
SWEN90016 GROUP PROJECT

PMP Version 1.3

Group Name: GiveMeFive

MEMBERS

Xinjie Lan (910030)

Chen Xu (945756)

Runsheng Zhao (941554)

Shenglan Yu (808600)

EXECUTIVE SUMMARY

The project aims to build a business website for a startup doing box delivery business among Indonesian community in Melbourne. The website is the capstone of the client's business proposal which aims to offer a customer-friendly and information transparent service. The key stakeholders are the clients, the team, and business customers. The initial release includes a set of website interfaces for shipper, collector and customers, basic user identity features and order manipulation features. However, some advanced features such as online chatting and address validation are out of scope in the initial release. A team made up of four SWEN90016 students is assigned to develop the project. The team decides to use Waterfall SDLC model for development in interest of efficient execution and detailed planning. The lack of team's developing experience and testing cases may affect the execution of the project.

Upon the Waterfall model, main roles such as business analyst, project manager, risk analyst, senior users and tech experts are allocated among the team members according to the skill of each member. The main communications between team members happen through face-to-face meeting and formal documents.

The team has identified several business, project and product risks which will affect the development process in non-trivial manners. Most of the risks will be mitigated by careful design and dedicated research.

The team decides to use a combination of Wix and Firebase developing tools to implement the project, considering the team programming skills and practice emphasis.

The development stages are splitted into Concept, Requirement, Design, Implementation and Acceptance Testing stage. In Concept stage, the team have executed stakeholder analysis, requirement elicitation and management planning. The outcome of concept stage is delivered in this Project Management Plan(PMP). In Requirement stage, more detailed project requirements will be identified and delivered through System Requirement Specification(SRS). Function Points cost estimation will also be conducted in the stage. In Design stage, comprehensive system design will be implemented with a series of documents including Interaction diagram and UML. The detailed development tasks will be conducted in Implementation stage. The integrated system testing and whole development process review will be held in Acceptance Testing stage.

The overall development cost is around 225 human hours by Parkinson's Law estimation.

The whole time frame is 5 weeks and the main project milestones are set as follow:

- A. Week 8: Accomplishment of Project Management Plan(this report) version 1
- B. Week 9: Accomplishment of System Requirement Specifications(SRS) and Function Points cost estimation
- C. Non-Teaching Week: Comprehensive Design Accomplishment
- D. Week 10: Functional Software
- E. Week 11: Final Product

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1.0 INTRODUCTION

1.1 Purpose of document

A good project won't be accomplished without a good guideline. The purpose of this document is to play such a role which provides comprehensive instructions about the project scope, key players and related plannings. This document can be considered as a formal evolving document that plans and manages the project. How the project is executed, monitored and controlled is defined in this document.[1] Some key elements that regard the success of the project such as the risks, constraints etc. will be considered. Overall, this document provides a good reference as the project going on.

1.2 Audience of document

Version 1.1 Update

In the version 1.1, the team introduced team members into the audience.

The audiences of the document can be categorized into all the parties who are involved in this project because a lot of critical information they need are stored in this document. For example, the project sponsor, Shanika, and the business owner, Susanto, will use this document to monitor the process of the project. The team will use the document as a main material to execute the project. The team members are Business analyst, Project manager, Senior users, Technical expert, and Risk analyst. The project manager owns, controls and populates this document throughout the project.[1]

1.3 Limitations of document

Version 1.1 Update

In the version 1.1, the last limitation was depreciated.

There are some considerations deserving discussion. One aspect is that the document does not breakdown the requirements of the project into specific details. This document just lists the scopes of the product but does not indicate what exactly the technical team needs to yield.

Another limitation is that this document cannot help business owner to estimate if the project will satisfy his investment because this document does not show every aspect of the project plan. For example, this document does not include financial analysis such as ROI. The business owner has to develop his own approach to estimate the financial part.

Deprecated: The team members are all students lacking practice developing experience. Thus, the estimation involved in the document may be inaccurate.

1.4 Evolution of document

<i>Version</i>	<i>Created by</i>	<i>Date created</i>	<i>Location</i>	<i>Comments</i>
1.0	Runsheng Zhao Shenglan Yu Chen Xu Xinjie Lan	13/Sep./2018	University of Melbourne	This is the first version of the document which contains planning scheme about the project.
1.1	Runsheng Zhao Shenglan Yu Chen Xu Xinjie Lan	28/Sep./2018	University of Melbourne	<p>This is the second version of the document which updates some sections on the teaching team's feedback. The project execution status from Week 9 to non-teaching Week is added.</p> <p>Updated sections are: 1.2 Audience of document, 1.3 Limitation of document, 2.1 Key Stakeholders, 2.2.2 Out-of-Scope, 2.4 Business Value aspect C, 2.5 Constraints, 3.1 Roles and Responsibilities, 3.2.1 Communication Matrix, 3.3 Risk Management, 3.4.1 Technology Research Result Table and 3.5.3 Cost Estimation</p>
1.2	Runsheng Zhao Shenglan Yu Chen Xu Xinjie Lan	05/Oct./2018	University of Melbourne	<p>This is the third version of the document which updates Section 4.2. The project execution status in Week 10 is added. Section 2.2.1 was updated with adjusted feature. Section 3.3 was updated with new risk 12 and adjusted risk 9. Appendix A,B,C were updated to show Week 10 meeting records. Appendix H was extended with testing results.</p>
1.3	Runsheng Zhao Shenglan Yu Chen Xu Xinjie Lan	13/Oct./2018	University of Melbourne	<p>This is the fourth version of the document which updates Section 4.3. The project execution status in Week 11 is added. Appendix A,B,C were updated to show Week 11 meeting records. Appendix J User Acceptance Testing was added.</p>

2.0 PROJECT INFORMATION

2.1 Key Stakeholders

Version 1.1 Update

In the version 1.1, internal stakeholders include not only the business owner, his partner, and the team, but also the teaching team. The updated version also states the influence of stakeholders on the project.

Internal stakeholders are the business owner, his partner, the team, and the teaching team.

<i>Internal Stakeholder</i>	<i>Benefit</i>	<i>Influence on project</i>
Susanto (Business owner)	Besides economic return, the success of the business can bring self-accomplishment to the business owner. The owner has worked in the industry for several years. However, he could not realise his innovation plan at the box shipping company he worked for. Building a successful company will bring him not only a good fortune, but a self-accomplishment.	The business owner defines the product he needed for his business. The final product made by the team should satisfy his expectation.
Susanto's brother in law (Business partner)	On the other hand, the owner's partner, who runs a successful furniture delivering company, can extend his business into a new industry by providing package delivery.	His influence on the project is insignificant, since he is only responsible for the delivery. The interface of the final product should match his actual needs.
The team	At last, the team can have a deep understanding of software process management with practice.	Implement the project, and complete PMP under supervision of the teaching team.
The teaching team	By supervising the team, the teaching team can complete teaching tasks. The teaching team also improves the teaching skill.	The teaching team can advise on team's questions about the project, and give feedbacks based on each updated version of PMP.

External stakeholder is the customer.

There are mainly four values to the customer. First of all, the customer can easily submit shipping-bookings online and track packages. Second, since the new business provides pick-up and delivery services, it saves the customer's cost and time spent on transportation to the warehouse. Third, customer can experience information transparency. Customers can check available shipment dates without contacting customer service over the phone. Whenever there is a delay due to the weather condition, the customer can learn it directly from the website. Fourth, customers have more service providers to choose. For those customers who are not available to drop off the warehouse, the new business is highly attractive.

2.2 Scope

The project aims to build a business platform supporting basic delivery-related functions. However, more sophisticated features are reserved in future development in interest of meeting timeline and delivering quality.

2.2.1 In-scope features

Version 1.2 Update

The payment feature (*ID: 13*) was adjusted as the payment feature is not provided by Wix freely. The team made the payment link and interface but did not implement the actual payment feature.

After requirement elicitation and evaluation, the preliminary product scope are defined. There are fifteen high-level features in the list. More dedicated features will be addressed by Software Requirements Specification (SRS) in Requirement stage.

1. Users can register their information (Email Address, RealName, Home Address, Contact Number) into the system combined with a password.

High importance because registration is one of the basic requirements of a website platform.

2. This product should provide a login function that enables customers to log into the system by their registered email and password. Non-valid login requests should be denied by the system.

High importance because without login function, users won't be able to use this product.

3. This product should allow registered users to update their personal information.

High importance because the most up to date personal information provides vital credibility about the user.

4. A booking feature that allows logged customers to create a shipping booking by typing in their request information from user interface. The request information should meet a rigid data format requirement.

High importance because without an order, there won't be any businesses happening.

5. A date recommendation feature. In this feature, the system should prompt three available shipping dates of departure and arrival to the customers.

High importance because this function will help the shipper have a good control of his capability.

6. This product should be able to automatically generate a shipment quote by the request information. The quote plays as an confirmation role which ensures the information validity and gives customers a direct idea of the service price.

Medium importance because users can still use this product even there is no quote for them, but the feature provides better service experience.

7. A database feature that allows the system to store customer registration information, customers' order history and order status.

High importance because storing data is the fundamental feature of almost any software products.

8. A viewing feature that enables customers to view (but no editing permit) all the shipping_bookings and associated information created by them.

High importance as the feature help customers to trace their orders.

9. A *shipping_booking ACK* manipulation feature that allows the shipper to create and edit the *shipping_booking ACK* following each booking request. The *shipping_booking ACK* should meet certain data format requirement.

High importance because the feature plays as a communication channel between the key players of the business. The feature is the capstone of Susanto's business which labels better customer service.

10. An email generating system that automatically sends emails to collectors and customers whenever there is a change in ACK.

High importance because keeping customers up to date will greatly improve user experience of this product.

11. A classification feature that enables the system to differentiate super users(herein shipper and collector) from normal users(herein customers).

High importance as the system gives different operation permissions for different types of users.

12. A default information registration feature that enables the system to store predefined email username and initial password for shipper and collector.

High importance as the system needs to recognize shipper and collector.

13. There should be a payment feature which allows customers to pay their shipment cost.

Medium importance. Even though this function will provide convenience for the customers, people can pay their costs face to face.

V1.2 Update

The team made the payment link and interface but did not implement the actual payment feature as Wix charges the service. The feature can be extended in future if the product can be taken into real business use.

14. A website-based graphical user interface system that enables all involved players to perform permitted operations from the website interfaces.

High importance as the interfaces provide function transparency to users. The interfaces are the main channels for all players to get information and do operations.

15. There should be a function that allows users to query the orders. For example, a user typed in a tracking number on the home page, and then there will be an order status feedback.

Low importance. Although tracking through home page is convenient, people can track their order through their order history.

2.2.2 Out-of-scope features

Version 1.1 Update

In the version 1.1, hosting, data validation, and payments for cargo booking are the three extended out-of-scope features.

The project team is not responsible for delivering the following eleven features listed. They might be considered for future enhancement.

1. Customers are not allowed to edit their submitted orders, so the team won't create the editing function.
2. No login interfaces for shippers and collectors as they have predefined username and password.

3. Although a mobile interface may be a convenient feature for customers, this feature can be added in the future when the business goes up. The team won't include a mobile interface in this project.
4. The team will not create address validation function for users when they create the orders.
5. The team won't create an online chatting feature in this product because there is no time and people to support this customer service.
6. Although the business targets Indonesian customer who live in Melbourne, the language used in this product is English because creating an Indonesian language interface will be costly and none of the team members are familiar with Indonesian. No Indonesian interface will be included.
7. The team won't create a password reset function which means it is customers' responsibility to keep the password.
8. No customer service function will be included in the project which allows users to contact with business owner through system-generated email.
9. Hosting the website is not the responsibility of the team.
10. Data validation will not be considered by the team, which means it is users' responsibility to keep data integrity.
11. Although the team plans a payment function for customer, payments for cargo booking will not be included because this is a customer-oriented project.

2.3 Delivery approach

The team decides to deliver the project using Waterfall SDLC model.

Through case study, some development related features and their connection with choice of SDLC model were addressed:

Rigid Requirements

As a business service supporting platform, the scope of the project website is quite rigid. Susanto's business focuses on a very specific business segment, providing fixed-destination delivery for Indonesian communities in Melbourne. The internet trend of delivery industry has been happening for a long time, and quite a lot of delivery companies such as Australia Post and DHL have already implemented their website interfaces. Also, in a predictable future, the service scope of delivery industry is quite fixed. Thus, considering the target customers, business geometry scope and delivery industry nature, the business requirements are rigid and predictable. The project website needs to implement the basic features supporting the business. Looking at

the features list, we find that almost all features in scope are necessary. Thus, the requirements are quite rigid.

Justification: Formal approaches make more sense for projects which have little or no change and whose requirements are well defined and documented.

Documentation

As the project sponsor (*herein SWEN90016 Teaching team*) requires, the documentation work should be detailed enough to show the planning and execution of the project.

Justification: Waterfall values documentation work much heavier than Agile does.

Developer Experience

All team members of the project are new to practicing software development and processes. Thus, the project is more likely to succeed using an SDLC model which is easier to execute.

Justification: Agile as an iterative approach is harder to implement than formal approaches, since the values Agile prefer are far away from traditional management methodology. Thus, the more classical way - Waterfall which is straight enough is more suitable for an amateur team to apply.

Feature Dependency

The interdependency of the features is strong. To be a runnable and effective business platform, the shippable product should include all the shipper interfaces, collector interfaces, customer interfaces and complementary features. The business can not work without any features in scope.

Justification: The agile way prefers to break the product features into product backlogs, and develop backlog features iteratively in each sprint. One of the key in the process is delivering working software in each sprint. However, in project like this one whose features are highly dependent, it is hard to deliver a working product with some features abandoned. By contrast, in formal approach, all related features will be designed in an integrated manner. Thus, this product feature matches formal approach better.

User Commitment

Users only involve at the beginning and ending of the project. It is hard to find real Indonesian users to involve in the project. Also, considering the predictable user features, senior user involvement at the beginning and ending should be enough to address the project purpose.

Justification: One key component for implementing Agile process successfully is the frequent attendance of users. Without user's time commitment, Agile's flexibility stands on nothing.

Strict Timeline

As the project sponsor requires, all the features should be delivered by the middle of this October which has four more weeks. Without finishing all features in the time frame, all efforts will be wasted.

Justification: For project which has to be delivered in a strict time, Waterfall holds advantage as its upfront planning can produce far more accurate time estimation than Agile's.

The following evaluation table[19] gives an direct sense about which approach is more suitable to the project. A higher score (totally 10 points) indicates the feature fits formal approach better while lower score indicates the feature fits Agile way better.

Category	Relative scores	0 => "Innovation"	"Recipe" <= 10	Justification
Requirements	9	Requirements are vaguely defined and open to change in the process of development	Requirements are very well defined. Users are able to demonstrate requirements clearly at the beginning stage of the project	The project requirements are well defined and rigid.
Change	9	Scope changes frequently	Scope is stable	Considering the requirements and time frame, the scope is unlikely to change.
Resources - Dedication	5	Project team and clients can be 130% dedicated to the project	Project team and clients can't be 100% dedicated to the project	The team is dedicated while clients aren't.
Customer Involvement	9	Users are available and should be involved in a regular base	User only involve in the beginning and ending stage	Customers aren't available all the time.
Release	8	Users accept lighter release for use	Users demand a complete delivery for use	The interdependence of features is

				high.
Documentation	9	Minimum documentation is accepted	Detailed and rigid documentation is required	Detailed Documentation is required
Overall	8			

2.4 Business Value

The website itself is a tool for the business owner to communicate to customers and manage the business. Its business value lies in several aspects.

Version 1.1 Update

In the version 1.1, the connection between replacement of communication method and employment(Aspect C) is explained more clearly.

- A. The website reduces the internal procedure complexity. In other words, this website handles the shipping orders, gives out recommended date, and manages the membership system. There is no need for the business owner to manually manage these tasks separately. Namely, there will be more resources for the business owner to improve the service.
- B. The website reduces the communication cost between the service provider and the customers. With this website, customers can make orders and track information online. Customers do not need to call the service provider again and again or wait for the service provider calling back to solve their problems. In addition, this website can effectively reduce the mistakes caused by poor communication quality or human misconduct.
- C. Since the website can replace nearly all the traditional communication task in the industry, there is no need to hire many employees to answer phone calls for new booking or after-sale service. The website can handle new bookings and queries of orders. Thus, the cost of labor is reduced. And less employee means simple management, the cost of management is reduced at the same time. (**Modified in Version 1.1**)
- D. This service can bring good competition into this shipping industry and make this industry healthier. Once the business succeeded, the service and website may become the benchmark of the industry. The service quality of the whole industry will be improved.

2.5 Constraints

There are two main considerations that may impact this project.

Version 1.1 Update

In the version 1.1, the team deprecated old constraints which are repeated as risks and identified two new constraints.

- A. Missing historical data to estimate velocity of the project is one of the constraints. The velocity estimation is depended on pure assumption and theory rather than empirical experience. Without empirical data support, the velocity estimation may be unrealistic.
- B. Another constraint is unspecific UX up front designer because the team lacks UX design experiences. The team didn't specify a certain member to be this role, so the team will work together to fulfill this job. With more people getting on the design job, it may be hard to confirm one single plan which satisfies all team members.

Deprecated:

- A. The team lacks web development experiences.
- B. The team has insufficient testing cases for this project due to lack of time and resources.

3.0 PROJECT GOVERNANCE

3.1 Roles and Responsibilities

Version 1.1 Update

In the version 1.1, the teaching team is also included as the project supervisor, since the teaching team plays an important role in the project

<i>Role</i>	<i>Name</i>
Business analyst	Xinjie Lan
Project manager	Shenglan Yu
Senior users	Christina Xu, Xinjie Lan
Technical expert	Runsheng Zhao

Risk analyst	Christina Xu
Business owner	Susanto & his brother in law
Project supervisor	The teaching Team

Responsibilities

- **Business analyst** [14]
 - Outlining problems and opportunities
 - Define business requirements
 - Create solutions for a business
 - Identify business value
- **Project manager** [1]
 - Planning: define the scope, develop schedule, develop policies and procedures.
 - Leading: set direction, coordinate activities, motivate members, assign work.
 - Organising: determine structure, identify roles, staff all project positions
- **Senior user** [1]
 - Accept and deliver the benefits
 - Ensure the appropriate quality standard of the final product
- **Technical expert** [17]
 - Provide technical support
 - Troubleshoot products and services
 - Mentor/train team members technology skills
- **Risk analyst**
 - Identify risk
 - Develop response strategy to identified risk

- Identify happened risk and update status

3.2 Communication Plan

Version 1.1 Update

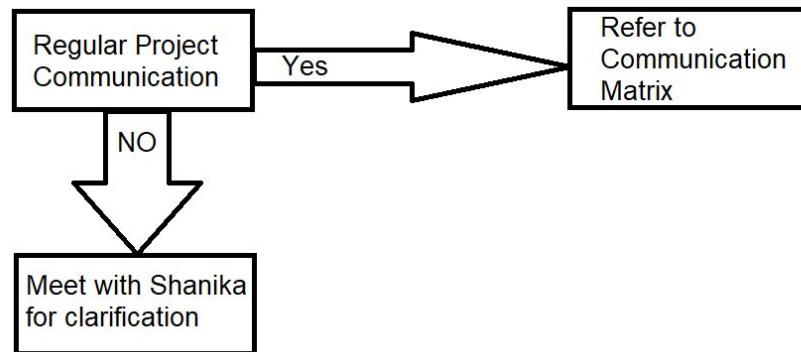
In the version 1.1, communication matrix are extended for client and tutors. The communication frequency with Internal IT is adjusted to twice one week.

3.2.1 Communication matrix

<i>Stakeholder</i>	<i>Communication objective</i>	<i>Format</i>	<i>Frequency</i>	<i>Owner</i>	<i>Importance</i>
Senior User	Gather Requirement; Define scope; Design acceptance testing	Face-Face Meeting Formal report and artefacts like acceptance testing cases	Weekly	Project manager	High
Business Analyst	Identify business value; key stakeholders and high level requirements	Face-Face Meeting Formal report	Fortnightly	Project Manager	Medium
Internal IT staff	System design; Requirements breakdown; Development and product Implementation	Face-Face Meeting Online video meeting. Formal report and artefacts	Daily V1.1: Adjusted to twice one week considering the geometric constraints.	Project Manager	High

		such as SRS, Interaction Diagram	The team holds video meeting on non-face-to-face meeting day.		
Risk analyst	Identify risks and response strategy; Update risk status	Risk Management Report	Weekly	Project Manager	High
Clients	Define scope; Provide feedback of the product; Accept product	Formal report; Presentation; Demo	Fortnightly (Hard to achieve as the client is fictional)	Project manager	Medium
Tutor	Technical Support; Advisory; Provide feedback	Forum discussion Face-Face meeting	Weekly (Adjusted as needed)	Project manager	High

3.2.2 Communication FlowChart



3.2.3 Communication Escalation Plan [2]

Priority	Definition	Decision	Timeframe for

		<i>Authority</i>	<i>Resolution</i>
Priority 1	Significant impact to this project. A situation that needs to be resolved as soon as possible. If the problem exists, the schedule will be adversely impacted. For example, some serious dysfunctional conflict.	Shanika	Within 1 business day
Priority 2	Not the worst impact to this project but the impact which may result in some adverse impact to schedule.	Project Manager	Within 2 business day
Priority 3	No big impact on the project but with small issues that insignificantly impact the schedule.	Project Manager	Within 3 business day
Priority 4	No negative effect to but may provide better suggestions to this project. For example, design improvements.	Project Manager	Work continues and any recommendations are submitted via the project change control process

3.3 Risk Management

Version 1.1 Update

In the new version of PMP, the team identified new risk (Risk ID 11) and adjusted some original risks (Risk ID 8).

Version 1.2 Update

In the new version of PMP, the team identified new risk (Risk ID 12) and adjusted some original risks (Risk ID 9).

The team figured out 10 risks which may affect the project in non-trivial manners. All risks are categorized into *low*, *medium*, *high* probability and impact groups with the team's best effort.

Note: Risks listed in the following table are in descending order (With highest exposure risk listed first).

