Decy review)
 - UX design (Decy; Alastair review)

On UX Report.docx part Prototype (Billing & Profile Info)
<https://docs.google.com/document/d/14sLqAu35MBrW5wBpFGe9dgmd2ErOoV/edit#>
 - Email text (Decy to complete; Alastair) => lower priority
 On UX Email.docx
<https://docs.google.com/document/d/1majYu6lW1ZQjNeWrejlFoe6ZdT3sjG2i/edit>
 - Test plan (Alastair;)
 - Process
 - ready by wed morning; review by Wed evening
 - Email when ready for review; email when you have reviewed
 - Mark document as reviewed at top
- Usability evaluation
 - Participant => Decy will ask a friend to participate
 Test Plan on UX Evaluation.docx Page 8-13
<https://docs.google.com/document/d/1mmPAgefKGNiE9GGDtRnJofya-VQGRNV3/edit>

3 Agreed actions from this meeting

Task	Who is responsible	Deadline
UX design	Decy	12/5
Test plan	Alastair	12/5
Email text	Decy	15/5
Review key docs	Alastair, Xin, Decy, James	12/5
Timesheets	All	8/5
Status update wk 9	James	8/5

4 Next meeting

Location	Zoom
Date & Time	14/5
Goals	

Appendix: Minutes (Week 10 update)

Minutes 14/5

Subject:	Software Processes and Management (SWEN90016_2021_SM1)
Group name/ identifier	T16_01
Meeting Location, Date & Time	zoom, 2pm aest 14/5
Group members present	Alastair Daivis Xin Wei Ding James Sinclair
Apologies	Setender Nandal Sakshi Chandel Decy Restyan Damayanti

1 Actions from previous meetings

Task	Who is responsible	Deadline
Monday.com -> student plan; loss of gantt - No issue currently	James	
Release 1 documentation - To confirm updates (James, Sakshi)	Sakshi	
Accessibility email - Setender => needs to respond	Decy, Setender	

2 Agenda items - discussion and decisions made

Issues? Help needed?
Action items
Dev update - Release 2 functionality well underway - Looking like should be finished by Sunday

Use case/testing update (in work) <ul style="list-style-type: none"> - Test results sheet created for release 2 - Use case document ready for review: James, Decy
UX update (pending) <ul style="list-style-type: none"> - James follow up - UX spec for booking conf email but not other emails, Decy
PMP v1.0 marker feedback - Review <ul style="list-style-type: none"> - Walk through of items in PMP feedback - Go through in detail and figure out extra stuff needed (James) <ul style="list-style-type: none"> - E.g. <u>Project schedule improvements - make landscape + add wbs</u>
Local hosting? Project spec asks that we are able to host locally. Does current implementation support this? <ul style="list-style-type: none"> - Can just use `Firebase serve` command
Project Status Wk 10
Need to keep monday up to date - some items not marked complete
Demonstration <ul style="list-style-type: none"> - Needs to be prepared, more details to come, will be scheduled shortly

3 Agreed actions from this meeting

Task	Who is responsible	Deadline

4 Next meeting

Location	Zoom
Date & Time	21/5
Goals	

Appendix: Minutes (Week 11 update)

Minutes 21/5

Subject:	Software Processes and Management (SWEN90016_2021_SM1)
Group name/ identifier	T16_01
Meeting Location, Date & Time	zoom, 2pm aest 21/5
Group members present	Alastair Daivis Xin Wei Ding James Sinclair Setender Nandal Sakshi Chandel Decy Restyan Damayanti
Apologies	

1 Actions from previous meetings

Task	Who is responsible	Deadline
Monday.com -> student plan; loss of gantt (complete) <ul style="list-style-type: none"> - Trial was extended by Monday support - Replicated schedule in Microsoft Project 	James	
Accessibility email <ul style="list-style-type: none"> - Setender => needs to respond (complete) 	Decy, Setender	
Finalise text for booking emails (complete)	Decy	
Assign team to PMP updates (complete)	James	

2 Agenda items - discussion and decisions made

Issues? Help needed? None
Action items Reviewed (section 9)
Dev update re release 2 <ul style="list-style-type: none"> - UX changes based on UX feedback - complete tonight/tomorrow morn
UX testing update - summary + review recommendations <ul style="list-style-type: none"> - Decisions recorded in UX evaluation document. Dev team to implement small updates.
Use case testing update - status