High prob: 70% - 100%. Medium prob: 30% - 70%. Low prob: 0% - 30%

High impact: 7-10. Medium impact: 4-7. Low impact: 1-3

High exposure: 4.9 - 10. Medium exposure: 1.2 - 4.9. Low exposure: 0 - 1.2

Risk ID	Risk Type	Description	Probability	Impact	Exposure
1	Business	Customers may not be able to afford the service.	70%	9	6.3
Justification: The business scale may restrict the business owner to negotiate a good price with shipping suppliers. To cover transportation and website maintenance cost, the owner may have to charge a higher price than competitors'. According to substitution effect theory in microeconomics, certain customers would prefer a similar service with a lower price. Thus, the risk may affect the market share. Both the impact and probability are high.					
2	Business	The business may struggles to build the credibility among customers.	80%	7	5.6
Justification: Unlike other competitors who rent warehouse and have professional transportation tools, the owner does not have a professional working space that customers can visit. Hence, it is harder for the owner to build trust. As a result, the difficulty of obtaining market share may affect the business massively. Hence, it is a high risk.					
3	Business	Security risk of packages.	70%	7	4.9
Justification: The owner has to ensure the safety of packages. Loss of goods or broken packages leads to compensation. It is dubious that the owner has the demanding security in his garage. The security risk may cause the customer churn and hurt the business image. If the owner could not afford the compensations, the business may even go bankrupt. It is a high risk.					
4	Business	The business partner in Indonesia may lack required professional skills.	30%	6	1.8
Justification: The general delivery industry is quite different from furniture industry. Susanto's brother in law may lack professional plants, tools and experience to take care of					

<p>the delivery channel. The risk may result in bad service and delivery delay which will affect the business fundamentally. Considering the business scale in early stage, the risk exposure is moderate currently.</p>					
5	Product	The product may be hard to adapt extensible future enhancements.	30%	6	1.8
<p>Justification: Depending on the design structure, the system may be hard to extend new features. The risk may restrict the business development but has low probability to happen at early business stage.</p>					
6	Project	The schedule of the project plan may be hard to follow.	40%	4	1.6
<p>Justification: The schedule planned may not be feasible due to cost estimation error, unfamiliar developing tools, and inexperienced team members. However, the team members are flexible enough to deal with the schedule issues by committing more time. Thus, the risk has limited impact. As a result, it is a moderate risk.</p>					
7	Business	The risk of scalability. The service quality may decrease as the order number increases.	20%	8	1.6
<p>Justification: Without reliable resources, the owner cannot provide professional service. Considering the expected business conditions such as the warehousing plants and transportation tools, the business may not be able to afford the blooming of orders. Susanto may need to make choice between scale and quality. The risk impact is high since it may affect the baseline of the business. Since it is unlikely to happen in the early stage, the risk is moderate.</p>					
8	Product	The software may crash under some cases.	30% <i>V1.1: 20%</i>	5 <i>V1.1: 3</i>	1.5 <i>V1.1: 0.6</i>
<p>Justification: Due to limited testing cases, the software may crash under some unpredicted conditions. The majority of user cases will be tested by the team, and mature framework will be applied. Thus, the impact is moderate.</p>					

<p>Update: Both the impact and probability are reduced as the Wix framework has supplied quite mature environment and the team has made sufficient testing cases to minimize the probability.</p>					
9	Product	Design logics may conflict with actual implementation.	35% <i>V1.2: 10%</i>	3 <i>V1.2: 2</i>	1.05 <i>V1.1: 0.2</i>
<p>Justification: The team is not familiar with the design of ordering system. There might exist problems in the class design that will cause some minor implementation issues. The risk may cause some local inconsistency but is unlikely to cause global logic issues. It is easy to fix local issues during implementation. Hence, it is a low risk.</p>					
<p>Update: At the implementation stage, the team find the design outcomes are quite reliable to follow. The procedure is quite smooth with only minor conflicts met. Thus, the team reduced both the impact and probability of the risk.</p>					
10	Product	The website server may not be able to carry large customer capacity.	20%	5	1.0
<p>Justification: The team plans to use third-party service for the distributed system. The team has low control on the capacity. If there are too many customers visiting the website at the same time, the website might crush. It is a low risk since the issue is unlikely to happen at the early stage, and many options of mature server suppliers are on market.</p>					
11 (New in V1.1)	Project	The applied framework may not be sufficient to achieve all requirements.	80%	3	2.4
<p>Justification: Although Wix and Firebase are powerful website development solutions, some back-end requirements implementation may still need full-stack developing skills such as JavaScript. The probability is high and the impact is low as the hard coding lines amount is unlikely to be high.</p>					
12 (New in	Product	The applied framework may has some internal API error and leads to unexpected	60%	3	1.8

V1.2)		outcomes under some cases.			
Justification: The main applied framework Wix may have some internal API constraints or bad documentation. These internal deficiencies may lead to some inconvenience and minor problems in actual uses. However the overall performance of Wix is accepted by the industry. Thus the risk has limited exposure.					

The team develops risk management plan for the risks in control of the team.

Risk registers table is given as follow:

Risk ID	Trigger	Owner	Response	Resources Required
5	A new function from future enhancement is impossible to extend on the current SAAS, or the extension will affect the original system massively.	Project team	Mitigate (The team can take consideration of possible future enhancements to lower the risk and try more open design patterns during design stage.)	Human resource on listing potential future enhancements and researching appropriate design patterns.
6	Any sub task takes longer time than schedule.	Project manager & Risk Analyst	Mitigate (Apply more precise cost estimation skills to give a more realistic schedule.)	Human resource on learning project management skills, making detailed estimation and inspiring the team.
8	The software runs unusually under some circumstances.	Technical expert	Mitigate (Try to test the software with sufficient edge testing cases and use reliable	Human resource on testing plan and researching development framework.

			developing frameworks.)	
10	The website loads very slow or act irregularly.	Technical expert	Mitigate (According to the estimated business scale, choose the reliable server supplier.)	Human resource on searching server suppliers and estimating website daily visitor number.
9	During the implementation process, the team find hard follow the logic of the design.	Project team	Mitigate (Breakdown the requirements into detailed level and create sufficient artefacts like SRS and UML to decrease the risk exposure.)	Human resource on making detailed artefacts during design stage.
11 (New in V1.1)	Some requirements can't be achieved by Wix.	Technical expert	Mitigate (The team will make detailed requirement breakdown and evaluate the feasibility. The team will learn JavaScripts skill in advance to meet some inevitable cases.)	Humans resource on learning JavaScript skills.
12 (New in V1.2)	The wix page doesn't work as expected while the implementation seems to be correct.	Technical expert	Mitigate (The team will make sufficient trial on the pages and give proper information to	Humans resource on searching the Wix documentation and related FAQ and trialing the page errors.

			users given on the trial result.)	
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3.4 Technology

Version 1.1 Update

In the new version of PMP, the result table includes a new column(Capability) to show what deliverables and risks the technology can address.

The team made a comprehensive research on available development framework. A qualitative description of each framework is given and the final choice justification is delivered at the end.

3.4.1 Technology Overview

A. Front-end

a. Bootstrap

Bootstrap is mainly based on jQuery for JavaScript processing and supports LESS for CSS extension. Bootstrap framework is very satisfactory in terms of layout, control and special effect, and it has preset rich effects. With the wide use of Bootstrap, extension plug-ins and components are also very rich. However, Bootstrap does not fit IE ideally. [3]

b. jQuery UI & Mobile

JQuery UI is an extension of the desktop terminal in the jQuery project team, which includes rich controls and effects that are seamlessly compatible with jQuery.[4] At the same time, a variety of elegant styles are preinstalled in the jQuery UI.

JQuery Mobile is an extension of the jQuery project to Mobile terminal.[5] Currently, it supports iOS, Android, Windows Phone, Blackberry and other mainstream platforms. In addition, jQuery Mobile is generous with its layout, controls, and effects.

c. Angular.js

Angular features creating single-page applications requiring nothing more than HTML,CSS, and JavaScript on the client side. Its goal is to enhance the model-view-control (MVC) functionality of the page to simplify development and testing.[6]

d. React.js

React will automatically manage UI interface to update as the data changes. When the data changes, React is conceptually the same as when you click on F5 but it just updates the part of what is changed.

e. Vue.js

Unlike other large frameworks, Vue is designed to be applied layer by layer from bottom to top. Vue's core library focuses only on the view layer, making it easy to get started and integrate with third-party libraries or existing projects. Compared with Angular.js, Vue.js provides a more concise and easy-to-understand API, which enables us to quickly ground hands and use Vue. Js. [7]

f. Wordpress

Wordpress has a strong plug-in model which can expand small blog program to meet the functional needs of individual, enterprise, information portal and other sites. The code can be uploaded to user's own server for convenient secondary development and management. Drag-and-drop theme design can be done with a few plugins, but it also requires some basic PHP skills.

g. Wix & Weebly

Wix and Weebly are similar. Wix has a strong drag-and-drop operation based on html5 technology that allows anyone who does not know the code or the basic language to build their business or personalized website. However, the Wix template support for the IE kernel isn't perfect.

h. Squarespace

Squarespace has a lot of templates for performance and background plug-in experience that favor small webmasters over their own small sites. However, the type of Squarespace template is relatively scarce and cannot meet the site needs of some users. Template personalization is not powerful enough.

B. Back-end

a. Java

Java is suitable for large and medium-size projects. It is known for its cross-platform feature, high safety and reliability. Java ecosystem is very mature (IDE, framework, etc.). But development using Java is complex and inefficient.

b. PHP

PHP can execute dynamic web pages more quickly than CGI or Perl. The biggest advantage of PHP is its low learning threshold. However, PHP is error-prone, inefficient, and missing global caching.

c. ASP.NET

ASP.NET has plenty of solutions for developing web applications. It is suitable for Windows platform with low maintenance costs. However its code logic is messy, difficult to manage, and the code is not reusable.

d. Python

Python is easy to learn, fast to develop, and efficient to do maintenance.[9] . However, slow execution, formatting mandatory, and error-prone are the disadvantages of Python.

e. Node.js

Node.js has asynchronous, event-driven, and extensible features. The Node.js application is developed by JavaScript, so it has all the benefits of JavaScript. Node.js is used in many large, high-traffic Websites. Also, developers can use it to develop fast mobile Web frameworks as well.

C. Database

a. Oracle

Oracle fully supports all industry standards and adopts a completely open strategy. Oracle database is a kind of large database system, which is generally used in large-scale business and government departments.

b. MySQL

MySQL works in client/server or embedded systems. MySQL server supports the use of a mission-critical, heavy-duty production system, which can also be embedded into a mass-deployed software. At present, due to its small size, fast speed, low ownership cost, and open source feature, many small and medium-sized websites choose MySQL as the website database in interest of less cost.

c. SQL Server

SQL Server can only run on Windows, in client/server structure. The parallel implementation and coexistence models are not mature enough to handle the increasing number of users and data volumes. The database have limited scalability too.

d. DB2

DB2 runs on all major platforms (including Windows). It enables multiple users or applications to query different database or even different DBMS data in the same SQL statement, and it is best suited for massive data. DB2 is widely used at the enterprise level and has a high share of time in large enterprises worldwide. Its operation is simple and can provide GUI and command line at the same time. It is

widely used in giant enterprises and has good downward compatibility with small risk.

e. Firebase

Firebase is a cloud platform (BaaS) that makes the back end as a service. Firebase is designed for developers to separate back ends and deploy them in the cloud. Most importantly, Firebase provides the ability to push real-time back-end data, which is used by many well-known vendors to develop real-time features and integrate them into their platforms. Using Firebase to develop applications can greatly reduce costs and product release time. [13]

The main result of a critical technology research is shown in the table below:

Name	Technology	Pros	Cons	Capability V1.1
Bootstrap	Front end framework	Widely used, rich plugins, mature	High study threshold, weak support for IE	User Interface development, addressing Risk 5 and Risk 11
jQuery UI & Mobile	Front end framework	compatible with jQuery, convenient and elegant	High study threshold	User Interface development, addressing Risk 5 and Risk 11
Angular.js	Front end framework	Open source, easy to use, two-way data binding	High study threshold	User Interface development, addressing Risk 5 and Risk 11
React.js	Front end framework	Decent for large-scale applications, simple, declarative	High study threshold, a little complex	User Interface development, addressing Risk 5 and Risk 11
Vue.js	Front end framework	New, smart, focusing on view layer, easy to integrate with third-party library and projects	High study threshold, not that mature	User Interface development, addressing Risk 5 and Risk 11

Wordpress	Website development service	Widely used, less coding, mature, good scalability, rich plugins	Requiring PHP skills	User Interface development, Database implementation, addressing Risk 6
Wix	Website development service	Mature, elegant, flexible, drag-and-drop, rich templates and applications	Limited scalability	User Interface development, Database implementation, addressing Risk 6
Weebly	Website development service	Drag-and-drop, rich templates	Not powerful enough	User Interface development, Database implementation, addressing Risk 6
Squarespace	Website development service	Rich details and elegant templates	Template personalization is not powerful enough.	User Interface development, Database implementation, addressing Risk 6
Java	Logical programming language	Powerful, mature, long history, integrated development support(IDE,etc.)	Inefficient in programming, less of flexibility	Backend logic development, addressing Risk 5 and Risk 11
PHP	Logical programming language	Innovation syntax, perfect with MySQL, widely used, low learning threshold, efficient	Not good enough in multi-thread programming and synchronization	Backend logic development, addressing Risk 5 and Risk 11

ASP.NET	Logical programming language	Cross-language, performing well on small and medium-sized projects, developed rapidly	Code logic is messy, difficult to manage, not reusable	Backend logic development, addressing Risk 5 and Risk 11
Python	Logical programming language	Easy to learn, fast to develop, concise in coding, easy to maintain, open source, portable, extensible	Slow, formatting mandatory, error-prone	Backend logic development, addressing Risk 5 and Risk 11
Node.js	Logical programming language	Asynchronous, event-driven, extensible, take all the advantages of javascript, friendly to mobile development	Single process, single thread, only support single core CPU, cannot fully utilize multi-core CPU server	Backend logic development, addressing Risk 5 and Risk 11
Oracle	Database	Most widely used, powerful with big data	Not easy to operate for small projects	Database development, addressing Risk 5 and Risk 11
MySQL	Database	Open-source, fast, reliable, easy-to-use, light weight	Complex and unstandard security systems	Database development, addressing Risk 5 and Risk 11
SQL Server	Database	Easy and secure access to data through the Web, powerful, flexible, web-based and secure application management	Can only run on Windows, undertake all the security, stability problems of Windows	Database development, addressing Risk 5 and Risk 11

DB2	Database	Powerful with massive data, very stable, widely used at the enterprise level	Not that popular in recent years, too large for small project	Database development, addressing Risk 5 and Risk 11
Firebase	Backend as a Service	Providing whole backend service, transparent to language, low study threshold	Limited scalability, immature in some functions	Database development, addressing Risk 5, Risk 6, Risk 7 and Risk 11

3.4.2 Applied Framework

One of the constraints of the project is that the team members lack website development skills. To put emphasis on project management and execution, the team prefers developing framework with low learning threshold. With careful analysis, Wix has been chosen to be the first choice of front end development. If there are any back-end functions that cannot be implemented by Wix, Firebase is a backup choice of back end development.

Due to the research, in less or none coding developing frameworks, Wordpress needs PHP skills to make full use of it. Since the team lacks PHP knowledge currently, Wordpress is not the best way for the team. As for Wix, Weebly and Squarespace, they all provide elegant templates for non-coding website development. Besides, they all support drag-and-drop intelligent construction for website. Compared to Weebly and Squarespace, Wix is more mature and provides lots of applications to integrate practical functions, such as membership system, with simple operation. In addition, Wix is more flexible than Weebly and Squarespace, there are more settings and options in Wix for developers to choose.

In case of some functions that are unable to be implemented just by using Wix and its plugins, Firebase is chosen as a backup plan for back end development. Firebase is a cloud platform providing all backend service such as database. Its aim is to make developers focus more on user interface. Since Firebase is transparent to language, there is no need for the team members to tackle unfamiliar technologies.[13]

In conclusion, the final choice is using Wix as the basic development tool and using Firebase as a backup tool for further development.

3.5 Project Planning

3.5.1 Work Breakdown Structure

The overall waterline is divided into Concept, Requirement, Design, Implementation and Acceptance Testing stages. The WBS is given as follow:

1. Concept
 - 1.1. Project Kickoff Meeting
 - 1.2. Stakeholder Analysis
 - 1.3. Concept Scope
 - 1.3.1. Requirement Elicitations
 - 1.3.2. Requirement Prototype
 - 1.3.3. Requirement Evaluation
 - 1.3.4. Scope Definition
 - 1.3.5. Scope Validation
 - 1.4. Preliminary Analysis
 - 1.4.1. Identify Constraints
 - 1.4.2. Identify Project Business Value
 - 1.5. Concept Framework
 - 1.5.1. Framework Research
 - 1.5.2. Prototype Integration
 - 1.6. Concept Development Model
 - 1.6.1. Identify Development Features
 - 1.6.2. Justify Delivery Model
 - 1.7. Responsibility Planning
 - 1.7.1. Identify Responsibility Requirements
 - 1.7.2. Responsibility Allocation
 - 1.8. Communication Planning
 - 1.8.1. Communication Matrix
 - 1.8.2. Communication Flow Chart
 - 1.8.3. Escalation Plan
 - 1.9. Risk Planning
 - 1.9.1. Identify Risk
 - 1.9.2. Risk Analysis
 - 1.9.3. Risk Register

Week 8 Milestone: PMP version 1

2. Requirement
 - 2.1. Identify Detailed Data Requirements
 - 2.1.1. Break down requirements
 - 2.1.2. Identify output requirements
 - 2.1.3. Identify input requirements
 - 2.1.4. Identify sources of input
 - 2.2. Create Software Requirements Specification (SRS)
 - 2.3. Recompute Cost Estimation using Function Points

Week 9 Milestone: SRS & FP Estimation

3. Design
 - 3.1. Design User System View
 - 3.1.1. Design interface logic

- 3.2. Design Database
 - 3.2.1. Define logical data relations
 - 3.2.2. Design data structure
 - 3.2.3. Validate database design
- 3.3. Design Interfaces
 - 3.3.1. Design Interface Framework
 - 3.3.2. Develop screen specifications
- 3.4. Define data and interface relations
- 3.5. Define Interaction Process
 - 3.5.1. Reconstruct processes to meet overall design
 - 3.5.2. Design Calling Sequences
 - 3.5.3. Create Interaction Diagram
- 3.6. Develop Preliminary Test Procedures
 - 3.6.1. Identify test requirements
 - 3.6.2. Create test checklist
- 3.7. Management Review
 - 3.7.1. Reevaluate Project Risk
 - 3.7.2. Document Project Status
 - 3.7.3. Reevaluate justification
 - 3.7.4. Review Management Plan
 - 3.7.5. Plan next phase

Non-teaching Week Milestone: Comprehensive Design Accomplishment

- 4. Implementation
 - 4.1. Define Program Modules
 - 4.2. Develop Modules
 - 4.3. Unit Tests
 - 4.4. System Integration
 - 4.5. Update Test Procedures
 - 4.5.1. Review Test Plans
 - 4.5.2. Update Test Plans
 - 4.6. Management Review
 - 4.6.1. Reevaluate Project Risk
 - 4.6.2. Document Project Status
 - 4.6.3. Reevaluate justification
 - 4.6.4. Review Management Plan
 - 4.6.5. Plan next phase

Week 10 Milestone: Functional software

- 5. Acceptance Testing
 - 5.1. Finalize Integrated System Testing Plan
 - 5.1.1. Develop user acceptance criteria
 - 5.1.2. Develop integration test plan
 - 5.1.3. Develop integration test data

- 5.2. Conduct integration test
- 5.3. Final Modification
- 5.4. Management Review
 - 5.4.1. Reevaluate Project Risk
 - 5.4.2. Document Project Status
 - 5.4.3. Reevaluate justification
 - 5.4.4. Review Management Plan
- 5.5. Archive Files/Documents

Week 11 Deliverable: Final Product

3.5.2 Dependency

The dependency tables are given in the justification of each stage and the Gantt chart view is given at the end of the section.

Concept

In this preliminary stage, the high-level project concepts and requirements were figured out including the stakeholder analysis, high-level scope definition, project constraints and business value. Upon the concepts, the team made framework and development process model decisions. Some first-version planning including responsibility allocation, communication plan and risk management plan are documented. The document outcome of this stage is this first version of Project Management Plan whose sections include the above information.

Requirement

In the stage, project requirements will be broken down into low-level features with specified inputs and outputs. Bases on the work, one System Requirement Specification(SRS) and Function Points cost estimation will be created by the end of Week 9.

Some primary task dependencies are figured:

- A. Detailed Requirements should be completed before the creation of SRS as the successor task is based on the outcome of predecessor task.
- B. Function Points estimation should be done after the accomplishment of SRS.

<i>Dependency ID</i>	<i>Predecessor (ID)</i>	<i>Successor (ID)</i>	<i>Dependency Type</i>	<i>Justification</i>
1	Identify Detailed Data Requirements	Create Software Requirements Specification	Finish-to-Start	The successor task is based on the outcome of

		(SRS)		predecessor task.
2	Create Software Requirements Specification (SRS)	Recompute Cost Estimation using Function Points	Finish-to-Start	Function Points estimation should be done after the accomplishment of SRS.

Design

In the stage, an executable software design will be accomplished. According to the previous stage outcome, the team will design the data structure, relation schema and user interface logic. After that, interface related instructions including the framework, specification of each interface and data-interface relationships will be designed. A comprehensive interaction model including the interaction diagram and calling sequence will be created upon the predecessor's designing outcomes. Additionally, a preliminary test procedure including the edge testing cases of each function will be finished in the stage. The team will update relative documentation to reflect latest project status. A well-executed stage should become solid basement of implementation. The final outcome of this stage is a recipe-like implementation guide which the team aims to finish by the end of non-teaching week.

Some primary task dependencies are figured:

- C. The actual interfaces design should follow the high-level user interface logic.
- D. The data-interface relationship design should follow both the database design and interface design as these are two key components in the relationship design.
- E. The Interaction model should happen after the finish of all of the predecessor procedures in the stage. The justification is that interaction model should know the exact relationships between objects and interfaces.
- F. Preliminary test design should follow the complete system design.

Dependency ID	Predecessor (ID)	Successor (ID)	Dependency Type	Justification
3	Design User System View	Design Interfaces	Finish-to-Start	Successors need the outcome of predecessors.

4	Design Interfaces	Define data and interface relations	Finish-to-Start	Predecessors are two key components in the relationship design.
5	Design Database	Define data and interface relations	Finish-to-Start	
6	Define data and interface relations	Define Interaction Process	Finish-to-Start	Successors need the outcome of predecessors.
7	Define Interaction Process	Develop Preliminary Test Procedures	Finish-to-Start	Preliminary test design should follow the complete system design.
8	Develop Preliminary Test Procedures	Management Review	Finish-to-Start	The conclusive review is held at the end of stage.

Implementation

According to the design outcomes, implementation procedures, modules and any reusable resources will be defined. Then the detailed implementation will be executed module by module, following unit tests. Finally, in the stage, the whole system will be integrated, and test approaches will be updated. The outcome of this stage is working software which can be accepted by clients with minor modification. The team plans to finish the stage by the end of Week 10.

Some primary task dependencies are figured:

- A. Detail development as well as module unit tests rely on the outcome of module definition procedure.
- B. Each module development should be followed by unit tests. Modules can be developed simultaneously by different team member pairs. But each member pairs should finish unit tests before moving to the next module.
- C. The whole system should be integrated after each modules developed successfully. With successful, we mean passing unit tests.
- D. Having the integrated system, the team can update the testing plans.

<i>Dependency ID</i>	<i>Predecessor (ID)</i>	<i>Successor (ID)</i>	<i>Dependency Type</i>	<i>Justification</i>
9	Define Program Modules	Develop Modules & Unit Test	Finish-to-Start	Detail development as well as module unit tests relies on the outcome of module definition procedure.
10	Develop Modules	Unit Tests	Finish-to-Start	Each module development should follow unit tests.
11	Develop Modules & Unit Test	System Integration	Finish-to-Start	The whole system should be integrated after each module developed successfully.
12	System Integration	Update Test Procedures	Finish-to-Start	Having the integrated system, the team can update the testing plans.
13	Update Test Procedures	Management Review	Finish-to-Start	The conclusive review is held at the end of stage.

Acceptance Testing

The first important task in the stage is designing the comprehensive acceptance testing plans based on the predecessor plans. Then the team will conduct the plan and make the final version of product. A conclusive review about the whole development process will be held after the accomplishment of deliverable product. Finally, the team will complete documentation works.

The aim of the stage is to deliver the final product which should meet all the clients' requirements and criteria. The team plans to finish the work by the end of Week 11.

Some primary task dependencies are figured:

- A. The conduction of integrated testing depends on the outcome of testing plan.
- B. According to the final testing result, the team will modify the product by the last version.
- C. The conclusive review and documentation work will be held after the accomplishment of final product.

<i>Dependency ID</i>	<i>Predecessor (ID)</i>	<i>Successor (ID)</i>	<i>Dependency Type</i>	<i>Justification</i>
14	Finalize Integrated System Testing Plan	Conduct integration test	Finish-to-Start	The conduction of integrated testing depends on the outcome of testing plan.
15	Conduct integration test	Final Modification	Finish-to-Start	According to the final testing result, the team will modify the product by the last version.
16	Final Modification	Management Review & Documentation	Finish-to-Start	The conclusive review and documentation work will be held after the accomplishment of final product.

3.5.3 Cost Estimation

V1.1 Update

The team made an estimate using Function Points which is attached in the Appendix D of this document. However, the result is not satisfying as the relevant theory is missing. After discussion, the team decides to keep the original estimation.

In the concept stage, the team applies Parkinson's Law to judge total efforts. The choice justifications are that the time frame is defined strictly in the specification and the requirements breakdown is not detailed enough to give a Function-Points based estimation. The estimation will be updated in the requirement stage using Function-Points.