<ul style="list-style-type: none"> - Will be complete tonight/sat afternoon <p>Release 2 source/documentation (in work, tonight/tomorrow morn)</p> <ul style="list-style-type: none"> - Release notes - Tag commit once finalised (1.1) <p>Release 2 review (completed tomorrow morn)</p> <p>PMP v1.0 feedback status</p> <p>For each item, we reviewed the current status. Closed several items and discussed the approach to finalise outstanding items.</p> <p>Project Status Wk 11 (today)</p> <p>Items to include:</p> <ul style="list-style-type: none"> - Completed features - UX testing results - Minutes - Chat logs - Timesheets (all to update) - Risks: no new items
<p>Demonstration (Tuesday 2pm)</p> <p><u>Marking guideline</u></p> <p>All team members need to be present</p> <p>Nominate a team member to share their screen and present the website.</p> <p>You have 5-7 minutes to present</p> <p>You will be asked to demonstrate these main areas:</p> <ol style="list-style-type: none"> 1. Create a customer 2. Make a voucher booking 3. Log in as Admin to view voucher bookings 4. Cancel a voucher booking 5. Login as admin and check that the bookings are cancelled. <p style="margin-left: 40px;"> <ul style="list-style-type: none"> - Xin will share screen and run through the demo <ul style="list-style-type: none"> - Renata in Monday tute stated that you are able to discuss implementation/technology but will only be marked on the points above - Mention of hosting/self-hosting ~ 30s </p> <p>Sunday afternoon - 3pm, we will do a practice run</p>

We will prepare a PPT as backup (Monday night - james)

Check for zoom link and share with group

Project retrospective (may be deferred to weekend)

- Confirm this is individual/group (James)
- Everyone in team should enter their points in
- Team will merge on sunday meeting

Preparation for PMP submission, plan for weekend

Outstanding tasks:

- Finalise dev work
- Finalise PMP feedback updates
- Finalise testing
- Enter comments for Project Retrospective
- Complete wk 11 project status update

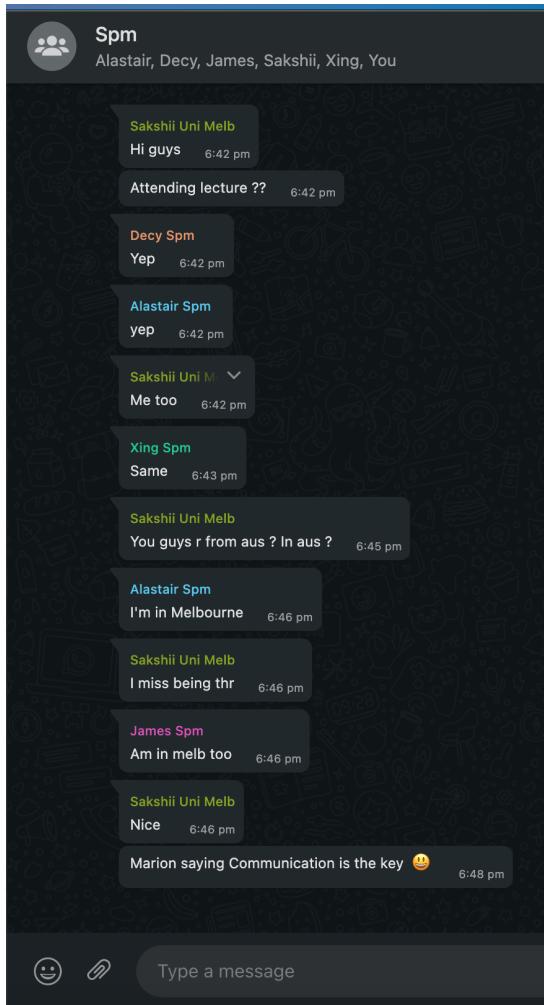
3 Agreed actions from this meeting

Task	Who is responsible	Deadline
- Finalise dev work (UX updates)	Xin, Sakshi, Setender	22/5
- Release 2 review	Setender	22/5
- Finalise PMP feedback updates	All, as assigned	22/5
- Finalise testing	Alastair	22/5
- Enter comments for Project Retrospective	All	23/5
- Complete wk 11 project status update	James	22/5
- Prepare demo backup ppt	James	24/5
- Tag commit v1.1	Xin	23/5
- Timesheet update	All	22/5