The total given time is 4 weeks and the fixed team size is four. Assuming each team member will spend 25% of time on the project, and each day has 8 working hours. Then according to the Parkinson's law, the development effort will be expanded fully to fill the available time, which is $4 * 0.25 * 7 * 8 = 56 \text{ hours}$ per member. The total effort is 224 human hours. Then the total effort is divided into design, implementation and acceptance testing stages with more emphasis on design and implementation stages.

The planning outcome combining task breakdown, dependency and duration is addressed using Gantt chart as below.

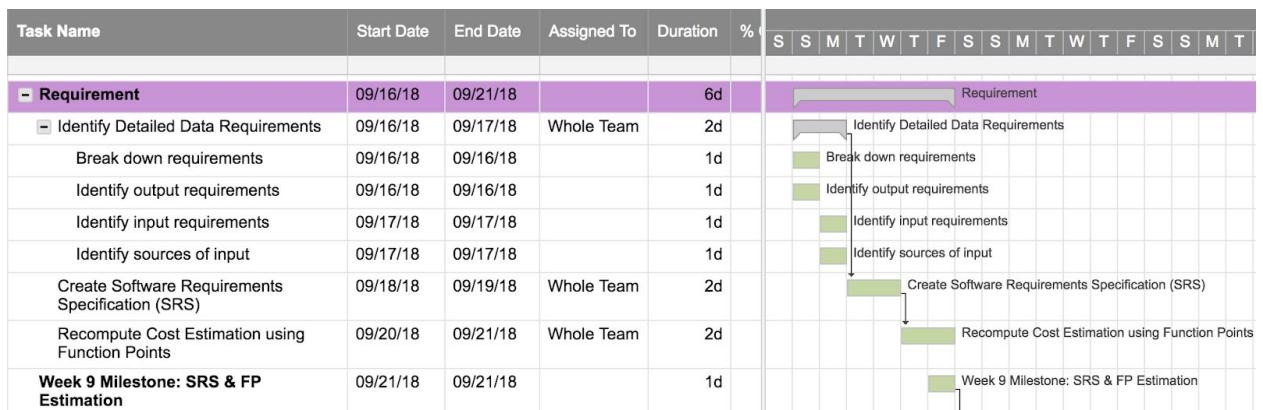
3.5.4 Timeline

The main project milestones are set as follow:

- F. Week 8: Accomplishment of Project Management Plan(this report) version 1
- G. Week 9: Accomplishment of System Requirement Specifications(SRS) and Function Points cost estimation
- H. Non-Teaching Week: Comprehensive Design Accomplishment
- I. Week 10: Functional Software
- J. Week 11: Final Product

Excluding the Concept stage whose work has already been finished and outcome are delivered in this plan, the timeline of each stage is graphed with Gantt chart:

A. Requirement Stage:



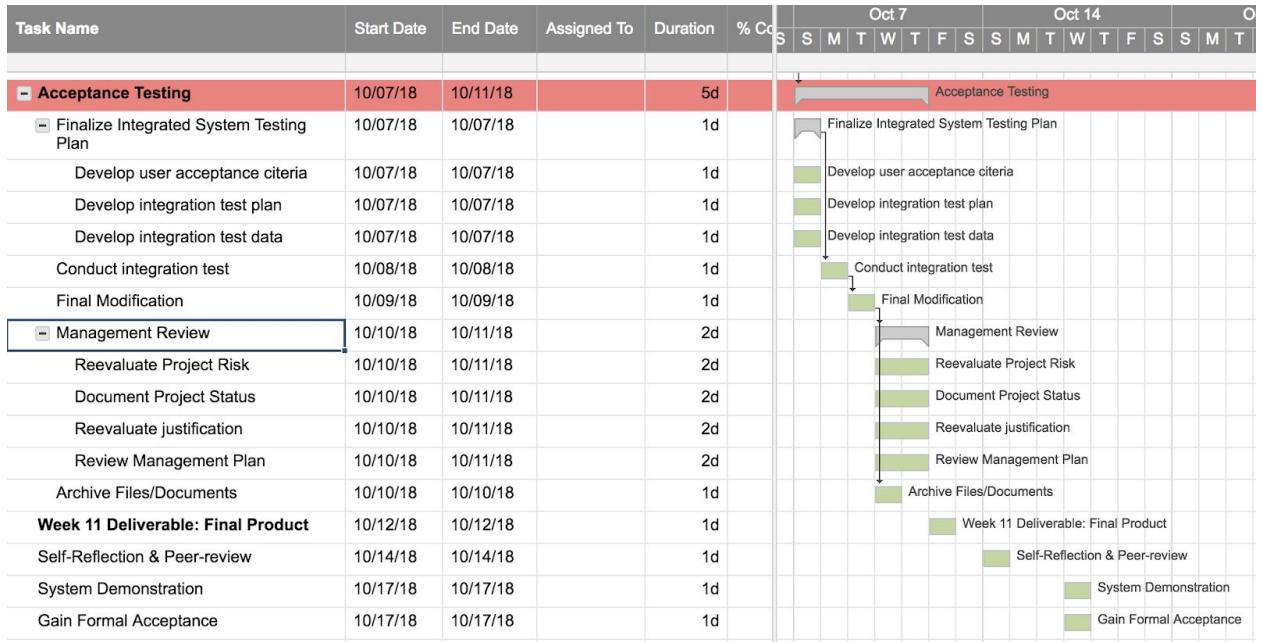
B. Design Stage:

Task Name	Start Date	End Date	Assigned To	Duration	% Complete	Sep 23	Sep 30														
						S	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
- Design	09/22/18	09/28/18		7d																	
+ Design User System View	09/22/18	09/22/18		1d																	
- Design Database	09/22/18	09/22/18		1d																	
Define logical data relations	09/22/18	09/22/18		1d																	
Design data structure	09/22/18	09/22/18		1d																	
Validate database design	09/22/18	09/22/18		1d																	
- Design Interfaces	09/23/18	09/23/18		1d																	
Design Interface Framework	09/23/18	09/23/18		1d																	
Develop screen specifications	09/23/18	09/23/18		1d																	
Define data and interface relations	09/24/18	09/24/18		1d																	
- Define Interaction Process	09/25/18	09/26/18		2d																	
Reconstruct processes to meet overall design	09/25/18	09/25/18		1d																	
Design Calling Sequences	09/25/18	09/25/18		1d																	
Create Interaction Diagram	09/25/18	09/26/18		2d																	
- Develop Preliminary Test Procedures	09/27/18	09/27/18		1d																	
Identify test requirements	09/27/18	09/27/18		1d																	
Create test checklist	09/27/18	09/27/18		1d																	
- Management Review	09/28/18	09/28/18		1d																	
Reevaluate Project Risk	09/28/18	09/28/18		1d																	
Document Project Status	09/28/18	09/28/18		1d																	
Reevaluate justification	09/28/18	09/28/18		1d																	
Review Management Plan	09/28/18	09/28/18		1d																	

C. Implementation Stage:

Task Name	Start Date	End Date	Assigned To	Duration	% Complete	Sep 30	Oct 7														
						S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
- Implementation	09/30/18	10/06/18		7d																	
Define Program Modules	09/30/18	09/30/18		1d																	
Develop Modules	10/01/18	10/03/18		3d																	
Unit Tests	10/01/18	10/03/18		3d																	
System Integration	10/04/18	10/04/18		1d																	
- Update Test Procedures	10/05/18	10/05/18		1d																	
Review Test Plans	10/05/18	10/05/18		1d																	
Update Test Plans	10/05/18	10/05/18		1d																	
- Management Review	10/06/18	10/06/18		1d																	
Reevaluate Project Risk	10/06/18	10/06/18		1d																	
Document Project Status	10/06/18	10/06/18		1d																	
Reevaluate justification	10/06/18	10/06/18		1d																	
Review Management Plan	10/06/18	10/06/18		1d																	
Plan next phase	10/06/18	10/06/18		1d																	
Week 10 Milestone: Functional software	10/06/18	10/06/18		1d																	

D. Acceptance Testing Stage:



4.0 PROJECT EXECUTION, MONITORING AND CONTROL

4.1 Project Status

Milestone

Up to the non-teaching week, the team has finished Requirement and Design stages tasks according to the schedule. The project status has reached setted milestone: **SRS & FP**

Estimation, and Comprehensive Design Accomplishment.

The main outcomes include detailed requirements breakdown and analysis which is presented in the System Requirement Specification(SRS), updated effort estimation and schedule using Function points approach, system design including relational database schema, interface class and interaction diagram, UX design principle analysis and preliminary testing cases.

Tracking and Monitoring

The team records detailed communication contents and evaluated project progress in each week's summary meeting. The product artefacts are the main sources for project progress evaluation. Any delay on schedule or artefacts would be highlighted so that the team can concentrate on solving the problems. Additionally, the team used earned value charts to have a whole picture of project process.

Difficulties

Several issues worth stakeholders knowing are addressed:

- A. The format and frequency of communication with internal IT staff is altered. Due to the project actual needs and geometric constraints, the team changed original communication approach with IT staff. The new approach combines both face-to-face meeting twice a week and online video meeting on other business days. The justification is that the team members find it inefficient to hold meetings everyday since the team needs to spend more time making documents and save time on transportation.
- B. Artefacts standard. The team find it hard to make well-standard artefacts such as SRS, UX design documents and sequencing diagram since the members lack the demanding professional skills and these standard documents are too time-consuming for the project. Instead, the team develops specialized form of these documents which address the most relevant components to the project.
- C. Project size estimation. Although the team made an detailed Function points analysis. The transition factor from function points data to KSLOC for front-end language such as JavaScript is vague in all software development literature. As a result, the estimation result is not realistic and the team decides to keep the original estimation. Still, the team gains precious experience practicing the technique.

Succession tasks

The team will starts the implementation work at the following week. The team plans to finish the work in one week meeting schedule. The milestone of next stage is a working software passing unit tests, which can be delivered as final products with only minor modification.

Until now, the schedule shows to be a reliable plan and the team decides to keep the schedule.

4.1.1 Project Related Artefacts

Project Communication

The team records agenda and minutes for each face-to-face meeting. Other informal online video meetings aren't recorded. The agenda is attached as the Appendix A of this document while the minutes is attached as the Appendix B of this document.

Time sheets for each members are attached as Appendix C of this document.

Project Effort Estimation

As planned, the team made a more dedicated project estimation using function points and COCOMO II approach. Due to the difficulty of estimating Wix project size, the estimation result is not satisfying.

The estimation details are attached in the Appendix D of this document.

Earned Value

- Planned Value

According to the planned project schedule, a total of seven weeks should be spent to complete it. Since there are four weeks spent upon PMP 1.1, we can derive the value of PV in percentage below.

$$PV = 4/7 = 57.14\%$$

- The Earned Value

52% of the work has been reported as completed.

$$EV = 52\%/100\% = 52\%$$

- Actual cost

Because we disregard the financial cost for this project, the only cost we estimated here is time. Hence, the actual cost is the actual cost of time. Upon PMP 1.1, four weeks have been spent.

$$AC = 4/7 = 57.14\%$$

- Schedule Variance

$$SV = EV - PV = 52\% - 57.14\% = (-5.14\%)$$

- Schedule Performance Index

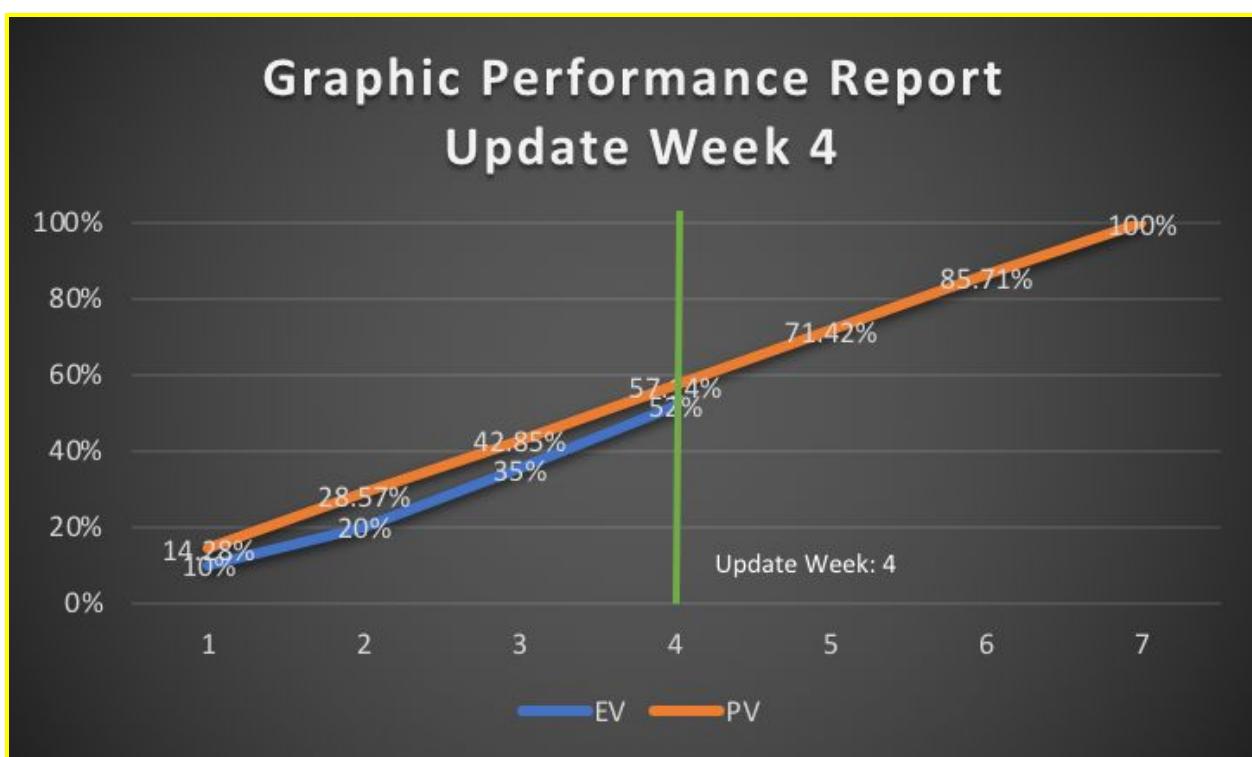
$$SPI = EV/PV = 52\%/57.14\% = 0.91$$

- Cost variance

$$CV = 0$$

- Cost Performance Index

$$CPI = EV/AC = 52\%/57.14\% = 0.91$$



Note: The above figure shows EV and PV lines with x-axis represents time in weeks, and y-axis represents percentage of work.

The performance report indicates that the progress is on time.

4.1.2 Product Related Artefacts

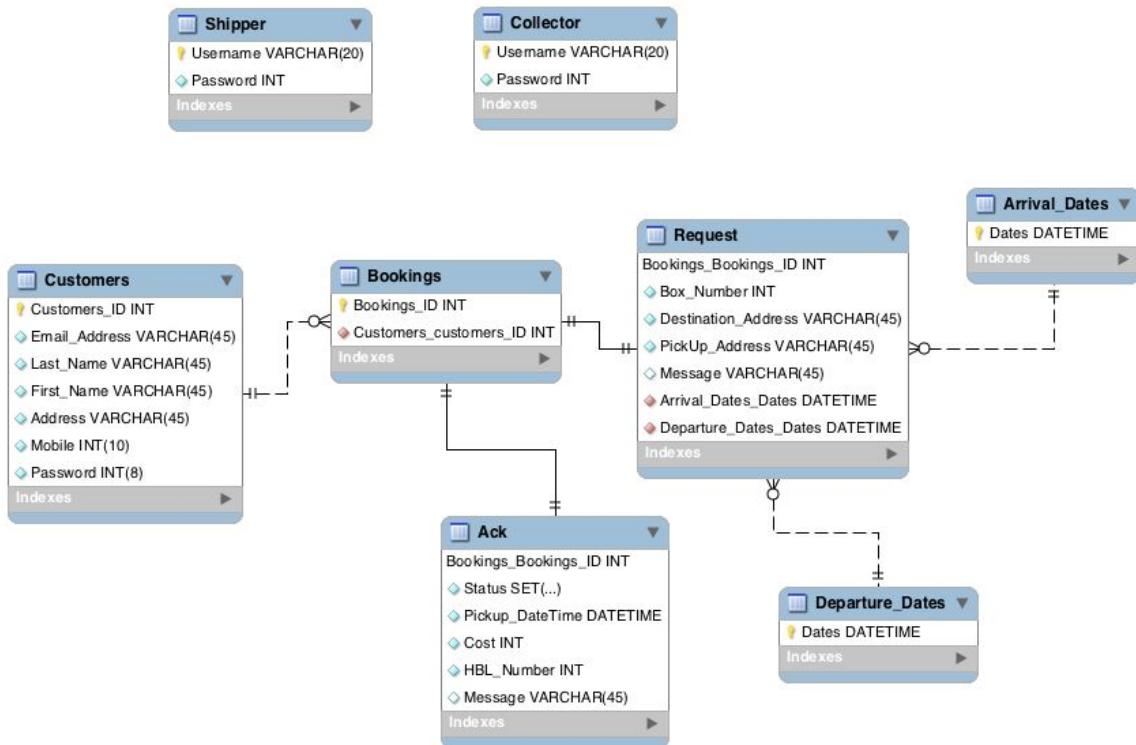
Requirement Stage Artefacts

The main artefacts of Requirement stage is System Requirement Specification (SRS) with task 2.1 - 2.2 outcomes included.

SRS consists of the requirements breakdown, use case diagram and function input & output identification, which is attached in the Appendix E of this document.

Design Stage Artefacts

- A. Task 3.2 Database design outcome is presented in the following ER diagram.



- B. Task 3.1 & 3.5 Interface interaction and logic is addressed in the Interface interaction diagram which is attached in the Appendix F of this document. The document is not a standard UML and Sequencing Diagram but gives clear indication of the interface relationships and interaction processes.

- C. Task 3.3 Interface UX design is addressed in the UX design and specification which is attached in the Appendix G of this document. The document consists of an UX design case study, the project UX design guidelines and the design snapshots. The document is not an professional UX design artefact but gives enough information for the project.
- D. Task 3.4 Define Data and Interface relations outcome is implicitly addressed in the Interface interaction diagram.
- E. Task 3.6 Developing Preliminary Test Procedures outcome is addressed in the Preliminary Test Cases which is attached in the Appendix H of this document. The document consists of multiple unit testing cases for the implementation stage uses. The cases are not comprehensive and will be furtherly extended in the later stage.
- F. Task 3.7 Management Review outcome is the 1.1 version of this document(PMP).

4.1.3 Risk Monitoring and Control

Realized Risk

At the requirement and design stage, the team mainly are affected by project risks. Particularly, the team asserts that the Risk ID 6 has occurred to some extent. The trigger event is that the team members find it hard to make the well-formed artefacts according to the plan.

Risk ID	Risk Type	Description	Exposure
6	Project	The schedule of the project plan may be hard to follow.	Medium

Justification: The team members find it hard to make standard documents such as SRS, sequencing diagram and UX design documents as these documents are too tedious to make and the team members lack the required professional knowledge to make them. The project manager fails to realize these document nature and team skills at the planning stage. The risk has medium exposure on the project process since the team needs to redefine the documents scope and learn new knowledges to some extent. However, the risk didn't result in any milestone delay of the project.

Risk Resolution

As the risk register states, the team shall use more precise cost estimation technique to mitigate the risk. The team follows the planned strategy and makes a more detailed empirical effort estimation which is planned no matter whether the risk occurs. However, the team find the primitive strategy is not comprehensive enough to mitigate the risk as the risk involves some professional knowledges besides effort estimation. The solution is that the team holds a deep

analysis of the standard documents content like SRS and sequencing diagram and redefines new scope of these documents. The freshly-defined scope documents can be considered as specialized version of these documents, having the necessary components for this particular project. By this strategy, the team succeeds to make the artefacts and keep the original schedule.

Risks Modifications

As the project processes, more new risks are identified and some old risks are modified on exposure.

Risk ID 11 is fresh risk while the others are modified risks.

Risk ID	Risk Type	Description	Probability	Impact	Exposure
11	Project	The applied framework may not be sufficient to achieve all requirements.	80%	3	2.4
Justification: Although Wix and Firebase are powerful website development solutions, some back-end requirements implementation may still need full-stack developing skills such as JavaScript. The probability is high and the impact is low as the hard coding lines amount is unlikely to be high.					
8	Product	The software may crash under some cases.	20%	3	0.6
Justification: Both the impact and probability are reduced as the Wix framework has supplied quite mature environment and the team has made sufficient testing cases to minimize the probability.					

Modified Risk Registry Items

Risk ID	Trigger	Owner	Response	Resources Required
11	Some requirements can't be achieved by Wix.	Technical expert	Mitigate (The team will make detailed requirement	Humans resource on learning javaScript skills.

			breakdown and evaluate the feasibility. The team will learn JavaScripts skill in advance to meet some inevitable cases.)	
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4.2 Project Status

Milestone

Up to the Week 10, the team has finished Implementation stage. The main outcome of this stage is a working software which has all in-scope features but has some minor deficiencies under some edge testing.

The team run all the preliminary tests on the first-version software and records the result, ensuring the software is functionally complete.

The set milestone **Functional software** was accomplished.

Tracking and Monitoring

The team records detailed communication contents and evaluated project progress in each week's summary meeting. The product artefacts are the main sources for project progress evaluation. Any delay on schedule or artefacts would be highlighted so that the team can concentrate on solving the problems. Additionally, the team used earned value charts to have a whole picture of project process.

Succession tasks

The team plans to finish the final acceptance testing stage at Week 11. The product will be modified to pass all designed tests. After Week 11, the team will deliver the final product. Until now, the schedule shows to be a reliable plan and the team decides to keep the schedule.

4.2.1 Project Related Artefacts

Project Communication

The team records agenda and minutes for each face-to-face meeting. Other informal online video meetings aren't recorded. The agenda is attached in the updated Appendix A of this document while the minutes is attached in the updated Appendix B of this document.

Time sheets for each members are attached in the updated Appendix C of this document.

Earned Value

Note: Similar to the illustration in 4.1.1, the following figures are updated in PMP 1.2.

- Planned Value

According to the planned project schedule, a total of seven weeks should be spent to complete it. Since there are five weeks spent upon PMP 1.2, we can derive the value of PV in percentage below.

$$PV = 5/7 = 71.43\%$$

- The Earned Value

75% of the work has been reported as completed.

$$EV = 75\%/100\% = 75\%$$

- Actual cost

Because we disregard the financial cost for this project, the only cost we estimated here is time. Hence, the actual cost is the actual cost of time. Upon PMP 1.2, five weeks have been spent.

$$AC = 5/7 = 71.43\%$$

- Schedule Variance

$$SV = EV - PV = 75\% - 71.43\% = 3.57\%$$

- Schedule Performance Index

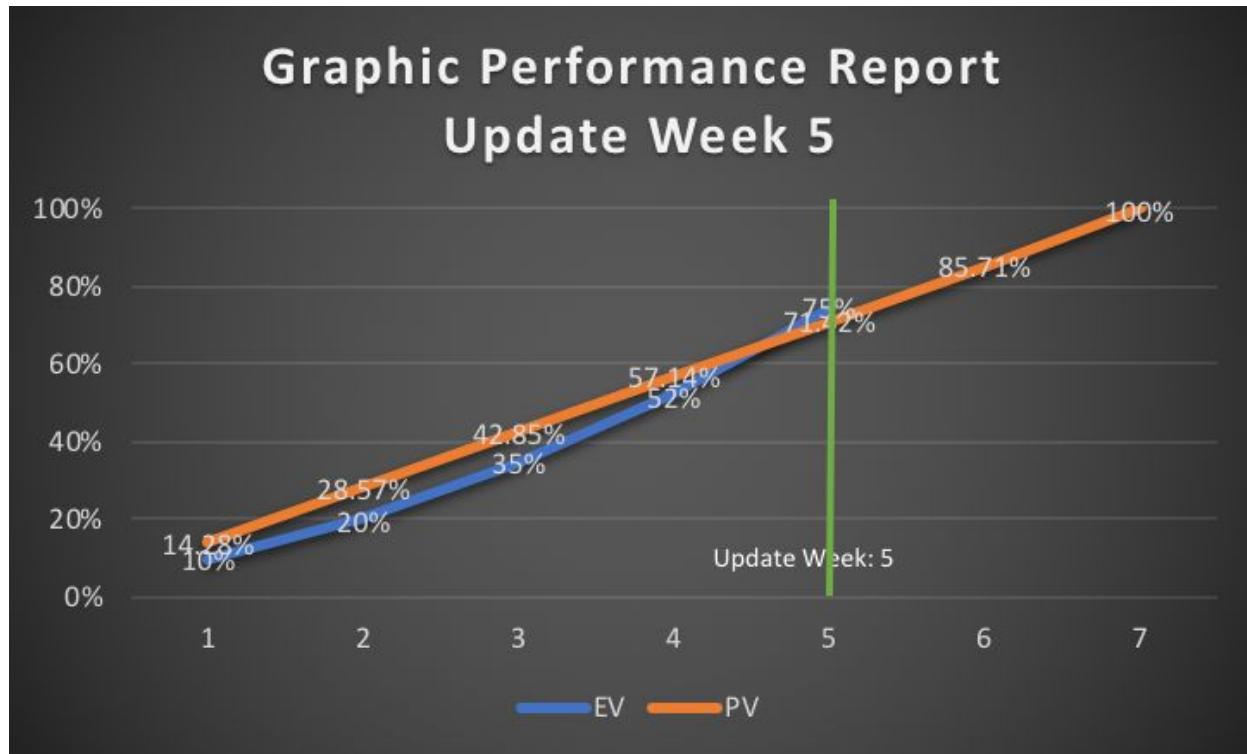
$$SPI = EV/PV = 75\%/71.43\% = 1.05$$

- Cost variance

$$CV = 0$$

- Cost Performance Index

$$CPI = EV/AC = 75\%/71.43\% = 1.05$$



4.2.2 Product Related Artefacts

Unit Testing

The team conducted preliminary unit tests for each software component. The testing results are attached in the the updated Appendix H of this document.

Working Software

The team made website screenshots showing the execution of working website. The screenshots are attached as the Appendix I of this document. The video is attached in the other artefacts link.

4.2.3 Risk Monitoring and Control

Risks Modifications

The following risk effect was adjusted.

9	Product	Design logics may conflict with actual implementation.	10%	2	0.2
Justification: At the implementation stage, the team find the design outcomes are quite reliable to follow. The procedure is quite smooth with only minor conflicts met. Thus, the team reduced both the impact and probability of the risk.					

The following fresh risk is figured out and identified as happening.

12	Product	The applied framework may has some internal API deficiencies and leads to unexpected outcomes under some cases.	60%	3	1.8
Justification: The main applied framework Wix may has some heuristic internal constraints or bad documentation. These internal deficiencies may leads to some inconvenience and minor problems in actual uses. However the overall performance of Wix is accepted by the industry. Thus the risk has limited exposure.					

Realized Risk & Resolution

The fresh risk 12 has happened as the team find that some Wix page didn't work properly even though the operations and implementations seems to be correct. Particularly, the team find that some information can not be used for registration where the entered information are complete and have no special characters. After some trial and research, the team find that Wix registration page only accepts password longer than 4 characters. However, no error message and documentation was given to address the setting. The users including the developing team itself may get confused by the internal deficiency. To resolve and mitigate the risk, the team makes sufficient trials and address the findings with proper indication message to users.

Modified Risk Registry Items

Risk ID	Trigger	Owner	Response	Resources Required
12	The wix page doesn't work as expected while the implementation seems to be correct.	Technical expert	Mitigate (The team will make sufficient trial on the pages and give proper information to users given on the trial result.)	Humans resource on searching the Wix documentation and related FAQ and trialing the page errors.

4.3 Project Status

Milestone

Up to the Week 11, the team has finished User Acceptance Testing stage. The main outcome of this stage is the final product which has passed all the User Acceptance Testing cases. All the development files are archived.

The set milestone **Final Product** was accomplished.

Until now, all set milestones have been reached as planned and the project will be closed.

Tracking and Monitoring

The team records detailed communication contents and evaluated project progress in each week's summary meeting. The product artefacts are the main sources for project progress evaluation. Any delay on schedule or artefacts would be highlighted so that the team can concentrate on solving the problems. Additionally, the team used earned value charts to have a whole picture of project process.

Succession tasks

The team will prepare and make a final product demo to the client and teaching team in Week 12.

4.3.1 Process Related Artefacts

Project Communication

The team records agenda and minutes for each face-to-face meeting. Other informal online video meetings aren't recorded. The agenda is attached in the updated Appendix A of this document while the minutes is attached in the updated Appendix B of this document.

Time sheets for each members are attached in the updated Appendix C of this document.

Earned Value

Note: Similar to the illustration in 4.1.1, the following figures are updated in PMP 1.3.

- Planned Value

According to the planned project schedule, a total of seven weeks should be spent to complete it. Since there are six weeks spent upon PMP 1.3, we can derive the value of PV in percentage below.

$$PV = 6/7 = 85.71\%$$

- The Earned Value

95% of the work has been reported as completed.

5% of the work left is the preparation for the presentation, which will be completed in week 7.

$$EV = 95\% / 100\% = 95\%$$

- Actual cost

Because we disregard the financial cost for this project, the only cost we estimated here is time. Hence, the actual cost is the actual cost of time. Upon PMP 1.3, six weeks have been spent.

$$AC = 6/7 = 85.71\%$$

- Schedule Variance

$$SV = EV - PV = 95\% - 85.71\% = 9.29\%$$

- Schedule Performance Index

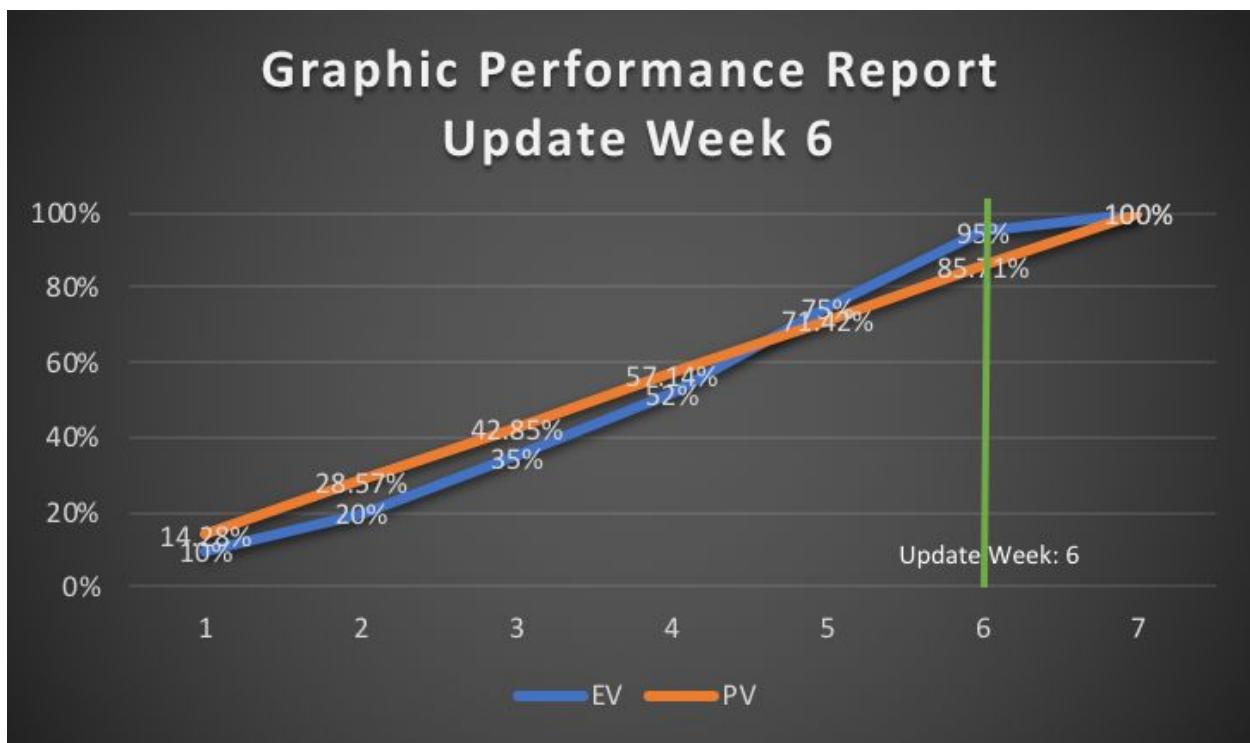
$$SPI = EV/PV = 95\% / 85.71\% = 1.11$$

- Cost variance

$$CV = 0$$

- Cost Performance Index

$$CPI = EV/AC = 95\% / 85.71\% = 1.11$$



4.3.2 Product Related Artefacts

User Acceptance Testing

The team conducted user acceptance testing of the project. The testing design, result and acceptance criteria are attached as the Appendix J of this document.

4.3.3 Risk Monitoring and Control

Risk Summary

As the project is going to be finished, the team made an risk review to summarize the risks status happening during the development. In week 11, the team also suffers the risk ID 6 that the project plan may be hard to follow to some extent. The main issue is that the team find it hard to make a well formed user acceptance testing documentation as the file is too huge and requires professional skills. As in Week 9, the team did detailed research and made a special version containing all necessary components for the small-scale project. As for other risks, after dedicated testing, the team is confident that risk ID 8 and 12 which says the product may crash or meet unexpected situations under some cases are unlikely to happen. Risk ID 11 has been mitigated properly by combining JavaScript tools. Overall, the risks had limited impact on the whole development process.

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Appendix A: Team GiveMeFive Agenda

V1.3 Update

The document records the agendas of meetings occurring from Week 9 to Week 11.

A. Date: 17/09/2018

Attendees: Whole team

Place: Law school

Theme: Requirement Specification & Estimation

Planned length: 3 hours

<i>Topics</i>	<i>Repsensor</i>
1. Requirement Evaluation	Senior users
2. Requirement Breakdown	IT staff
3. Use Diagram	IT staff
4. Requirement input and output identification	IT staff
5. Function Points Elicitations	Whole team
6. Task Assignment	Whole team

B. Date: 20/09/2018

Attendees: Whole team

Place: Law school

Theme: Requirement Specification & Estimation II

Planned length: 3 hours

<i>Topics</i>	<i>Repsensor</i>
1. Progress Review	Whole team
2. Cost Estimation	Whole team
3. SRS	IT staff
4. Schedule Update	Whole team
5. Risk Review	Risk Analyst
6. Task Assignment	Whole team

C. Date: 24/09/2018

Attendees: Whole team

Place: RMIT library

Theme: Design

Planned length: 3 hours

<i>Topics</i>	<i>Reponsor</i>
1. Progress Review	Whole Team
2. Relational Data Table	IT staff
3. Interface Logic and Interaction	IT staff
4. UX design	IT staff
5. Task Assignment	Whole team

D. Date: 26/09/2018

Attendees: Whole team

Place: Law school

Theme: Testing and Summary

Planned length: 3 hours

<i>Topics</i>	<i>Reponsor</i>
1. Progress Review	Whole Team
2. Preliminary Testing Procedure	IT staff
3. Risk Review	Risk Analyst
4. Management Review	Whole team
5. Task Assignment	Whole team

E. Date: 01/10/2018
 Attendees: Whole team
 Place: Law school
 Theme: Implementation
 Planned length: 2 hours

<i>Topics</i>	<i>Repsonsor</i>
1. Progress Review	Project Manager
2. Define Implementation Modules	IT staff
3. Function Requirement Discussion	IT staff
4. Task Assignment	Project Manager

F. Date: 04/10/2018
 Attendees: Whole team
 Place: Law school
 Theme: Testing & Management Review
 Planned length: 3 hours

<i>Topics</i>	<i>Repsonsor</i>
1. Progress Review	Project Manager
2. Unit Testing Result	IT staff
3. System Integration	IT staff
4. Update Test Procedures	IT staff
5. Management Review	Project Manager
6. Task Assignment	Project Manager

G. Date: 07/10/2018

Attendees: Whole team

Place: Law school

Theme: Acceptance Testing

Planned length: 3 hours

<i>Topics</i>	<i>Principal</i>
1. Progress Review	Project Manager
2. Define the Scope of Testing Acceptance	IT staff
3. Define testing acceptance criteria	IT staff
4. Design Form-Based Testing	IT staff
6. Design Functional Testing	IT staff
7. Task Assignment	Project Manager

H. Date: 9/10/2018

Attendees: Whole team

Place: Law school

Theme: Final Modification & Management Review

Planned length: 2 hours

<i>Topics</i>	<i>Repsensor</i>
1. Progress Review	Project Manager
2. Final Modification	IT staff
3. Discuss the Presentation	Whole Team
4. Management Review	Project Manager
5. Task Assignment	Project Manager

Appendix B: Team GiveMeFive Meeting Minutes

V1.3 Update

The document records the minutes of meetings occurring from Week 9 to Week 11.

Meeting 1

Meeting of: GiveMeFive

Held at: Law School

Date: Sep 17th, 2018

From: 2pm - 6pm

Opening:

The regular meeting of the GiveMeFive was opened at 2pm on Sep 17th, 2018 in Law School by Project Manager.

Present:

Xinjie Lan (910030); Chen Xu (945756); Runsheng Zhao (941554); Shenglan Yu (808600)

Approval of agenda:

The agenda was unanimously approved as distributed.

Approval of minutes

The minutes of the previous meeting were unanimously approved as distributed.

<i>Project Plan: Week 9, Date 17/09/18</i>					
<i>Task</i>	<i>Resources/ Attendees</i>	<i>Estimated Time</i>	<i>Actual Time</i>	<i>Completed</i>	<i>Comment</i>
Requirement Evaluation	Senior users	30 min	15 min	Yes	Takes less time as the original work is clear.
Requirement Breakdown	IT staff	1 h	1.5 h	Yes	Takes longer time. Need further documentation (Assigned to whole team).
Use Diagram	IT staff	1 h	30 min	Yes	Clear after the requirement broken down. Need further

					documentation (Assigned to Christina).
Requirement input and output identification	IT staff	30 min	30 min	Yes	Need further documentation (Assigned to Xinjie).
Function Points Elicitations	Whole team	1 h	1 h	Yes	The majority of the work are identified . The actual documentation is assigned to whole team. Project manager will make the final document
Task Assignment	Whole team	15 min	15 min	Yes	Remaining work assigned evenly.

Next meeting

The next general meeting will be at 4pm on Sep 20th, 2018 at Law School.

Minutes submitted by: Chen Xu
 Approved by: Shenglan Yu

Meeting 2

Meeting of: GiveMeFive

Held at: Law School

Date: Sep 20th, 2018

From: 10am - 2pm

Opening:

The regular meeting of the GiveMeFive was opened at 10am on Sep 20th, 2018 in Law School by Shenglan Yu.

Present:

Xinjie Lan (910030); Chen Xu (945756); Runsheng Zhao (941554); Shenglan Yu (808600)

Approval of agenda:

The agenda was unanimously approved as distributed.

Approval of minutes

The minutes of the previous meeting were unanimously approved as distributed.

Project Plan: Week 9, Date 20/09/18					
<i>Task</i>	<i>Resources/Attendees</i>	<i>Estimated Time</i>	<i>Actual Time</i>	<i>Completed</i>	<i>Comment</i>
Progress Review	Whole team	30 min	30 min	Partially Yes	Function Points work not completed yet
Cost Estimation	Whole team	1h	1h	Partially Yes	Principle agreed. Documentation after Function points finished.
SRS	IT staff	30 min	60 min	Yes	Integrating the documentation. Need to reduce the document scope.
Schedule Update	Whole team	30 min	15 min	No	Wait for function points outcome.

Risk Review	Risk Analyst	30 min	30 min	Yes	Identified schedule risk occurring.
Task Assignment	Whole team	15 min	15 min	Yes	Remaining work assigned evenly.

Next meeting

The next general meeting will be at 10am on Sep 24th, 2018 at RMIT library.

Minutes submitted by: Chen Xu

Approved by: Shenglan Yu

Meeting 3

Meeting of: GiveMeFive
Held at: RMIT library
Date: Sep 24th, 2018
From: 10am - 2pm

Opening:

The regular meeting of the GiveMeFive was opened at 10am on Sep 24th, 2018 in RMIT library by Shenglan Yu.

Present:

Xinjie Lan (910030); Chen Xu (945756); Runsheng Zhao (941554); Shenglan Yu (808600)

Approval of agenda:

The agenda was unanimously approved as distributed.

Approval of minutes

The minutes of the previous meeting were unanimously approved as distributed.

Project Plan: Non-teaching Week, Date 24/09/18					
Task	Resources/ Attendees	Estimated Time	Actual Time	Completed	Comment
Progress Review	Whole Team	30 min	1 h	Yes	Takes longer time. Complete the cost estimation task remained in the last meeting. The estimation result is not satisfying. All other tasks finished as planned.
Relational Data Table	IT staff	30 min	30 min	Yes	Finish as planned.
Interface Logic and Interaction	IT staff	1 h	1.5 h	Yes	Takes longer time. Find it hard to draw standard diagrams. Finish the

					specialised version of diagram. Need bit modification.
UX design	IT staff	30 min	30 min	No	Find it hard to process. Lack knowledge. Assign research homework.
Task Assignment	Whole team	15 min	15 min	Yes	Remaining work assigned evenly.

Next meeting

The next general meeting will be at 12pm on Sep 26th, 2018 at Law School.

Minutes submitted by: Chen Xu

Approved by: Shenglan Yu

Meeting 4

Meeting of: GiveMeFive

Held at: Law School

Date: Sep 26th, 2018

From: 12pm - 2pm

Opening:

The regular meeting of the GiveMeFive was opened at 12pm on Sep 20th, 2018 in Law School by Shenglan Yu.

Present:

Xinjie Lan (910030); Chen Xu (945756); Runsheng Zhao (941554); Shenglan Yu (808600)

Approval of agenda:

The agenda was unanimously approved as distributed.

Approval of minutes

The minutes of the previous meeting were unanimously approved as distributed.

Project Plan: Non-teaching Week, Date 26/09/2018					
<i>Task</i>	<i>Resources/Attendees</i>	<i>Estimated Time</i>	<i>Actual Time</i>	<i>Completed</i>	<i>Comment</i>
Progress Review	Whole Team	30 min	1 h	Yes	Define the UX design principle and assign the documentation work to Shenglan. Other tasks on time.
Preliminary Testing Procedure	IT staff	1 h	1 h	Yes	Define unit testing case as planned. Assign Xinjie to make documentation.

Risk Review	Risk Analyst	30 min	30 min	Yes	More fresh risks identified. And risk modification.
Management Review	Whole team	30 min	1 h	Yes	Update the PMP according to feedback.
Task Assignment	Whole team	15 min	15 min	Yes	Remaining work assigned evenly.

Next meeting

The next general meeting will be at 10am on Oct 1st, 2018 at Law.

Minutes submitted by: Shenglan Yu

Approved by: Shenglan Yu

Meeting 5

The document records the minutes of meeting occurring in Week 10.

Meeting of: GiveMeFive
Held at: Law School
Date: Oct 1st, 2018
From: 2pm - 4pm

Opening:

The regular meeting of the GiveMeFive was opened at 2pm on Oct 1st, 2018 in Law School by Project Manager.

Present:

Xinjie Lan (910030); Chen Xu (945756); Runsheng Zhao (941554); Shenglan Yu (808600)

Approval of agenda:

The agenda was unanimously approved as distributed.

Approval of minutes

The minutes of the previous meeting were unanimously approved as distributed.

Project Plan: Week 10, Date 06/10/18					
Task	Resources/ Attendees	Estimated Time	Actual Time	Completed	Comment
Progress Review	Project Manager	30 min	30 min	Yes	Completed as plan. Review all preceding design materials and plan implementation.
Define Implementation Modules	IT staff	30 min	30 min	Yes	Completed as plan. Define the subgroups of project for task split.
Function Requirement Discussion	IT staff	30 min	30 min	Yes	Completed as plan. Review design material, review

					testing cases and discuss some challenging parts.
Task Assignment	Project Manager	30 min	30 min	Yes	Assign implementation tasks among IT staffs.

Next meeting

Video online meeting held everyday to supervise execution.

The next general meeting will be at 1pm on Oct 4th, 2018 at Law School.

Minutes submitted by: Chen Xu

Approved by: Shenglan Yu

Meeting 6

Meeting of: GiveMeFive

Held at: Law School

Date: Oct 4th, 2018

From: 1pm - 4pm

Opening:

The regular meeting of the GiveMeFive was opened at 1pm on Oct 4th, 2018 in Law School by Shenglan Yu.

Present:

Xinjie Lan (910030); Chen Xu (945756); Runsheng Zhao (941554); Shenglan Yu (808600)

Approval of agenda:

The agenda was unanimously approved as distributed.

Approval of minutes

The minutes of the previous meeting were unanimously approved as distributed.

<i>Project Plan: Week 10, Date 06/10/18</i>					
<i>Task</i>	<i>Resources/Attendees</i>	<i>Estimated Time</i>	<i>Actual Time</i>	<i>Completed</i>	<i>Comment</i>
Progress Review	Project Manager	30 min	30 min	Yes	Task completed as plan. All individual functions and interfaces implemented.
Unit Testing Result	IT staff	1h	30 min	Yes	Takes less time. Passed all preliminary testing cases.
System Integration	IT staff	1h	30 min	Yes	Takes less time. Wix framework provides easy integration tool.

Update Test Procedures	IT staff	30 min	30 min	Yes	Inspire more testing cases and test the integrated system.
Management Review	Project Manager	30 min	30 min	Yes	Risk and management review.
Task Assignment	Project Manager	15 min	15 min	Yes	Assign team members documentation jobs.

Next meeting

The next general meeting will be at 1pm on Oct 7th, 2018 at Law library.

Minutes submitted by: Chen Xu

Approved by: Shenglan Yu

Meeting 7

Meeting of: GiveMeFive

Held at: Law School

Date: Oct 7th, 2018

From: 2pm - 5pm

Opening:

The regular meeting of the GiveMeFive was opened at 2 pm on Oct 7th, 2018 in Law School by Project Manager.

Present:

Xinjie Lan (910030); Chen Xu (945756); Runsheng Zhao (941554); Shenglan Yu (808600)

Approval of agenda:

The agenda was unanimously approved as distributed.

Approval of minutes

The minutes of the previous meeting were unanimously approved as distributed.

<i>Project Plan: Week 11, Date 13/10/18</i>					
<i>Task</i>	<i>Resources/Attendees</i>	<i>Estimated Time</i>	<i>Actual Time</i>	<i>Completed</i>	<i>Comment</i>
Progress Review	Project Manager	30 min	30 min	Yes	Completed as plan. Review all preceding design materials and plan implementation.
Define the Scope of Testing Acceptance	IT staff	30 min	15 min	Yes	Takes less time. Review testing basis. Define the acceptance testing cases.
Define acceptance criteria	IT staff	30 min	30 min	Yes	Complete as plan. Define overall testing scenarios.
Form-Based Testing	IT staff	1 hour	1 hour	Yes	Completed as plan.

					Form filling working as designed
Functional Testing	IT staff	1 hour	1 hour	Yes	Completed as plan. Functions for different security level working as designed
Task Assignment	Project Manager	30 min	30 min	Yes	Remaining work assigned evenly.

Next meeting

Video online meeting held every day to supervise execution.

The next general meeting will be at 1 pm on Oct 9th, 2018 at Law School.

Minutes submitted by: Xinjie Lan

Approved by: Shenglan Yu

Meeting 8

Meeting of: GiveMeFive
Held at: Law School
Date: Oct 9th, 2018
From: 1pm - 3pm

Opening:

The regular meeting of the GiveMeFive was opened at 1 pm on Oct 9th, 2018 in Law School by Shenglan Yu.

Present:

Xinjie Lan (910030); Chen Xu (945756); Runsheng Zhao (941554); Shenglan Yu (808600)

Approval of agenda:

The agenda was unanimously approved as distributed.

Approval of minutes

The minutes of the previous meeting were unanimously approved as distributed.