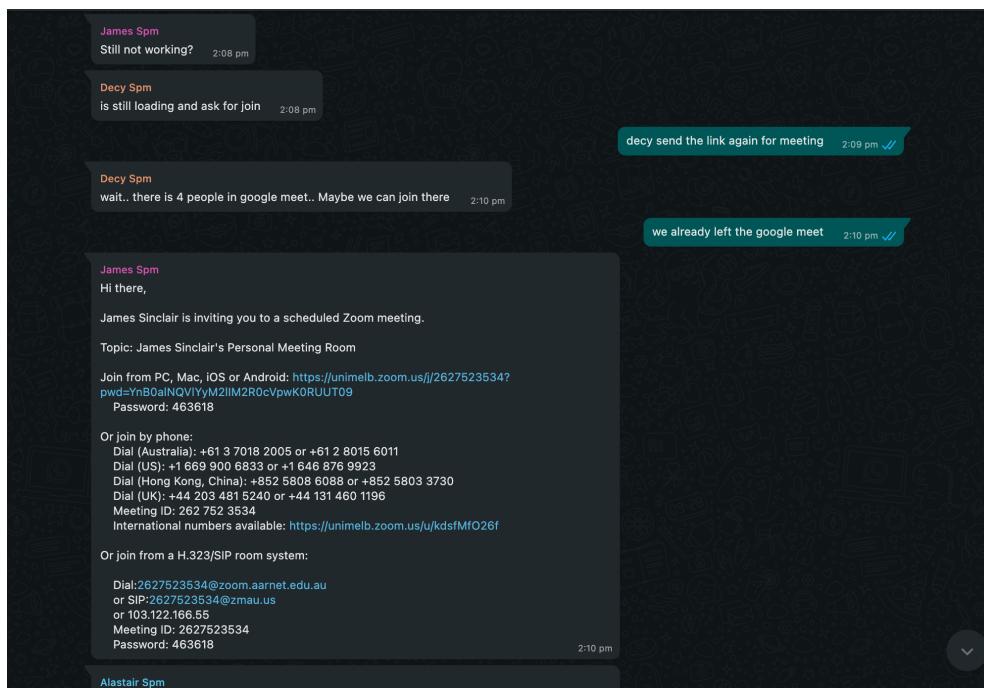
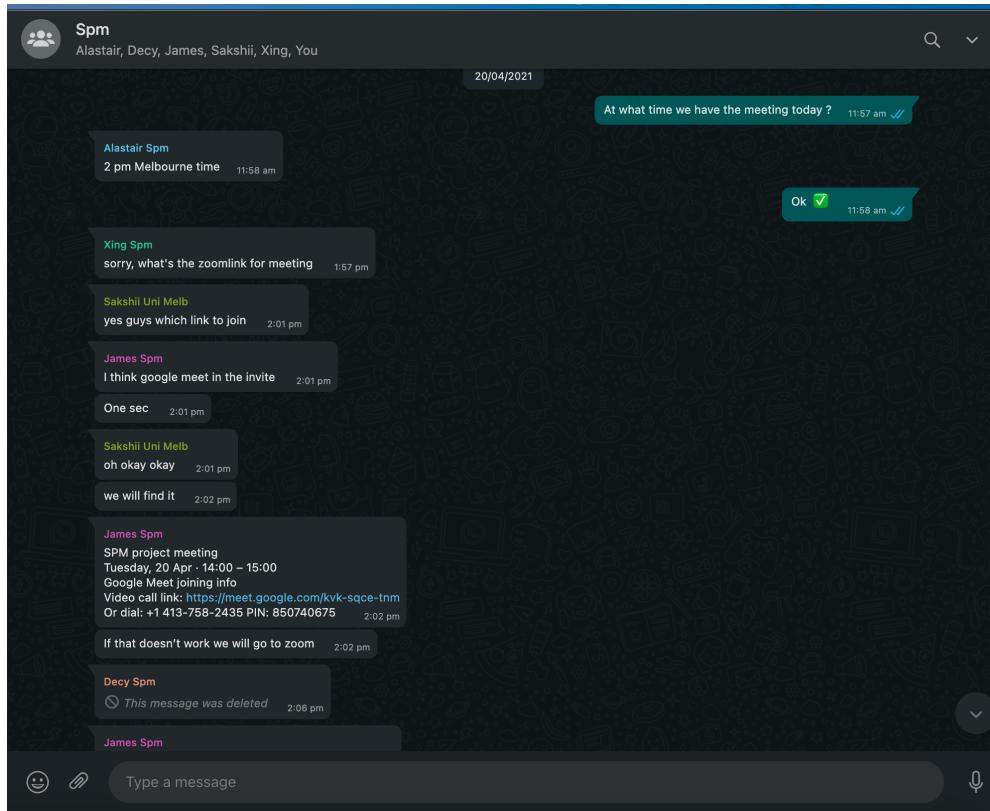
4 Next meeting

Location	Zoom
Date & Time	3pm Sunday
Goals	Merge Project retrospective Finalise PMP Demo dry run