Project Plan: Week 11, Date 13/10/18					
Task	Resources/ Attendees	Estimated Time	Actual Time	Completed	Comment
Progress Review	Project Manager	15 min	15 min	Yes	Completed as plan. Review all preceding design materials and plan implementation.
Final Modification	IT staff	1 hour	30 min	Yes	Takes less time. The whole product working as expected
Discuss the Presentation	Whole Team	30 min	30 min	Yes	Completed as plan. Presentation content discussed
Management Review	Project Manager	30 min	30 min	Yes	Completed as plan.

					Update the PMP.
Task Assignment	Project Manager	15 min	15 min	Yes	Remaining work assigned evenly.

Minutes submitted by: Xinjie Lan

Approved by: Shenglan Yu

Appendix C: Timesheet

V1.3 Update

The document records the timesheets of each members from Week 9 to Week 11.

Timesheet - Chen Xu

Member Name: Chen(Christina) Xu

Team name: GiveMeFive

Tutor: Mr Doc Wallace

Date: 13.10.2018

Date	Activity	Planned	Actual
Saturday 14 Sep	Research on Functional Points	2 hours	2 hours
Monday 17 Sep	Meeting	3 hours	3.75 hours
Monday 17 Sep	Edit Meeting_Minutes for meetings	0.5 hour	0.5 hour
Wednesday 19 Sep	Write Functional Points	2 hours	2 hours
Thursday 20 Sep	Meeting	3 hours	3.5 hours
Thursday 20 Sep	Edit Meeting_Minutes for meetings	0.5 hour	0.5 hour
Friday 21 Sep	Wix Create Pages: Home, Login,Registration Page	2 hours	2 hours
Monday 24 Sep	Meeting	3 hours	3.75 hours
Monday 24 Sep	Edit Meeting_Minutes for meetings	0.5 hour	0.5 hour
Monday 24 Sep	Wix Create Shipper and Collector interfaces	3 hours	3 hours
Monday 24 Sep	Revise Wix Design	2 hours	2 hours
Tuesday 25 Sep	Research and Draw Use Case	4 hours	4 hours
Wednesday 26 Sep	Meeting	3 hours	3.75 hours
Wednesday 26 Sep	Edit Meeting_Minutes for meetings	0.5 hour	0.5 hour
Wednesday 26 Sep	Revise Use Case	0.5 hour	0.5 hour
Wednesday 26 Sep	Record Timesheet	1 hour	1 hour
Friday 18 Sep	Edit PMP 1.1 based on feedback from the first submission	2 hours	2 hours
Saturday 29 Sep	Final edit of PMP 1.1	3 hours	3 hours
Monday 1 Oct	Meeting	2 hours	2 hours
Monday 1 Oct	Integrated landscaping pages	3 hours	3 hours
Tuesday 2 Oct	Create login page for Shipper and Collector	1 hour	1 hour
Wednesday 3 Oct	Update PMP and new Appendix	1 hour	1 hour
Thursday 4 Oct	Meeting	3 hours	3 hours
Friday 5 Oct	Revise PMP	2 hour	2.5 hour

Friday 5 Oct	Update Earned Values in PMP	1 hour	1 hour
Saturday 6 Oct	Record Timesheet	0.5 hour	0.5 hour
Saturday 6 Oct	Sort Appendix	1 hour	1.5 hour
Sunday 7 Oct	Meeting	3 hours	3 hours
Monday 8 Oct	Form-Based Testing Script	3 hours	3 hours
Tuesday 9 Oct	Meeting	2 hours	2 hours
Tuesday 9 Oct	Record Meeting Agenda	0.5 hour	0.5 hour
Thursday 11 Oct	Update Earned Value for PMP 1.3	0.5 hour	0.5 hour
Friday 12 Oct	Update Appendix	2 hours	2 hours
Saturday 13 Oct	Polish PMP 1.3	1 hour	1 hour
Saturday 13 Oct	Record Timesheet	0.5 hour	0.5 hour

Timesheet - Runsheng Zhao

Member Name: Runsheng Zhao

Team name: GiveMeFive

Tutor: Mr Doc Wallace

Date: 13.10.2018

Date	Activity	Planned	Actual
Monday 17 Sep	Meeting	3 hours	3.75 hours
Tuesday 18 Sep	Research on Wix	2 hours	2 hours
Wednesday 19 Sep	Learn to develop website by Wix	2 hours	3 hours
Thursday 20 Sep	Meeting	3 hours	3.5 hours
Friday 21 Sep	Research database of Wix	2 hours	3 hours
Saturday 22 Sep	Learn basic javascript and Wix Code	2 hours	4 hours
Sunday 23 Sep	Revise database design and backend design	2 hours	2 hours
Monday 24 Sep	Meeting	3 hours	3.75 hours
Monday 24 Sep	Wix database design: Users, Bookings	1 hour	2 hours
Tuesday 25 Sep	Wix database design: ACKs, Requests	2 hours	2 hours
Wednesday 26 Sep	Meeting	3 hours	3.75 hours
Wednesday 26 Sep	Wix backend design: Login, Register, Account	2 hours	2 hours
Wednesday 26 Sep	Wix backend design: Booking(new, history)	2 hours	2 hours
Thursday 27 Sep	Wix backend design: Date recommendation	1 hour	1.5 hours
Thursday 27 Sep	Wix research: Sending email to users	1 hours	2 hours
Friday 28 Sep	Record Timesheet	1 hour	1 hour
Friday 28 Sep	Edit PMP 1.1	2 hours	2.5 hours
Sunday 30 Sep	Implement Database	1 hour	2 hours
Sunday 30 Sep	Implement Update Account function	1 hour	1 hour
Monday 1 Oct	Meeting	2 hours	2 hours
Monday 1 Oct	Implement New Booking function	1 hour	1.5 hours
Monday 1 Oct	Implement Booking History function	0.5 hour	0.5 hour
Monday 1 Oct	Implement Collector Checking Orders	1 hour	1 hour
Tuesday 2 Oct	Implement Shipper Updating ACKs	1 hour	2 hours
Wednesday 3 Oct	Implement Confirmation and Success Feedback	1 hour	2 hours
Thursday 4 Oct	Meeting	3 hours	3 hours
Friday 5 Oct	Debug functions of website demo	2 hours	3 hours
Saturday 6 Oct	Update Website Demo in PMP	1 hour	1 hour
Saturday 6 Oct	Record Timesheet	0.5 hour	0.5 hour
Sunday 7 Oct	Meeting	3 hours	3 hours

Monday 8 Oct	Development level test	3 hours	3 hours
Tuesday 9 Oct	Meeting	2 hours	2 hours
Thursday 11 Oct	Debug due to test results	2 hours	3 hours
Friday 12 Oct	Debug due to test results	2 hours	1.5 hours
Saturday 13 Oct	Record Timesheet	0.5 hour	0.5 hour

Timesheet - Xinjie Lan

Member Name: Xinjie Lan

Team name: GiveMeFive

Tutor: Mr Doc Wallace

Date: 13.10.2018

Date	Activity	Planned	Actual
Monday 17 Sep	Meeting	3 hours	3.75 hours
Tuesday 18 Sep	Research on Wix	2 hours	2 hours
Wednesday 19 Sep	Write Function Points	2 hours	2 hours
Thursday 20 Sep	Meeting	3 hours	3.5 hours
Thursday 20 Sep	Draw draft for design of logics	1 hours	1 hours
Monday 24 Sep	Meeting	3 hours	3.75 hours
Tuesday 25 Sep	Write test cases for websites	3 hours	5 hours
Tuesday 25 Sep	Find bugs within wix pages	1 hours	2 hours
Tuesday 25 Sep	Suggestions on feature improvements	1 hour	1 hour
Wednesday 26 Sep	Meeting	3 hours	3.75 hours
Wednesday 26 Sep	Identify Inputs and Outputs for the website pages	2 hours	2.5 hours
Friday 28 Sep	Edit sections from 1.0 based on the feedback from first submission	1.5 hour	2 hour
Friday 28 Sep	Record Timesheet	1 hour	1 hour
Saturday 29 Sep	Final edit of PMP 1.1	2 hours	2 hours
Monday 1 Oct	Meeting	2 hours	2 hours
Monday 1 Oct	Unit testing the interfaces	1 hour	1 hour
Wednesday 3 Oct	Testing & Recording the results	3 hours	3.5 hours
Wednesday 3 Oct	Suggestions on possible solutions for bugs	0.5 hour	0.5 hour
Thursday 4 Oct	Meeting	3 hours	3 hours
Friday 5 Oct	Revise PMP	1 hour	2 hours
Saturday 6 Oct	Record Timesheet	0.5 hour	0.5 hour
Sunday 7 Oct	Meeting	3 hours	3 hours
Monday 8 Oct	Business Process Testing Script	3 hours	4 hours
Tuesday 9 Oct	Meeting	2 hours	2 hours
Tuesday 9 Oct	Record Meeting Minutes	0.5 hour	0.5 hour
Friday 12 Oct	Update Appendix	2 hours	2 hours
Saturday 13 Oct	Polish PMP 1.3	1 hour	1 hour
Saturday 13 Oct	Record Timesheet	0.5 hour	0.5 hour

Timesheet - Shenglan Yu

Member Name: Shenglan Yu

Team name: GiveMeFive

Tutor: Mr Doc Wallace

Date: 13.10.2018

Date	Activity	Planned	Actual
Sunday 16 Sep	Plan meeting and following stage work	1 hour	2 hours
Monday 17 Sep	Meeting	3 hours	3.75 hours
Tuesday 18 Sep	Requirement breakdown	2 hours	3 hours
Wednesday 19 Sep	Write Functional Points	2 hours	2 hours
Thursday 20 Sep	Meeting	3 hours	3.5 hours
Friday 21 Sep	Relational Database	1 hour	1 hour
Friday 21 Sep	Integrate SRS	1 hour	1 hour
Saturday 22 Sep	COCOMO II estimation	2 hours	2 hours
Sunday 23 Sep	Plan next stage work	2 hours	2 hours
Monday 24 Sep	Meeting	3 hours	3.75 hours
Tuesday 25 Sep	Interaction Diagram	2 hours	3 hours
Tuesday 25 Sep	UX design	1 hour	2 hours
Wednesday 26 Sep	Meeting	3 hours	3.75 hours
Thursday 27 Sep	PMP update	2 hours	2 hours
Monday 1 Oct	Meeting	2 hours	2 hours
Monday 1 Oct	Implement Login & Register pages and functions	2 hours	3 hours
Tuesday 2 Oct	Unit testing the interfaces	1 hour	1 hour
Wednesday 3 Oct	Modification	1 hour	1 hour
Thursday 4 Oct	Meeting	3 hours	3 hours
Friday 5 Oct	Update PMP	2 hour	3 hour
Saturday 6 Oct	Sort Appendix	1 hour	1 hour
Sunday 7 Oct	Define user acceptance testing principle	3 hours	3 hours
Sunday 7 Oct	Meeting	3 hours	3 hours
Monday 8 Oct	Detail acceptance criteria	2 hours	3 hours
Tuesday 9 Oct	Meeting	2 hours	2 hours
Wednesday 10 Oct	Final Modification	2 hours	2 hours
Thursday 11 Oct	Project and Management Review	2 hours	2 hours
Friday 12 Oct	Update Appendix	2 hours	2 hours
Saturday 13 Oct	Polish PMP 1.3	1 hour	1 hour
Saturday 13 Oct	Record Timesheet	0.5 hour	0.5 hour

Appendix D: Function Points Estimation

The document shows the clear procedure of cost estimation using Function points and COCOMO II approach. However, the estimation result is far from reality. The main reason is that the COCOMO II technique lacks relevant transition factor for Wix and JavaScript. The main keeps the original estimation for now.

1.0 Function Category

Each atomic requirements is categorized into certain estimation category.

<i>Function ID</i>	<i>Description</i>	<i>Category</i>
R1.1	Users can input their personal information with an initial password through the website interface for registration use.	EI
R1.2	The system can save the registration information into a relational database table called <i>Customers</i> .	ILF
R2.1	Users can input their registered email and password through the website interface for login use.	EI
R2.2	The system can query the email and password pair through database for login.	EQ
R3.1	Users can input their personal information including Email Address, Real Name, Home Address and Contact Number through the website interface for update use.	EI

R3.2	The system can save the updated registration information into a relational database table called <i>Customers</i> .	ILF
R4.1	Users can input booking request information including box numbers, destination address, pick up address and optional message through website interface.	EI
R4.2	The system can send user-input information to the quote page on-the-fly.	—
R5.1	The system queries the dates from the relational database called Arrival_Dates and Departure_Dates respectively.	EQ
R5.2	The system outputs three pairs of arrival and departure dates to the users through the request interface.	EO
R6.2	The system calculates a total cost based on the request box number.	—
R6.3	The quote information are shown to users through quote interface.	EO

R6.4	The system stores the booking information(both request and default ACK) from quote page into database if the customer accepts the result and finishes payment.	ILF
R8.1	Customers can query the order information through database.	EQ
R8.2	The system shows the extracted information to the customers through website interfaces.	EO
R9.1	The system can retrieve the latest version of/default <i>shipping_booking ACK</i> from the database.	EQ
R9.2	The system displays the <i>shipping_booking ACK</i> through website interface.	EO
R9.3	The shipper can edit the <i>shipping_booking ACK</i> through interface.	EI
R9.4	The system can save the lastest version of the <i>shipping_booking ACK</i> to the database.	ILF

R10.1	The system is connected with an email address implicitly.	-
R10.2	The system can query the customer and collector email through database.	EQ
R10.3	The system can send emails with external email service provider.	-
R11.1	Collector and shipper can input their predefined username and password through a different login interface.	EI
R11.2	The system can query the login information through database.	EQ
R12.1	The system saves predefined shipper and collector information in the database.	ILF
R13.1	The customers can input credit card information through website interface.	EI

R13.2	The system can send payment information to third-party trading system to finish payments.	EO
R14.1	Navigation pages or homepages that enables customers to find each operations related pages.	-
R15.1	Customers can input booking ID through homepage interface.	EI
R15.2	The system can query the ID through database.	EQ
R15.3	The corresponding booking information can be shown through interface.	EO

2.0 Category Complexity Evaluation

The team furtherly calculate the category complexity according to the reference table provide in *Lecture 6 Page 40*.

ID	Category	Description	DETS	RETS	FTRS	Complexity
R1.1	EI	Email, Last Name, First Name, Address, Mobile, Password	6		1	Simple
R1.2	ILF	Email, Last Name, First	6	1		Simple

		Name, Address, Mobile, Password				
R2.1	EI	Email,Passwor d	2		1	Simple
R2.2	EQ	Email,Passwor d	2		1	Simple
R3.1	EI	Email, Last Name, First Name, Address, Mobile, Password	6		1	Simple
R3.2	ILF	Email, Last Name, First Name, Address, Mobile, Password	6	1		Simple
R4.1	EI	box numbers, destination address, pick up address and optional message	4		1	Simple
R5.1	EQ	Dates	2		1	Simple
R5.2	EO	Dates	2	1		Simple
R6.3	EO	box numbers, destination address, pick up address and optional message, cost	5		1	Simple
R6.4	ILF	All booking request and back information	11	2		Simple
R8.1	EQ	All booking request and	11		1	Simple

		back information				
R8.2	EO	All booking request and back information	11		1	Simple
R9.1	EQ	Status, Pick_up time, cost, HBL number, Message	5		1	Simple
R9.2	EO	Status, Pick_up time, cost, HBL number, Message	5		1	Simple
R9.3	EI	Status, Pick_up time, cost, HBL number, Message	5		1	Simple
R9.4	ILF	Status, Pick_up time, cost, HBL number, Message	5	1		Simple
R10.2	EQ	Customer and Collector email	2		1	Simple
R11.1	EI	Username and password	2		1	Simple
R11.2	EQ	Username and password	2		1	Simple
R12.1	ILF	Username and password	2	2		Simple
R13.1	EI	Card number, expiry date, CVV, Name, Bill Address	5		1	Simple
R13.2	EO	Card number, expiry date,	5		1	Simple

		CVV, Name, Bill Address				
R15.1	EI	tracking number	1		1	Simple
R15.2	EQ	tracking number	1		1	Simple
R15.3	EO	All booking request and back information	11		1	Simple

3.0 Total count

The team makes total function points count according to the weight factor provided in Lecture 6 page 43.

<i>Information Domain Value</i>	<i>Count</i>	<i>Simple</i>	<i>Average</i>	<i>Complex</i>	<i>Column Total</i>
ILFs	5	7	10	15	35
EIFs	0	5	7	10	
EIs	8	3	4	6	24
EOs	6	4	5	7	24
EQs	7	3	4	6	21
Count total					104

4.0 Value Adjustment Factors

The team adjusts the 14 affecting factors in range of 0-5.

The total value adjustment points is 31.

<i>Adjustment Type</i>	<i>Scale</i>	<i>Justification</i>
Data Communications	2	The data communication amount in the project is small.
Distributed Data Processing	2	Concurrency issues are not important as each customer only have limited editing permit.
Performance	3	Quite important but easy to achieve for such a small project.
Heavily Used Configuration	1	Irrelative to the project.
Transaction Rate	1	Irrelative to the project.
Online Data Entry	4	Critical as the system has massive data input.
End-User Efficiency	5	Very important as it decides the business value.
Online Update	2	Not so relative to the project.
Complex Processing	1	Quite easy project.
Reusability	2	Not so relative to the project.
Installation Ease	0	Irrelative to website.
Operational Ease	5	Critical as providing user-friendly service is the client's vision.
Multiple Sites	2	Not so relative at the business beginning stage.
Facilitate Change	1	Irrelative to the project.

5.0 Final Function Points

Using the formula provided in Lecture 6 Page 49, the final total points is $104 * (0.65 + 0.01 * 31) = \mathbf{99.84}$.

6.0 COCOMO II Cost Estimation

Formula: Effort = A * Size^B * M , where A = **2.94**

Estimating Size:

The team assumes the transition factor from function points data to KSLOC is 50, which is the lowest value in existing full-stack developing languages. Considering that the team uses Wix as the main tool, the real transition rate should be much lower than the assumption. Thus, the assumption will not underestimate the real cost and the team shall meet the timeline following the estimation.

Size = **5** KSLOC

Estimating B:

Item	Score	Justification
Precedentedness	4	Member new to the practice developing.
Development Flexibility	1	Small-scale project
Architecture completed and Risks eliminated	1	Mature architecture
Team cohesion	1	Nice character
Process Maturity	3	Quite mature process

With the formula from Lecture 6 Page 71, the team has B as **1.11**

Estimating M:

Item	Score	Justification
RCPX	0.88	Clear system logic.
RUSE	0.91	Low expect on reuse.
PDIF	0.87	Mature platform.
PREX	1.23	Member new to the practice developing.
PERS	0.87	Consistent and quite clever team members.

SCED	1	The workload is normal.
FCIL	0.89	Supports are sufficient.

With the formula from Lecture 6 Page 72, the team has M as **0.66**.

Effort and Time estimation

With the formula from Lecture 6 Page 75, the team has Effort as **11.4**.

Delivery time = 5.85

Appendix E: System Requirement Specification

Document Purpose

The purpose of the document is to give a more detailed description of in-scope requirements for better effort estimation and dedicated system design. The document is presented as following parts: Requirement Use case, Requirement BreakDown and Requirement Input & Output Identifications.

Document Limitation

The document is a simplified version of an industry-standard SRS, omitting some parts such as sequence diagram and domain models. The reasons are that some components are out scope of the subject and do little help on the succeeding tasks , and the team members lack certain skills making the components.

1.0 Use case

The requirements identified in the PMP 1.0 are presented by Use case diagram in a clear and direct manner.

Customers can be divided into registered and unregistered users. Unregistered users can track packages and register accounts. After login, registered users can create new booking, get a quote and make a payment online. The payment service is provided by Paypal. The system generates ACK for the shipper to view and edit. The system also generates booking details for the registered user and collector to view.

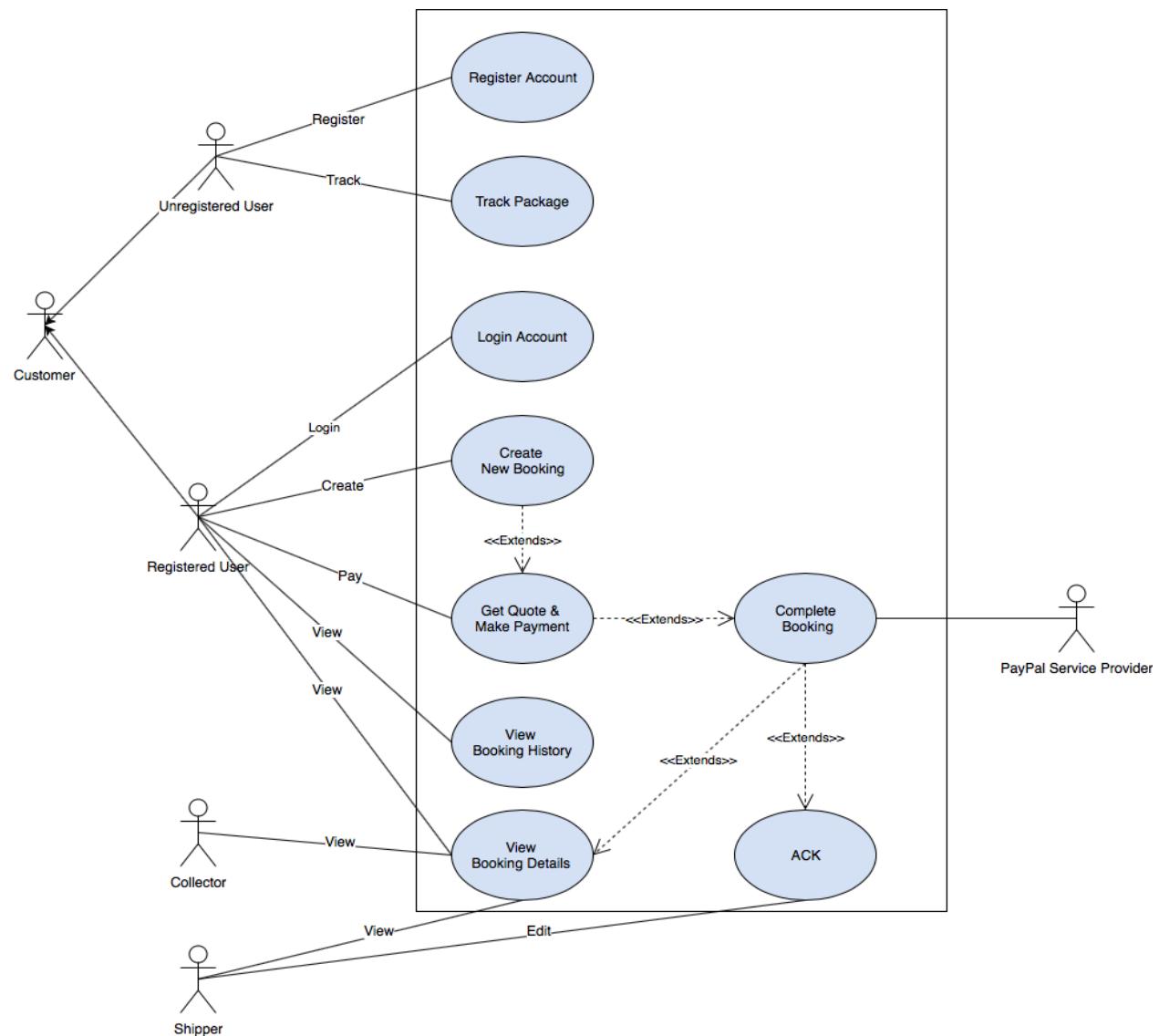


Figure: Use Case Diagram

2.0 Requirement Breakdown

The 15 high level in-scope requirements are breakdown into atomic functional components for better estimation and design purpose.

1. Users can register their information (Email Address, Real Name, Home Address, Contact Number) into the system combined with a password.
 - 1.1 Users can input their personal information including Email Address, Real Name, Home Address and Contact Number with an initial password through the website interface for registration use.
 - 1.2 The system can save the registration information into a relational database table called *Customers*.
2. The product should provide a login function that enables customers to log into the system by their registered email and password. Non-valid login requests should be denied by the system.
 - 2.1 Users can input their registered email and password through the website interface for login use.
 - 2.2 The system can query the email and password pair through database for login use.
3. The product should allow registered users to update their personal information.
 - 3.1 Users can input their personal information including Email Address, Real Name, Home Address and Contact Number through the website interface for update use.
 - 3.2 The system can save the updated registration information into a relational database table called *Customers*.
4. A booking feature that allows logged customers to create a shipping booking by typing in their request information from user interface. The request information should meet a rigid data format requirement.
 - 4.1 Users can input booking request information including box numbers, destination address, pick up address and optional message through website interface.
 - 4.2 The system can send user-input information to the quote page on-the-fly.

5. A date recommendation feature. In this feature, the system should prompt three available shipping dates of departure and arrival to the customers.
 - 5.1 The system queries the dates from the relational database called Arrival_Dates and Departure_Dates respectively.
 - 5.2 The system outputs three pairs of arrival and departure dates to the users through the request interface.
6. The product should be able to automatically generate a shipment quote by the request information. The quote plays as an confirmation role which ensures the information validity and gives customers a direct idea of the service price.
 - 6.1 Reads information from request pages. *Refers to 4.2.*
 - 6.2 The system calculates a total cost based on the request box number.
 - 6.3 The quote information are shown to users through quote interface.
 - 6.4 The system stores the booking information(both request and default ACK) from quote page into database if the customer accepts the result and finishes payment.
7. A database feature that allows the system to store customer registration information, customers' order history and order status.

The requirement is implicitly addressed by other requirements.

8. A viewing feature that enables customers to view (but no editing permit) all the shipping_bookings and associated information created by them.
 - 8.1 Customers can query the order information through database.
 - 8.2 The system shows the extracted information to the customers through website interfaces.
9. A *shipping_booking ACK* manipulation feature that allows the shipper to create and edit the *shipping_booking ACK* following each booking request. The *shipping_booking ACK* should meet certain data format requirement.
 - 9.1 The system can retrieve the latest version of/default *shipping_booking ACK* from the database.

- 9.2 The system displays the *shipping_booking ACK* through website interface.
- 9.3 The shipper can edit the *shipping_booking ACK*.
- 9.4 The system can save the lastest version of the *shipping_booking ACK* to the database.

10. An email generating system that automatically sends emails to collectors and customers whenever there is a change in ACK.

- 10.1 The system is connected with an email address implicitly.
- 10.2 The system can query the customer and collector email through database.
- 10.3 The system can send emails with external email service provider.

11. A classification feature that enables the system to differentiate super users(herein shipper and collector) from normal users(herein customers).

- 11.1 Collector and shipper can input their predefined username and password through a different login interface.
- 11.2 The system can query the login information through database.

12. A default information registration feature that enables the system to store predefined email username and initial password for shipper and collector.

- 12.1 The system saves predefined shipper and collector information in the database.

13. A payment feature which allows customers to pay their shipment cost.

- 13.1 The customers can input credit card information through website interface.
- 13.2 The system can send payment information to third-party trading system to finish payments.

14. A website-based graphical user interface system that enables all involved players to perform permitted operations from the website interfaces.

- 14.1 Navigation pages or homepages that enables customers to find each operations related pages.

*A whole set of website interfaces meeting related input and output requirements.
Presented in other requirements.*

15. A function that allows users to query the orders. For example, a user typed in a tracking number on the home page, and then there will be an order status feedback.

- 15.1 Customers can input booking ID through homepage interface.
- 15.2 The system can query the ID through database.
- 15.3 The corresponding booking information can be shown through interface.

3.0 Requirement Input & Output Identifications

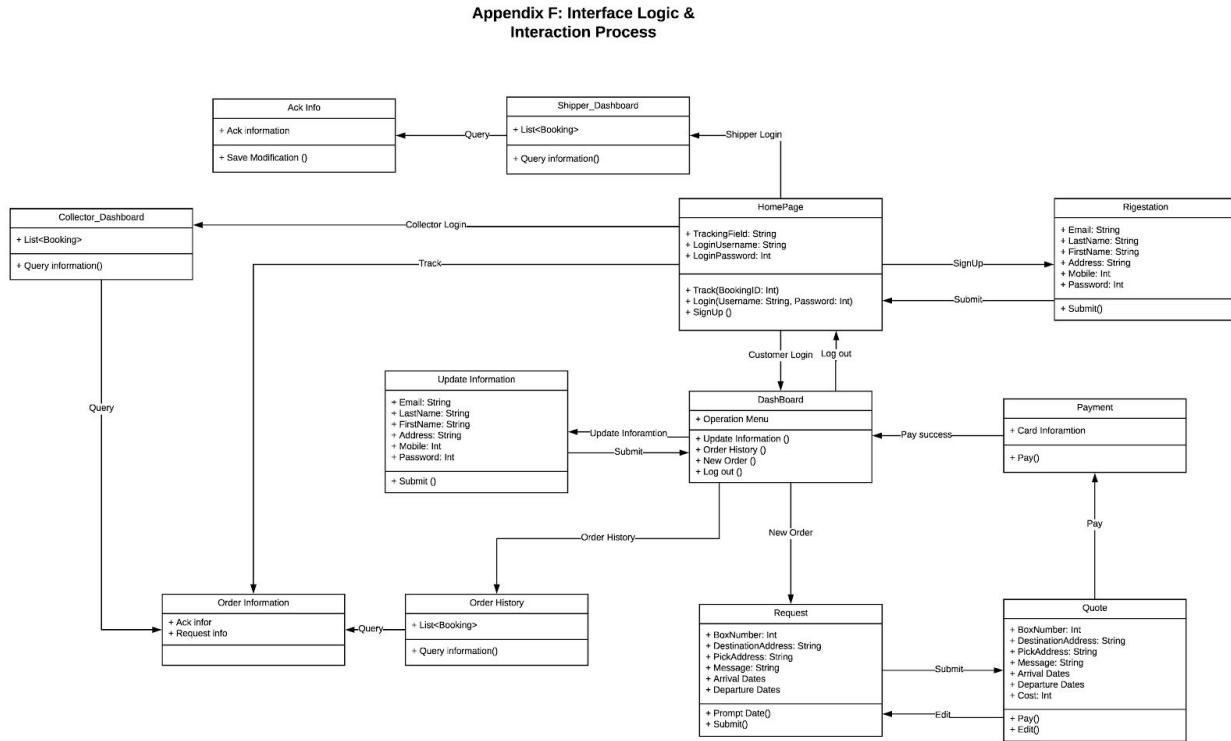
The team applies Wix tools for website interface implementation. Thus, the external inputs and outputs functions are transparently solved by the Wix easy drag-and-release operations.

As for the functions not dealt easily by Wix, the team furtherly identify their inputs and outputs type in the following table.

Function ID	Input Data	Input Data Type	Output Data Type
R 1.2	Email Address, First name, Last name, Mobile number, Password	List<String,Int>	Boolean (Whether the information is successfully saved)
R 2.2 R 11.1	Email, Password	List<String>	Boolean (Whether the login information is valid)
R 3.2	Email, Address, First name, Last name, Mobile number, Password	List<String>	Boolean (Whether the information is successfully saved)
R 5.1	Today's Date	Date	Prompted Date Failure(no available dates)

R 6.2	Box number	Int	Int (Total cost)
R 6.4	All booking Information	List<String,Int>	Boolean (Whether the information is successfully saved)
R 8.1 R15.2	Booking ID	Int	List<String> Failure (Booking information or error message)
R 9.4	Status;Dates;HBL Number;Optional Message	List<String,Int>	Boolean (Whether the information is successfully saved)
R 13.2	Credit card information	List<String,Int>	Boolean (Whether transaction success)

Appendix F: Interface Logic & Interaction Process



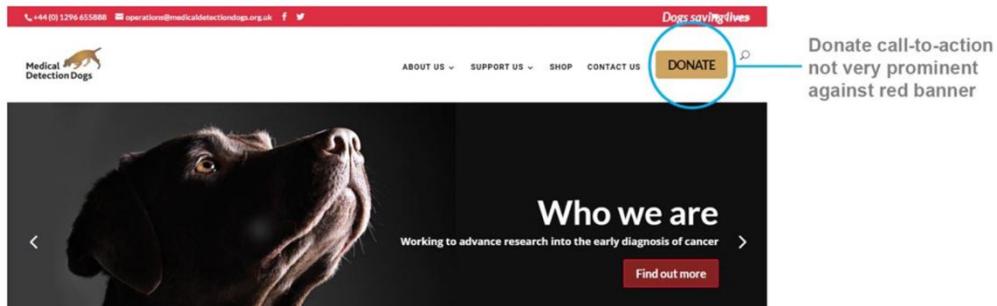
Appendix G: UX Design Analysis & Specification

The team aims to build a precise and user-friendly business website with clear navigation and modern appearance. The team used Wix website frameworks to achieve the interface goals which provides massive of mature UX design templates. Based on the mature templates, the team also conducts one case study [1] to figure out some general UX design principles.

“Medical Detection Dogs is a charity that trains dogs to help people with life-threatening health conditions. Their website provides information about their work and allows donations to be made online.”

With a survey, the website users presented some using issues:

- A. Users feel stuck to make donations as the function wasn't addressed clearly.



- B. The donation form was confusing as the text font and colour is inconsistent.

The screenshot shows the 'Online donation' page. At the top left is the Medical Detection Dogs logo. Below it, the heading 'Online donation' is displayed in a bold, black, sans-serif font. The page contains several text input fields and dropdown menus. Some text is in a standard black font, while other parts, such as error messages and placeholder text, are in a smaller, lighter gray font. For example, the placeholder text 'Please enter the amount you would like to donate. *' is in gray, while the main instructions are in black. The overall layout is cluttered with different font styles and colors.

For own project, to avoid making the user experience inconvenience mentioned above, the team applied serval principles when designing the interfaces.

- A. Using colour comparison and layout, put the main functions prominently in the homepage.

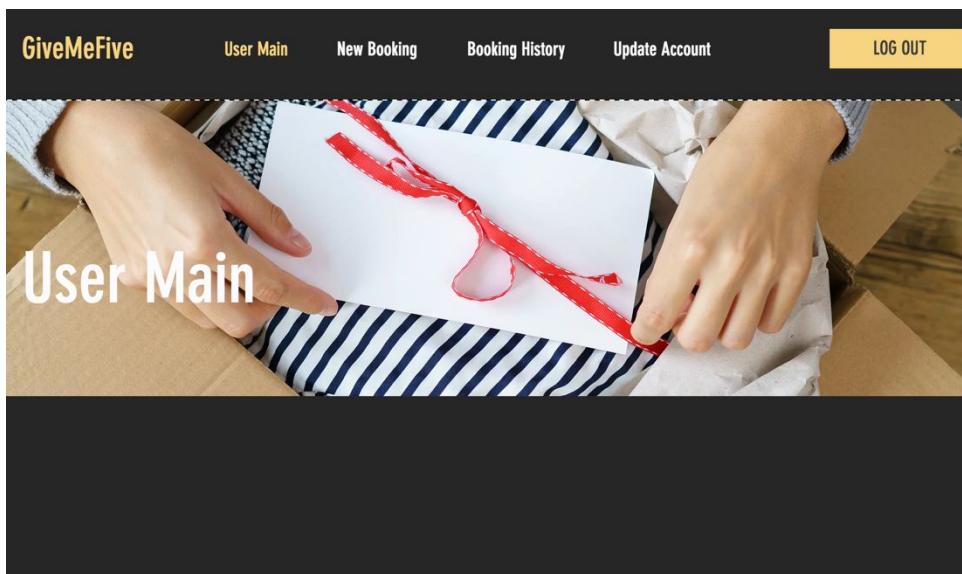
The login and register functions are put high-lightly at the top of the homepage while the track function is located at the homepage centre.

The Homepage preliminary design effects:



All Customer main functions are highlighted at the top of the page with clear colour classification and easy-to-follow layout.

The Customer Main page preliminary design effects:

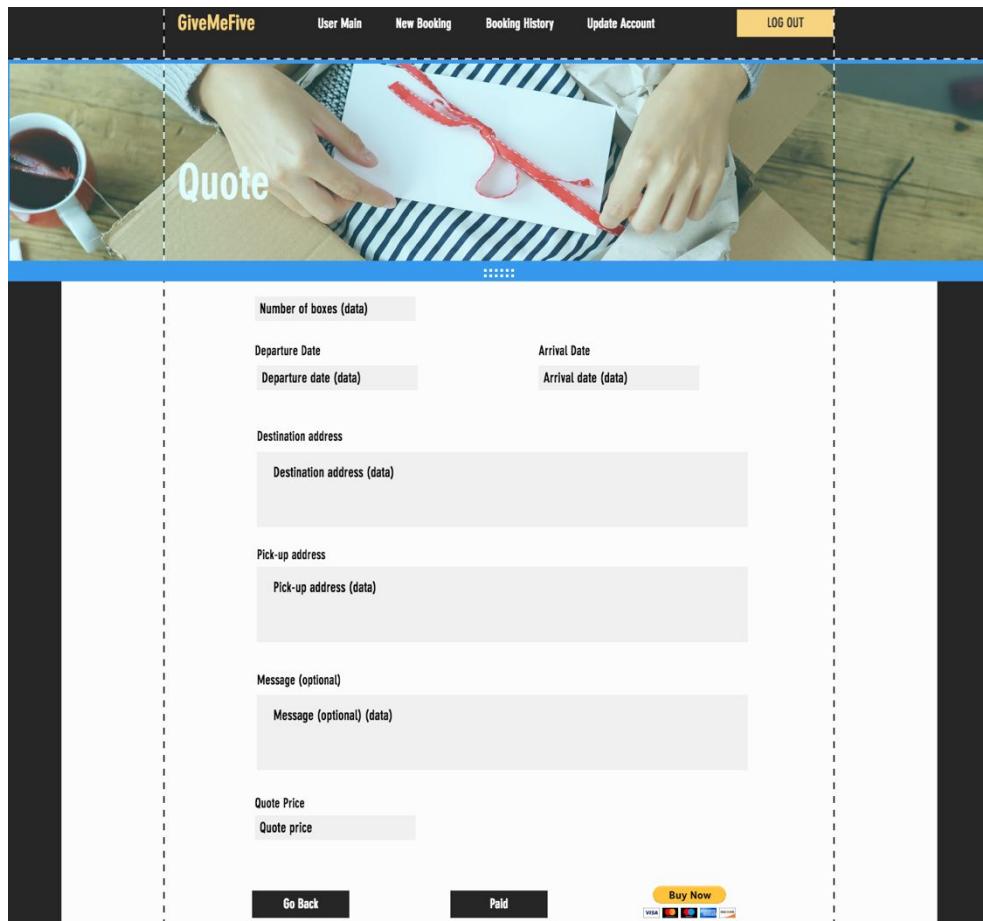


- B. Keep the text output and input form clear with domain font style and size, left alignment and appropriate input prompt.

The Ack info. preliminary design effects:

<i>Booking number</i>	<i>Booking ID (From database, can't edit)</i>
<i>Status</i>	
<input type="radio"/> To be Approved <input type="radio"/> Request Accepted <input type="radio"/> Pick-up Scheduled <input type="radio"/> To be Shipped <input type="radio"/> Arrived at Destination <input type="radio"/> Delivered <input type="radio"/> Delivery Delayed	
<i>Pick-up Date</i>	Select a Date 
<i>Pick-up Time</i>	
<input type="radio"/> Morning (9am - 11am) <input type="radio"/> Noon (11am - 2pm) <input type="radio"/> Afternoon (2pm - 5pm)	
<i>Departure Date</i>	
<i>Arrival Date</i>	

The Booking request and quote page preliminary design effects:



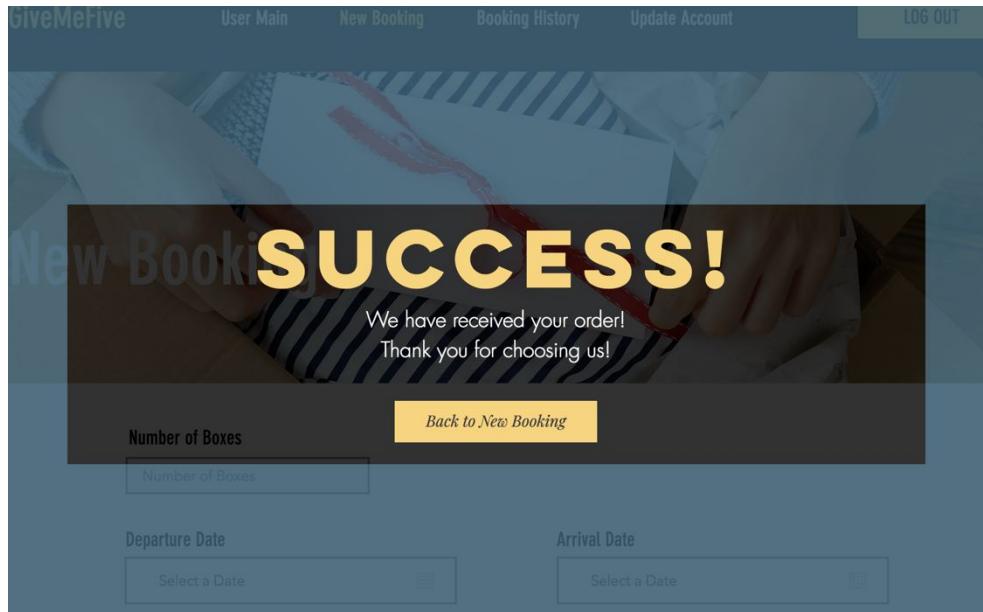
The screenshot shows the 'Quote' section of the GiveMeFive application. The interface includes a header with the 'GiveMeFive' logo and navigation links for User Main, New Booking, Booking History, and Update Account, along with a LOG OUT button. The main content area has a background image of hands packing boxes. The form fields are as follows:

- Number of boxes (data):** A text input field.
- Departure Date:** A text input field.
- Departure date (data):** A text input field.
- Arrival Date:** A text input field.
- Arrival date (data):** A text input field.
- Destination address:** A text input field containing placeholder text "Destination address (data)".
- Pick-up address:** A text input field containing placeholder text "Pick-up address (data)".
- Message (optional):** A text input field containing placeholder text "Message (optional) (data)".
- Quote Price:** A text input field.
- Quote price:** A text input field.

At the bottom, there are three buttons: "Go Back", "Paid", and "Buy Now". The "Buy Now" button is highlighted in yellow and includes icons for various payment methods like VISA, MasterCard, and American Express.

C. Prominent interaction message box for informing operation result.

The message box preliminary design effects:



Reference:

[1] Gemma Sweeney. Charity Website: a UX case study.

<https://uxdesign.cc/charity-website-a-ux-case-study-209071f1622b>

Appendix H: Preliminary Testing Cases

V1.2 Update

The document records the unit test results of each component. The document is a component of final acceptance testing cases.

The purpose of the document is to give preliminary testing cases for the unit tests in the implementation stage. The testing cases are not comprehensive and will be extended in the implementation and acceptance testing stage.

1-1.

Test Scenario ID		Register-1		Test Case ID		Register-1A	
Test Case Description		Register - Positive Test Case		Test Priority		High	
Prerequisite		HomePage		Post-Requisite		NA	
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Hit Sign-up Button	NA	Registration Page	Registration Page	Shenglan Yu	Pass	NA
2	Enter correct information and hit submit button	Email Address, First name, Last name, Address, Mobile number, Password	Sign up Successful. Record saved in database table.	Message showing sign up successful. Record saved in database table.	Shenglan Yu	Pass	NA

1-2

Test Scenario ID	Register-1		Test Case ID	Register-1B			
Test Case Description	Register - Negative Test Case			Test Priority	High		
Prerequisite	HomePage			Post-Requisite	NA		
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Hit Sign-up Button	NA	Registration Page	Registration Page	Shenglan Yu	Pass	NA
2	Enter incomplete information and click submit button	Email, Password	Sign up failure. Some required fields are empty.	Message showing field empty. Sign up failure.	Shenglan Yu	Pass	First time test failure. Not showing wrong message. After modification, second time passes.

1-3

Test Scenario ID	Register-1		Test Case ID	Register-1C			
Test Case Description	Register - Positive Test Case			Test Priority	High		
Prerequisite	HomePage			Post-Requisite	NA		
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments

1	Hit Sign-up Button	NA	Registration Page	Registration Page	Shenglan Yu	Pass	NA
2	Enter correct information and hit submit button	Email Address, First name, Last name, Address, Mobile number, Password	Sign up Successful. Record saved in database table.	The Registration Page isn't responding	Shenglan Yu	Fail	After some trial and research, the team find the reason may be that Wix needs password to be longer than 4 characters.

2-1

Test Scenario ID		Login-1		Test Case ID		Login-1A	
Test Case Description		Register - Positive Test Case		Test Priority		High	
Prerequisite		HomePage		Post-Requisite		Sign-In Page	
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Sign-In button	None	Sign-In Page	Sign-In Page	Xinjie Lan	Pass	
2	Enter correct username and password then click Submit	Email, Password	User-Dashboard Page	User-Dashboard Page	Xinjie Lan	Pass	

2-2

Test Scenario ID	Login-1		Test Case ID	Login-1B			
Test Case Description	Register - Negative Test Case			Test Priority	High		
Prerequisite	HomePage			Post-Requisite	Sign-In Page		
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Sign-In button	None	Sign-In Page	Sign-In Page	Xinjie Lan	Pass	
2	Enter Incorrect username and password then click Submit	Email, Password	Failed to login, A message indicates either users typed invalid information or the email has not register yet	Failed to login, A message indicates either users typed invalid information or the email has not register yet	Xinjie Lan	Pass	

3-1

Test Scenario ID	Update Info-1	Test Case ID	Update Info-1A
Test Case Description	Update Info- Positive Test Case	Test Priority	Medium
Prerequisite	User Dashboard Page	Post-Requisite	None

Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Update Account	None	Updating Page	Updatin g Page	Xinjie Lan	Pass	
2	Type updated personal information	Password, Name,Address,Phone Number	Error-Free messages to user	Error-Fr ee message s to user	Xinjie Lan	Pass	PASSWORD and Email are not able to change right now
3	Click Update Button	Email, Password	User Dashboard Page;Data stored in database	User Dashboa rd Page;	Xinjie Lan	Pass	

3-2

Test Scenario ID	Update Info-1	Test Case ID	Update Info-1B
Test Case Description	Update Info- Negative Test Case	Test Priority	Medium
Prerequisite	User Dashboard Page	Post-Requisite	None

Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Update Account	None	Updating Page	Updatin g Page	Xinjie Lan	Pass	
2	Enter Special characters in names	Password, Name,Address,Phone Number	Error messages to user	None	Xinjie Lan	Failed	The team decides to allow special characters for

							the personal information
3	Click Update Button	None	Failed to Update	User Dashboard	Xinjie Lan	Failed	

4-1

Test Scenario ID	Creating Order-1		Test Case ID	Creating Order-1A			
Test Case Description	Creating Order- Positive Test Case		Test Priority	High			
Prerequisite	User Dashboard Page		Post-Requisite	QuotePage			
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click New-Booking Button	None	Order Page	Order Page	Xinjie Lan	Pass	
2	Type required information to fulfill the form	Box Numbers, Destination & Pick-up Address, Optional Message	Message indicates user has entered correct data type	None	Xinjie Lan	Failed	Message can simply be a check mark
3	Click Get-a-quote Button	None	Quote Page	Quote Page	Xinjie Lan	Pass	

4-2

Test Scenario ID	Creating Order-1		Test Case ID	Creating Order-1B			
Test Case Description	Creating Order- Negative Test Case			Test Priority	High		
Prerequisite	User Dashboard Page			Post-Requisite	Quote Page		
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click New-Booking Button	None	Order Page	Order Page	Xinjie Lan	Pass	
2	Enter incomplete information	Box Numbers, Destination & Pick-up Address, Optional Message	Error messages to user	Error messages to user	Xinjie Lan	Pass	special characters in number of box etc still considered as valid input

4-3

Test Scenario ID	Creating Order-1		Test Case ID	Creating Order-1C			
Test Case Description	Creating Order- Negative Test Case			Test Priority	High		
Prerequisite	User Dashboard Page			Post-Requisite	Quote Page		
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click New-Booking Button	None	Order Page	Order Page	Xinjie Lan	Pass	

2	Enter letters in box number field	Box Numbers,D estination & Pick-up Address,O ptional Message	Error messages to user	None	Xinjie Lan	Failed	No error messages to users. The cost field shows the letter entered in the box number field.
3	Click Get-a-quote Button	None	Failed to Creating the order	Quote Page	Xinjie Lan	Failed	

5-1

Test Scenario ID	Date Recommendation-1		Test Case ID	Date Recommendation-1A			
Test Case Description	Date Recommendation- Positive Test Case		Test Priority	Medium			
Prerequisite	Order Page		Post-Requisite	None			
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Calendar Icon and select a date for departure and arrival respectively	None	A window for available dates	A window for available dates	Xinjie Lan	Pass	

5-2

Test Scenario ID	Date Recommendation-1	Test Case ID	Date Recommendation-1B
-------------------------	-----------------------	---------------------	------------------------

Test Case Description	Date Recommendation-Negative Test Case		Test Priority	Medium			
Prerequisite	Order Page		Post-Requisite	None			
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Select a arrival date which is prior to the departure date	None	Failed to create the order.		Xinjie Lan	Pass	The default recommendations are in correct order, so this function cannot be tested

6-1

Test Scenario ID	Quote-1		Test Case ID	Quote-1A			
Test Case Description	Quote Positive Test Case		Test Priority	High			
Prerequisite	Order Page		Post-Requisite	None			
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click PayNow button	None	Directed to Payment page	Payment page	Xinjie Lan	Pass	
2	Click Paid button	None	Successful Window with option go back to ACK page	New Booking page	Xinjie Lan	Pass	Data saved to database with successful message. The

							output page is acceptable. The actual payment wasn't processed.
3	Click GoBack button	None	Back to order page	Order Page	Xinjie Lan	Pass	

8-1

Test Scenario ID	Customer Viewing-1		Test Case ID	Customer Viewing-1A			
Test Case Description	Customer Viewing Positive Test Case		Test Priority	High			
Prerequisite	Booking History		Post-Requisite	None			
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Select button	None	Directed to booking information page	booking information page	Xinjie Lan	Pass	Since clicked paid button twice, there are two orders. One shows correct information, and the other one shows null

9-1

Test Scenario ID	Shipper Editing ACK-1	Test Case ID	Shipper Editing ACK-1A
------------------	-----------------------	--------------	------------------------

Test Case Description	Shipper Editing ACK Positive Test Case		Test Priority	High			
Prerequisite	Booking History		Post-Requisite	None			
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Select button	None	Directed to ACK page	ACK page	Xinjie Lan	Pass	
2	Editing ACK information and click Save Button	Status;Dates;HBL Number;Optional Message	Updated data saved to database	Updated data saved to database	Xinjie Lan Shenglan Yu	Pass	At the first time, optional message can't be entered and Departure and Arrival Date not showing in correct order. After Modification, the function works well.