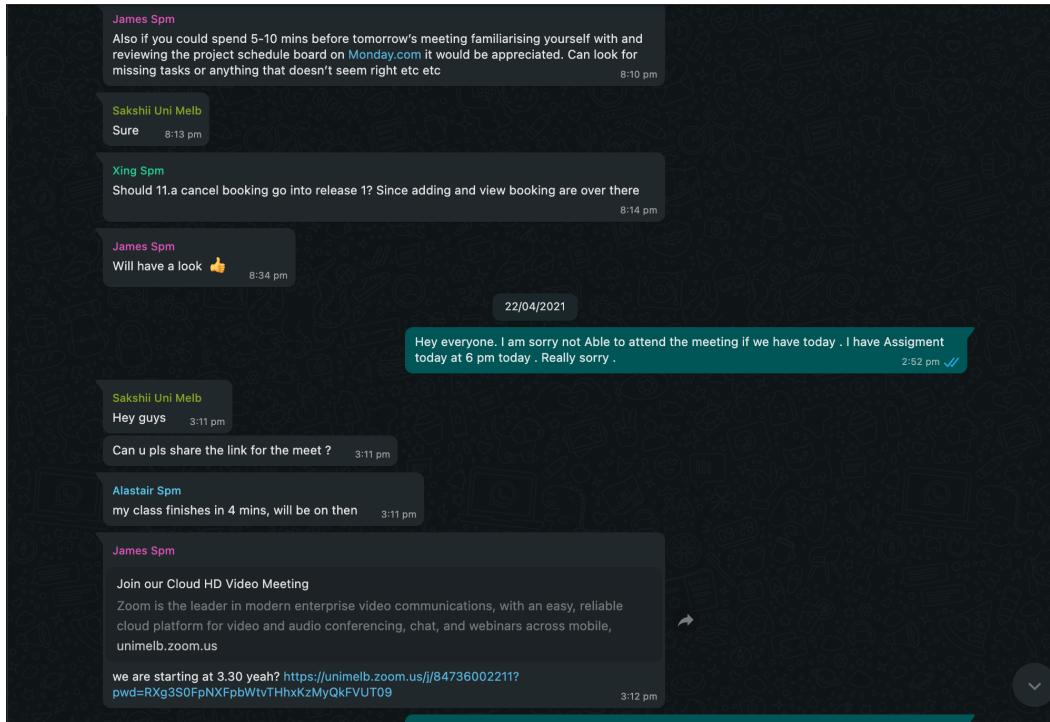
Appendix: Whatsapp Messages



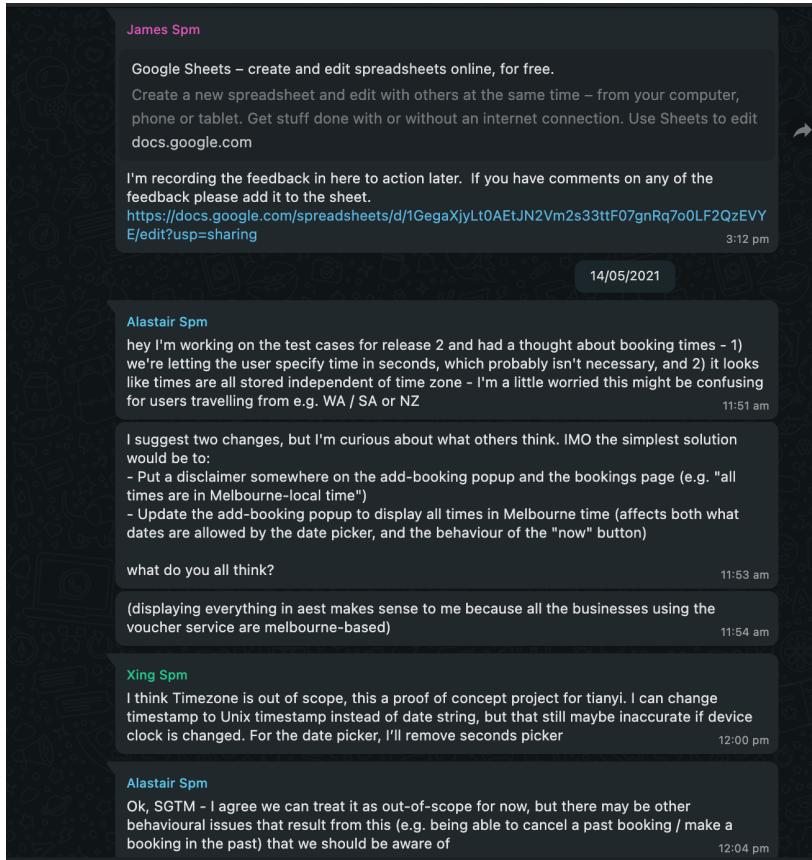
Team Forming on whatsapp



Coordinating meetings and technical glitches



Asking team for review of key artefacts, and coordinating team meetings



Discussion of test results