9-2

Test Scenario ID	Shipper Editing ACK-1		Test Case ID	Shipper Editing ACK-1B			
Test Case Description	Shipper Editing ACK Negative Test Case		Test Priority	High			
Prerequisite	Booking History		Post-Requisite	None			
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Select button	None	Directed to ACK page	ACK page	Xinjie Lan	Pass	

2	Enter a pick up date which is later than departure date	Date	Edited ACK won't be saved;ACK Page		Xinjie Lan	Pass	Default set to be true
3	Left Status to be empty	None	ACK won't be saved accompanied with hint message		Xinjie Lan	Pass	Default set to be true

10-1

Test Scenario ID	Email Generating System -1	Test Case ID	Email Generating System-1A				
Test Case Description	Email Generating System Positive Test Case	Test Priority	Low				
Prerequisite	Editing ACK Page	Post-Requisite	None				
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Click Save button	None	Confirmation Email sent	Confirmation Email sent	Shenglan Yu	Pass	Email sent.

13-1

Test Scenario ID	Payment -1	Test Case ID	Payment-1A
Test Case Description	Payment Positive Test Case	Test Priority	Low

Prerequisite		Editing ACK Page		Post-Requisite		None	
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Customer input correct payment information	Payment information	None				The testing is depreciated as the actual payment feature is adjusted.
2	Customer click pay button	None	Payment success message; booking information added to database				The testing is depreciated as the actual payment feature is adjusted.

15-1

Test Scenario ID		Homepage Tracking Function -1		Test Case ID		Homepage Tracking Function -1A	
Test Case Description		Homepage Tracking Function Positive Test Case		Test Priority		Medium	
Prerequisite		Homepage & Order History		Post-Requisite		None	
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Enter order number and click track button	Number	Booking information Page	HomePage	Xinjie Lan	Pass	Showing the package status.

15-2

Test Scenario ID	Homepage Tracking Function -1	Test Case ID	Homepage Tracking Function -1B				
Test Case Description	Homepage Tracking Function Negative Test Case	Test Priority	Medium				
Prerequisite	Homepage & Order History	Post-Requisite	None				
Test Execution Steps:							
S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Enter wrong order number and click track button	Number	Unsuccessful query;Homepage	HomePage	Xinjie Lan	Pass	Better showing error message.

Appendix I: Software Demo

The team made this document to show functions of each Wix page. Until Week 10, the website has the capability to run all in-scope features with only minor deficiencies and met basic business requirements.

1.0 Home Page



This is the homepage of the website. From this page, users can go to the following directions by clicking different buttons:

- *Booking status page* --by clicking the 'Track My Package' button
- *User login page* --by clicking the 'Sign In' button
- *New user registration page* --by clicking the 'Sign Up' button
- *Shipper login page* --by clicking the 'Shipper' button
- *Collector login page* --by clicking the 'Collector' button

Note: The input field is for all users to track packages by entering the booking number (booking ID).

2.0 Booking Status Page



This page shows the status of the certain booking that the user wants to track.

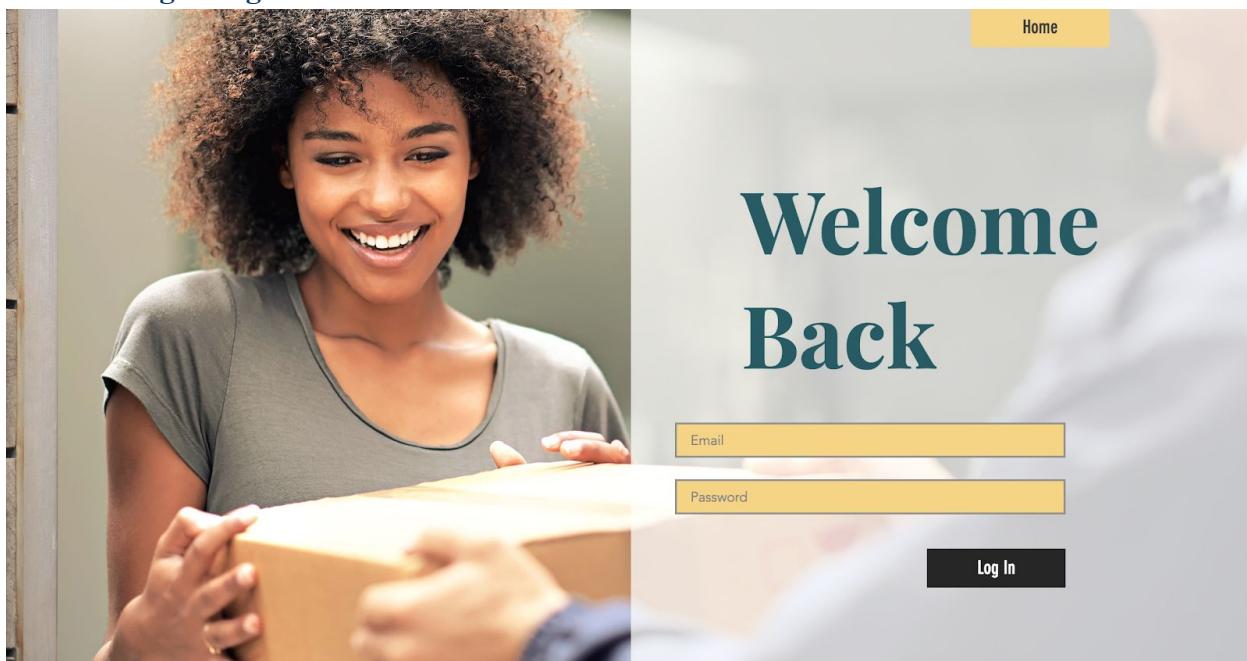
From this page, users can go to the following direction:

- *Home Page* --by clicking the 'Home' button

Note:

1. *The status includes 'To be Approved', 'Request Accepted', 'Pick-up Scheduled', 'To be Shipped', 'Arrived at Destination', 'Delivered', and 'Delivery Delayed'.*
2. *All users, including unregistered users, are allowed to track packages.*

3.0 User Login Page

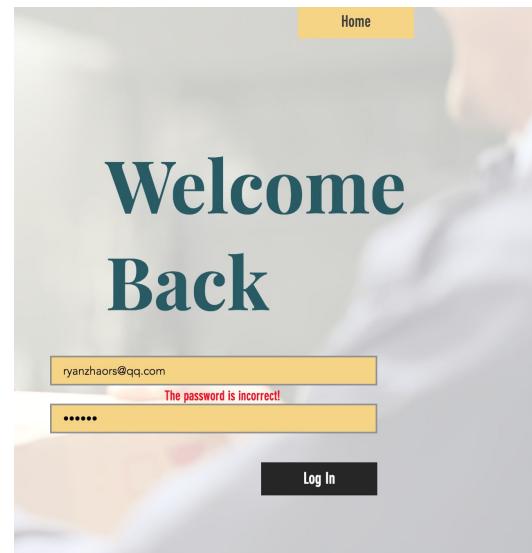
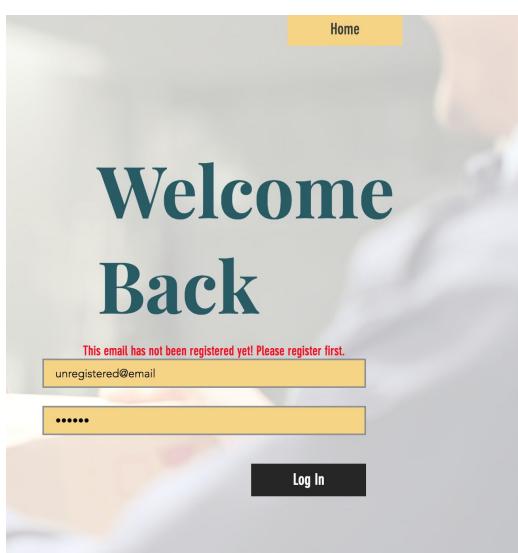


In User Log-In Page, registered users can enter their email and password to log in.

From this page, users can go to the following directions by different operations:

- *Home Page* --by clicking 'Home' button
- *User Main Page* --by clicking the 'Log In' button when input email and password are correct.

Note: An error message will be shown when the user entered an unregistered email or incorrect password. (Shown as below.)



4.0 User Register Page



Home

Register

First Name

Last Name

Email

Password (at least 4 digits)

Phone

Address

Register

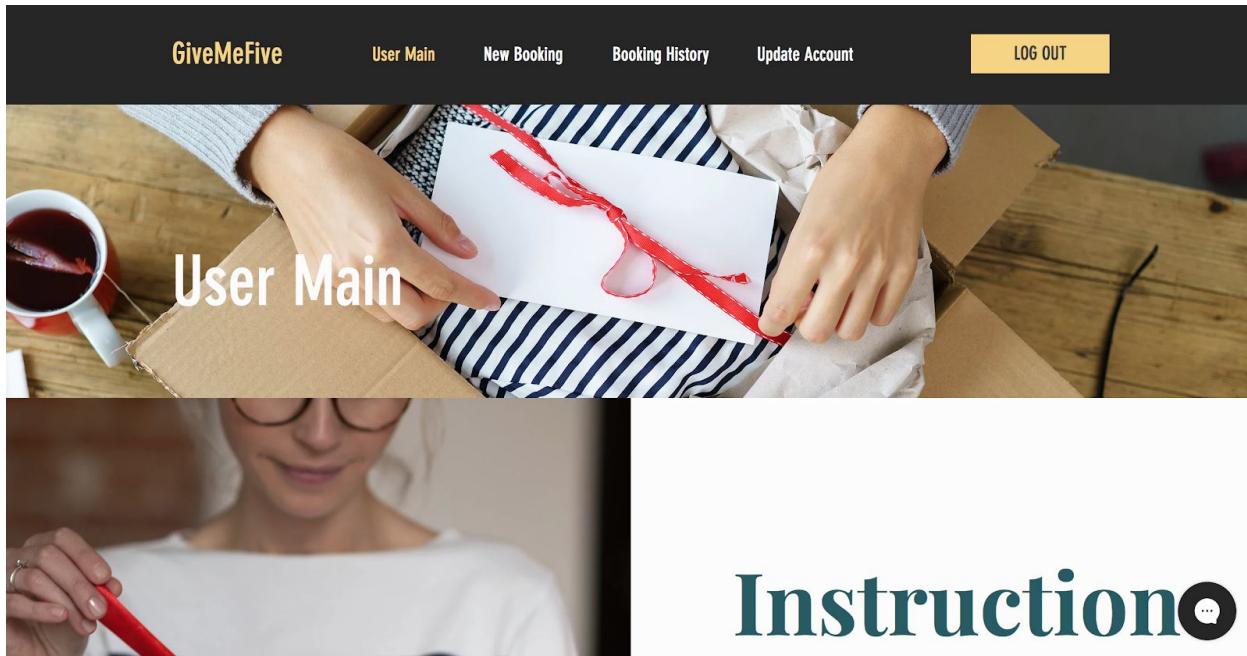
In User Register Page, unregistered users can fill in the form to register as a member of the website.

From this page, users can go to the following direction by successful register:

- *User Main Page* --by clicking ‘Register’ after input data successfully

Note: The form includes the user’s first name, last name, email, password, phone, and address. The email will be used as username and the unique identifier. The password should have at least 4 digits.

5.0 User Main Page



Instruction

User Main Page is like a dashboard for users. There is a menu on the top of this page. From this page, users can go to the following directions by clicking different buttons:

- *New booking Page* --by clicking 'New Booking'
- *Booking history Page* --by clicking the 'Booking History'
- *Update account Page* --by clicking the 'Update Account'
- *Home Page* --by clicking 'Log-out' Button

6.0 New Booking Page

GiveMeFive

User Main New Booking Booking History Update Account **LOG OUT**

New Booking

Number of Boxes
Number of Boxes

Departure Date
Select a Date

Arrival Date
Select a Date

Destination address
Destination address

Pick-up address
Pick-up address

Message (optional)
Message (optional)

Get a quote

In New Booking Page, login users can place a new booking order by filling in the form of basic information about this booking.

From this page, users can go to the following direction after filling the form:

- *Quote Page* --by clicking 'Get a quote' button

Note: This page is for login users. When users select the departure date and arrival date, the website will give out three recommended dates respectively.

7.0 Quote Page

The screenshot displays the 'Quote' page of the GiveMeFive application. At the top, there is a navigation bar with links for 'GiveMeFive', 'User Main', 'New Booking', 'Booking History', 'Update Account', and a yellow 'LOG OUT' button. Below the navigation bar is a large image showing a person's hands opening a cardboard box containing a wrapped gift with a red ribbon. To the left of the box is a white mug with a dark liquid.

The main content area contains the following information:

- Departure Date:** Wed Oct 10 2018
- Arrival Date:** Fri Oct 26 2018
- Destination address:** Destination address test
- Pick-up address:** Pick-up address test
- Message (optional):** Message test
- Quote Price:** 50

At the bottom of the page are several buttons: 'Go Back' (black background), 'Paid' (black background), a 'Buy Now' button with payment method icons (Visa, MasterCard, American Express, Discover), and a black circular icon with a white speech bubble symbol.

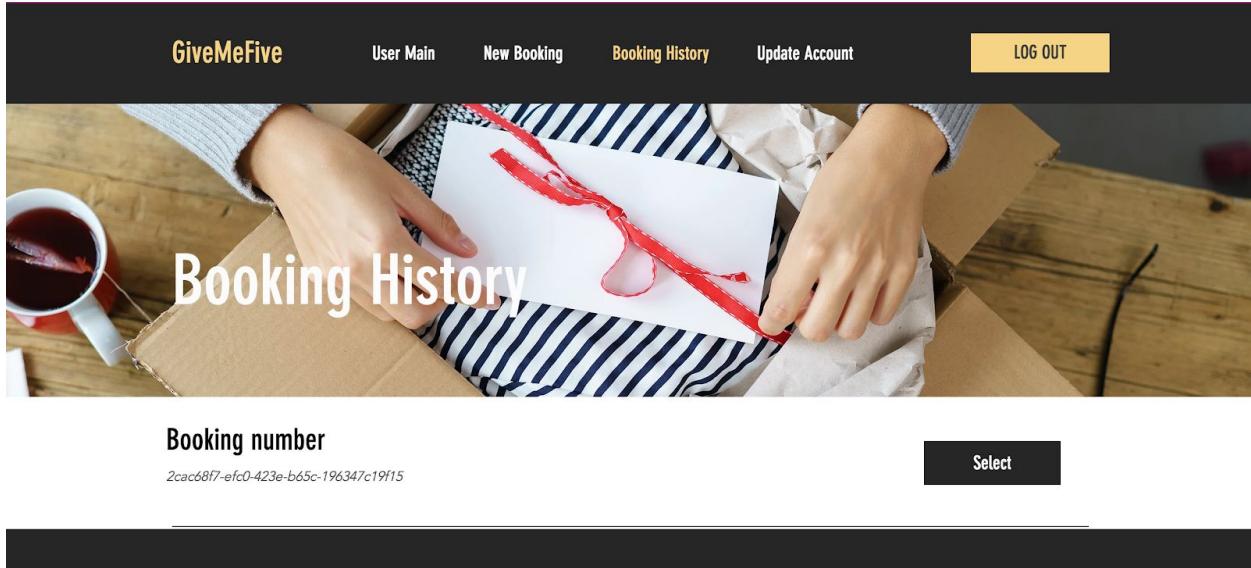
Quote Page is like a confirmation page for users to check the booking information again and get the price of this booking.

From this page, users can go to the following direction:

- *New booking Page* (order NOT submitted) -- by clicking 'Go Back' button
- *New booking Page* (order submitted) -- by clicking 'Paid' button

Note: The Buy Now button is for users to pay the order with PayPal, however, Wix can only support this service after becoming a paid member of Wix. So it is not working right now.

8.0 Booking History Page



GiveMeFive User Main New Booking Booking History Update Account LOG OUT

Booking History

Booking number
2cac68f7-efc0-423e-b65c-196347c19f15

Select

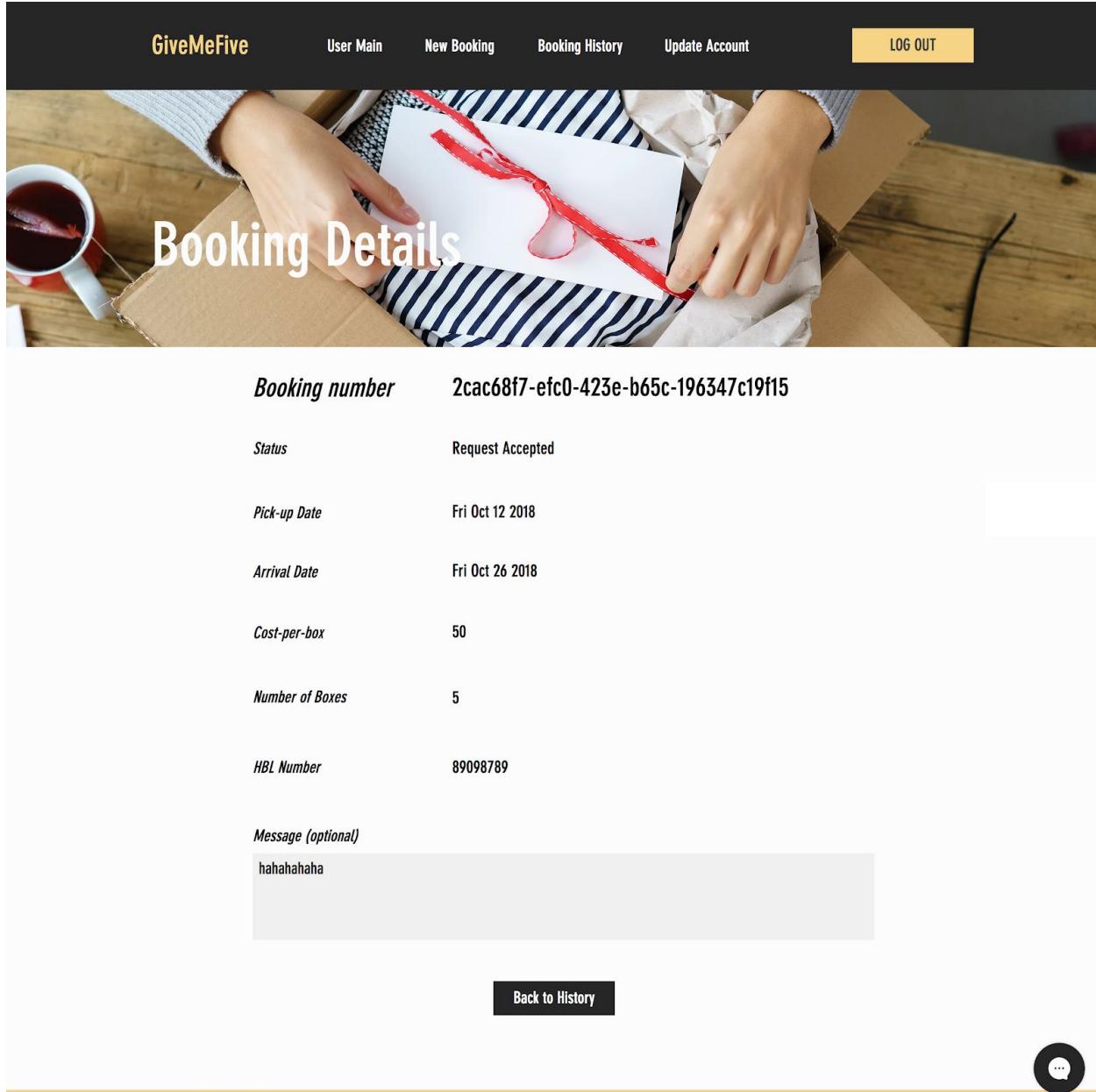
Booking History Page is for users to check their bookings.

From this page, users can go to the following direction:

- *Booking details Page* --by clicking the ‘Select’ button

Note: The page shows a list of Booking IDs which are placed by the login user.

9.0 Booking Detail Page



The screenshot shows the 'Booking Details' page of the GiveMeFive application. At the top, there is a navigation bar with links for 'User Main', 'New Booking', 'Booking History', 'Update Account', and a yellow 'LOG OUT' button. Below the navigation bar is a large image of a person's hands opening a cardboard box containing a striped shirt, with a red mug of tea on the left. Overlaid on the image is the text 'Booking Details'. The main content area displays booking details in a table format:

<i>Booking number</i>	2cac68f7-efc0-423e-b65c-196347c19f15
<i>Status</i>	Request Accepted
<i>Pick-up Date</i>	Fri Oct 12 2018
<i>Arrival Date</i>	Fri Oct 26 2018
<i>Cost-per-box</i>	50
<i>Number of Boxes</i>	5
<i>HBL Number</i>	89098789

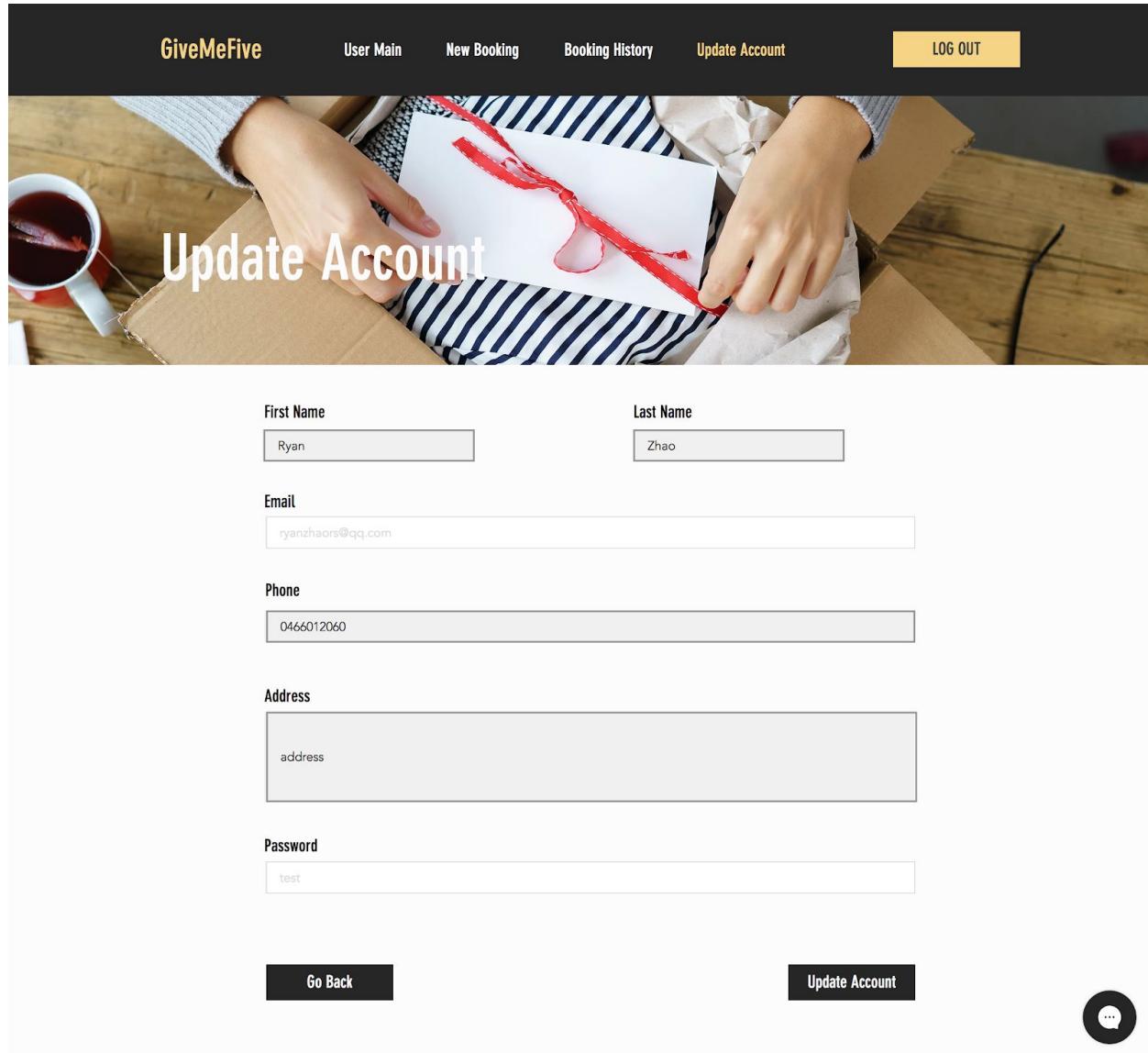
Below the table is a section for an optional message, which contains the text 'hahahahaha'. At the bottom of the page is a 'Back to History' button and a small circular icon with a speech bubble symbol.

In this page, users can check all the details of a booking order.

From this page, users can go to the following direction:

- *Booking History Page* --by clicking 'Back to History' button

10.0 Update Account Page



The screenshot shows the 'Update Account' page of the GiveMeFive website. At the top, there is a navigation bar with links for 'GiveMeFive', 'User Main', 'New Booking', 'Booking History', 'Update Account', and 'LOG OUT'. Below the navigation bar is a large image of a person's hands opening a cardboard box containing a gift-wrapped package tied with red ribbon. The word 'Update Account' is overlaid on the image in large white letters. The main form area contains fields for 'First Name' (value: Ryan), 'Last Name' (value: Zhao), 'Email' (value: ryanzhaors@qq.com), 'Phone' (value: 0466012060), 'Address' (placeholder: address), and 'Password' (value: test). At the bottom left is a 'Go Back' button, and at the bottom right is an 'Update Account' button. A small circular icon with a speech bubble symbol is located in the bottom right corner of the page area.

First Name	Ryan
Last Name	Zhao
Email	ryanzhaors@qq.com
Phone	0466012060
Address	address
Password	test

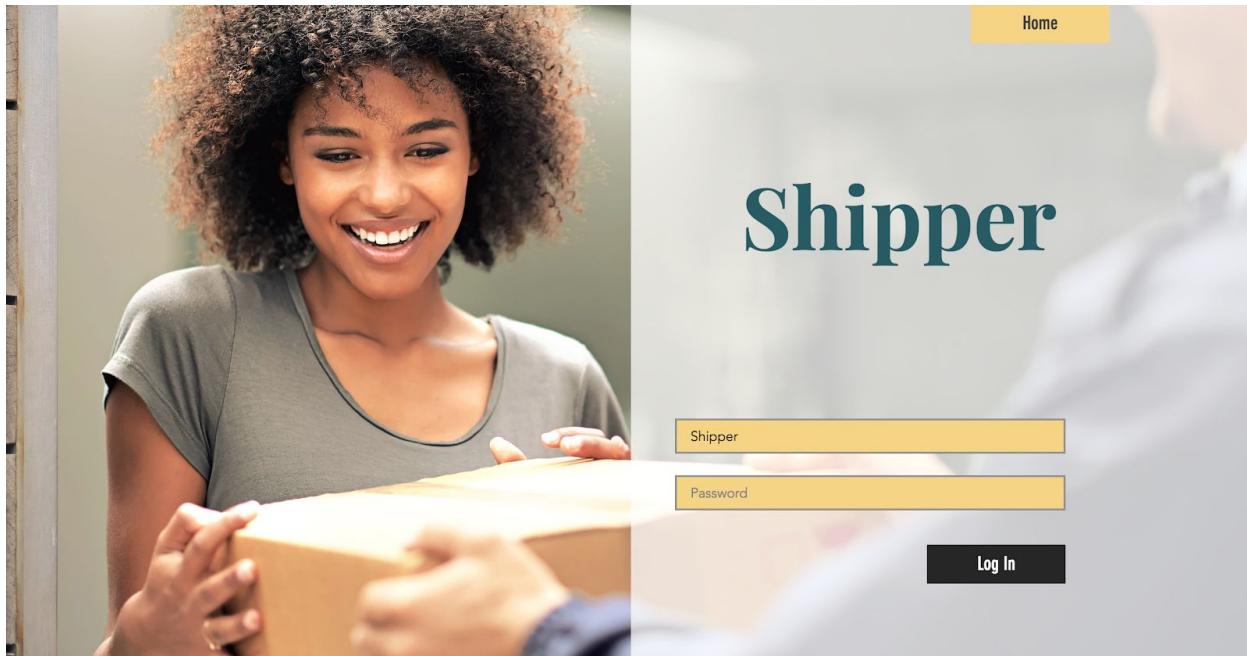
Go Back **Update Account**

This is the account information page for users to update their account information. From this page, the website will perform differently by clicking different buttons:

- *User main Page* --by clicking 'Go Back' without updating information
- *User main Page* --by clicking 'Update account' with updated information

Note: The input field of first name, last name, phone, and address is able to be modified. However, since email is the unique identifier, email cannot be modified, and due to the restriction of Wix Member System, the password of a member cannot be modified.

11.0 Shipper Log-In Page



This is the login page for shipper.

From this page, users can go to the following directions by different operations:

- *Home Page* --by clicking 'Home' button
- *Shipper Page* --by clicking 'Log In' after filled in correct shipper username and password

*Note: This page is only for shipper. The username, Shipper, is **prefixed**. The password is **Shipper**, too.*

12.0 Shipper Page for Selecting Bookings



Booking number

24344713-b43f-49ae-9b10-9f980e8adafb

Select

Booking number

84290780-b4e2-4486-9d90-9f65c14463bd

Select

Booking number

2cac68f7-efc0-423e-b65c-196347c19f15

Select

This page is for shipper to select a booking order to modify the information of that order. From this page, Shipper can go to the following direction after clicking ‘Select’ button in a row of the list:

- *Booking Detail Page* for Shipper

Note: The page shows a list of Booking IDs which are placed by all the users.

14.0 Shipper Page for Editing ACKs



Booking number 24344713-b43f-49ae-9b10-9f980e8adafb

Status

To be Approved
 Request Accepted
 Pick-up Scheduled
 To be Shipped
 Arrived at Destination
 Delivered
 Delivery Delayed

Pick-up Date 10/04/2018

Pick-up Time

Morning (9am - 11am)
 Noon (11am - 2pm)
 Afternoon (2pm - 5pm)

Departure Date 10/12/2018

Arrival Date 10/26/2018

Cost per box 50

Number of boxes 10

HBL Number 123

Message (optional)
qwqw

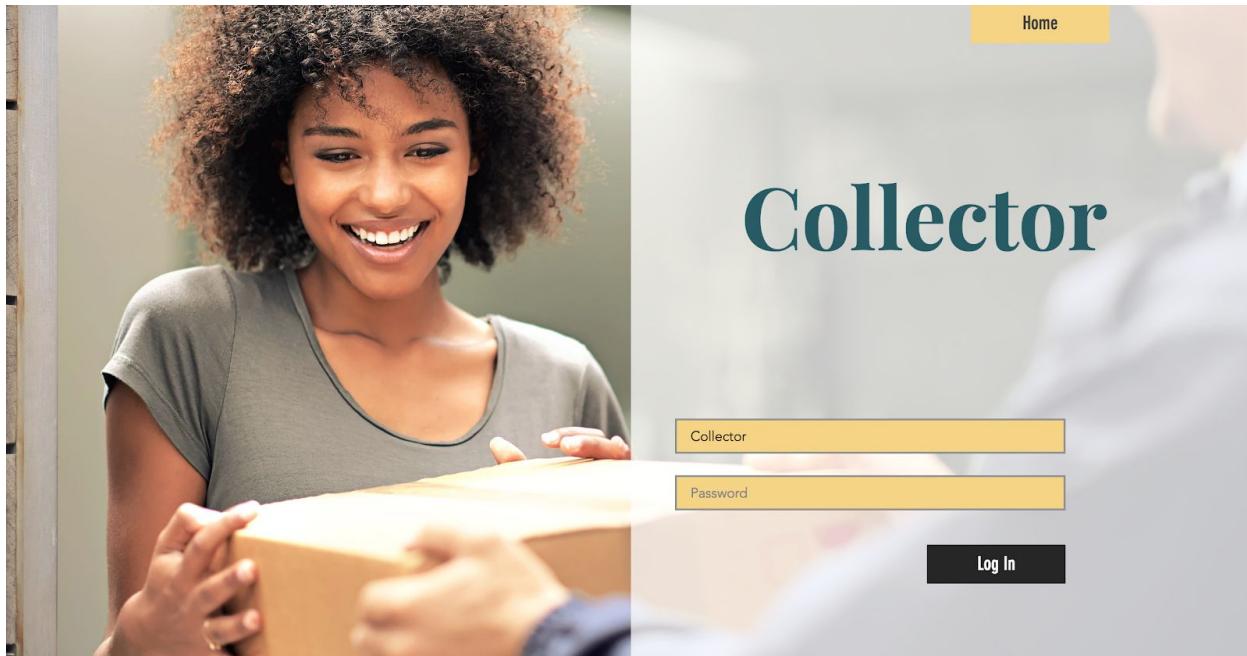
Back **Save and Send Email**

In this page, shipper can edit the information of a booking order.

From this page, Shipper can make different operation by clicking different buttons:

- *Shipper Page* --by clicking ‘Back’
- Send an email to the certain user, update the order, and go back to Shipper Page

15.0 Collector Log-In Page



This is the login page for collector.

From this page, users can go to the following directions by different operations:

- *Home Page* by clicking 'Home' button
- *Collector Page* by successful login

*Note: This page is only for collector. The username, Collector, is **prefixed**. The password is **Collector**, too.*

16.0 Collector Page for Selecting Bookings



Booking number

24344713-b43f-49ae-9b10-9f980e8adafb

Select

Booking number

84290780-b4e2-4486-9d90-9f65c14463bd

Select

Booking number

2cac68f7-efc0-423e-b65c-196347c19f15

Select

This page is for Collector to select a booking order to check the information of that order. From this page, Collector can go to the following direction after clicking ‘Select’ button in a row of the list:

- *Booking Detail Page* for Collector

Note: The page shows a list of Booking IDs which are placed by all the users.

17.0 Collector Page for Checking Requests

The screenshot displays a web-based application interface for a 'Collector' user. At the top right, there is a yellow 'LOG OUT' button. The main content area features a photograph of four people (two men and two women) sitting around a table in a modern office or meeting room, looking at a laptop together. Overlaid on this image is the word 'Collector' in large, white, sans-serif letters.

<i>Booking number</i>	24344713-b43f-49ae-9b10-9f980e8adafb
<i>Status</i>	To be Shipped
<i>Pick-up Date</i>	Thu Oct 04 2018
<i>Arrival Date</i>	Fri Oct 26 2018
<i>Cost</i>	500
<i>HBL Number</i>	123

Message (optional)

qwqw

[Back to Collector](#)

In this page, Collector can check the information of a booking order. From this page, Collector can go to the following direction after clicking 'Back to Collector' button:

- *Collector Page* --by clicking 'Back to Collector'

Note: Collector cannot edit the information.

Appendix J: User Acceptance Testing

In the User Acceptance Testing(UAT), the team designed and implemented detailed testings on website formats and business functions. Appendix H Preliminary Testing Cases forms the test basis of UAT.

1.0 Test Scope

In-scope Features

- A. Feature ID 1 - User registration & Corresponding interface
- B. Feature ID 2 - User Login & Corresponding interface
- C. Feature ID 3 - Information Update & Main dashboard
- D. Feature ID 4 - User Booking Creation & Format
- E. Feature ID 6 - Quote Interface
- F. Feature ID 7 - Database(User, Shipper, Collector, Booking)
- G. Feature ID 8 - User booking history viewing and manipulation
- H. Feature ID 9 - Shipper ACK edition
- I. Feature ID 10 - the Automatic Email system
- J. Feature ID 15 - Booking ID query

Out-scope Features

- A. External payment platform
- B. Server Stability

2.0 Acceptance criteria

- A. Scenario - Customers register information to the system

Given I am an unregistered customer and I am on the registration page. When I fill in all the information correctly, the registered email not taken and I click submits button, then I shall get a success message and the system signs me in.

When I miss some fields or type invalid information or the email is already taken, then I shall get messages indicating what's going wrong and stay in the registration page.

- B. Scenario - Customers/Shipper/Collector sign in to the system

Given I am a registered user and I am on the login page.

When I type correct username and password and click the login button, then the system should sign me in.

When I type incorrect username and password and click the login button, then the system should tell what's going wrong and stay in the login page.

- C. Scenario - Customers track package

Given I am on the home page.

When I type correct booking ID and click Track My Package button, then the system should show me the package status.

When I type incorrect booking ID and click Track My Package button, then the system should tell me the ID not exist.

D. Scenario - Customers navigation

Given I am a sign-in user and I am on the user main page.

When I click the navigation button, then the system shall go to the corresponding website page and navigation buttons are still on the page and are working.

When I click the LOG OUT button, then the system shall log me out and go to the homepage.

E. Scenario - Customers update information

Given I am a sign-in customer and on the Update Account page.

When I edit my information and click the update button, then the system should show the success message and go to user main.

When I abandon editing and click go back button, then the system should show the success message and go to user main.

F. Scenario - Customers view history order

Given I am a sign-in customer who made bookings before and on the booking history page. When I click an entry, then the system will show me all the booking information but I can not edit them, and when I click Back to History, then the system will go back to order history page.

G. Scenario - Customers create a new booking

Given I am a sign-in customer and on the New Booking page.

When I fill in all required information with valid input and select prompted dates and click Get a Quote button, then the system will show me the quote page which contains all correct information I entered and the system calculated the cost.

When I miss some fields or give invalid inputs and click the button, then the system will stay on the page and show me the error message.

H. Scenario - Customers view quote

Given I have already entered all information on a new booking and on the quote page.

When I click the Paid button, then the booking should be created and the system should show a success message and go back to the new booking page.

When I want to edit some information and click the goBack button, the system should not create the booking and go back to the new booking information page.

I. Scenario - Super User main page

Given I am a superuser(Shipper/Collector) and on the main page, I can see all the bookings of all users.

When I select one particular booking and click the Select button, then the system will show me all the related information about that booking but I can not edit the information if I am a collector.

When I am a shipper and select one particular information, then the system will show me all the related information and I can edit part of the information if I want. When I edit part of the information and click Save and Send Email, then the change will be saved, all users can see the change and change notification email will be sent to all related parties.

3.0 Test Scripts

3.1 Form-Based Test Script

To ensure that each page satisfies the requirements of the project guideline, it is important to perform the test. The testing basically checks all buttons, input boxes, selection buttons, and date picker.

Pages are grouped into different modules for the simplicity of the illustration. Testing for each module is shown below.

Module ID	Module name
3.1.1	Home, Customer Login, Shipper Login, Collector Login, Tracking Status, Customer Register, Update Account
3.1.2	User Main, Shipper Main, Collector Main, Booking History
3.1.3	New Booking
3.1.4	Quote
3.1.5	ACK, Shipper Booking Details, Collector Booking Details

3.1.1 Module Name:

Home, Customer Login, Shipper Login, Collector Login, Tracking Status, Customer Register, Update Account.

Form-Based Testing Component	Pass/Fail	Date	Test by	Comment
Word fonts and colors are accords with the website theme.	Pass	12/10/2018	Christina Xu	

Titles identify each window correctly, and field labels appropriately.	Pass	12/10/2018	Christina Xu	
Warning messages are accurate when needed.	Pass	12/10/2018	Christina Xu	Error messages are in red color. When the user input is wrong, the corresponding error message will be shown on the screen.
Buttons displayed at the correct position as needed.	Pass	12/10/2018	Christina Xu	

3.1.2 Module Name:

User Main, Shipper Main, Collector Main, Booking History

Form-Based Testing Component	Pass/Fail	Date	Test by	Comment
Word fonts and colors are accords with the website theme.	Pass	12/10/2018	Christina Xu	
Titles identify each window correctly, and field labels appropriately.	Pass	12/10/2018	Christina Xu	
Buttons displayed at the correct position as needed.	Pass	12/10/2018	Christina Xu	Place the 'Log out' button on top of the screen. It is necessary for users to safely log out.

3.1.3 Module Name:

New Booking

Form-Based Testing Component	Pass/Fail	Date	Test by	Comment
Word fonts and colors are accords with the website theme.	Pass	12/10/2018	Christina Xu	

Titles identify each window correctly, and field labels appropriately.	Pass	12/10/2018	Christina Xu	
Date formats correctly (Weekday MON-DD-YYYY).	Pass	12/10/2018	Christina Xu	By clicking the select date table, the correct format of the date will display on the screen.
Warning messages are accurate when needed.	Pass	12/10/2018	Christina Xu	The error message will notice user which input is wrong.

3.1.4 Module Name:

Quote

Form-Based Testing Component	Pass/Fail	Date	Test by	Comment
Word fonts and colors are accords with the website theme.	Pass	12/10/2018	Christina Xu	
Buttons displayed at the correct position as needed.	Pass	12/10/2018	Christina Xu	To avoid making a real transaction online, by clicking the ‘Paid’ button, the system assumes that the customer paid, and return the success notice.

3.1.5 Module Name:

ACK, Shipper Booking Details, Collector Booking Details

Form-Based Testing Component	Pass/Fail	Date	Test by	Comment
Word fonts and colors are accords with the website theme.	Pass	12/10/2018	Christina Xu	
Date formats correctly (Weekday MON-DD-YYYY).	Pass	12/10/2018	Christina Xu	

Buttons displayed at the correct position as needed.	Pass	12/10/2018	Christina Xu	Place the 'Log out' button on top of the screen.
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3.2 Business Process Test Script

In order to make sure all of the functional requirements are working correctly, all test cases for each User Security level will be completed in this section. By doing this, each Security Level has different access to different functions. The User Security level in this project is Shipper, Collector, and User.

Module ID	Module name	Security Level
3.2.1	Customer Register	Customer
3.2.2	Customer Login	Customer
3.2.3	New Booking	Customer
3.2.4	Get Quote	Customer
3.2.5	Booking History	Customer
3.2.6	Update Account	Customer
3.2.8	Shipper Login	Shipper
3.2.8	Shipper ACK	Shipper
3.2.9	Shipper ACK editing	Shipper
3.2.10	Collector Login	Collector
3.2.11	Collector Viewing	Collector

3.2.1 Module Name:

Customer Register User Security Level: Customer

Business Process Testing Component	Pass/Fail	Date	Test by	Comment

1. Does the home button navigate to the Home page?	Pass	12/10/2018	Xinjie Lan	
2. Is the correct module name displayed at the top of the window?	Pass	12/10/2018	Xinjie Lan	
3. Is the register button functionally working?	Pass	12/10/2018	Xinjie Lan	
4. Is the content of register form correct?	Pass	12/10/2018	Xinjie Lan	
6. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
7. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	
8. Does the About Us appear at the bottom of the page?	Pass	12/10/2018	Xinjie Lan	

3.2.2 Module Name:

Customer Login User Security Level: Customer

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Does sign-in button in the homepage navigate to the correct module?	Pass	12/10/2018	Xinjie Lan	
2. Is the correct module displayed at the right of the window?	Pass	12/10/2018	Xinjie Lan	
3. Are the Log-In and home button available?	Pass	12/10/2018	Xinjie Lan	
4. Access to the application not allowed unless the user is set up in Staffs and as an active	Pass	12/10/2018	Xinjie Lan	

application user (as defined in user detail maintenance)				
5. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
6. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	

3.2.3 Module Name:

New Booking User Security Level: Customer

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Does New Booking button navigate to the correct module?	Pass	12/10/2018	Xinjie Lan	
2. Is the correct module name displayed at the top of the window?	Pass	12/10/2018	Xinjie Lan	
3. Is the get quote button available and functional working?	Pass	12/10/2018	Xinjie Lan	
4. Are the appropriate menu options available, (based on the security matrix)?	Pass	12/10/2018	Xinjie Lan	
5. Access to the application not allowed unless the user is set up in Staffs and as an active application user (as defined in user detail maintenance)	Pass	12/10/2018	Xinjie Lan	
6. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
7. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	
8. Does the menu bar appear at the top of the page?	Pass	12/10/2018	Xinjie Lan	

3.2.4 Module Name:

Get Quote User Security Level: Customer

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Does get quote button from new booking page navigate to the correct module?	Pass	12/10/2018	Xinjie Lan	
2. Is the correct module name displayed at the top of the window?	Pass	12/10/2018	Xinjie Lan	
3. Are there three options for customer to select?	Pass	12/10/2018	Xinjie Lan	Options for customer are: Go back, Paid, Buy Now
4. Are the appropriate menu options available, (based on the security matrix)?	Pass	12/10/2018	Xinjie Lan	
6. Does the quote information display correctly?	Pass	12/10/2018	Xinjie Lan	
7. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	
8. Does the menu bar appear at the top of the page?	Pass	12/10/2018	Xinjie Lan	

3.2.5 Module Name:

Booking History User Security Level: Customer

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Does Booking history button from menu bar navigate to the correct module?	Pass	12/10/2018	Xinjie Lan	

2. Is the correct module name displayed at the top of the window?	Pass	12/10/2018	Xinjie Lan	
3. Are booking histories listed for customer to select?	Pass	12/10/2018	Xinjie Lan	The display of booking history is based on their booking number
4. Are the appropriate menu options available, (based on the security matrix)?	Pass	12/10/2018	Xinjie Lan	
6. Is the select button functional working?	Pass	12/10/2018	Xinjie Lan	
7. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	
8. Does the menu bar appear at the top of the page?	Pass	12/10/2018	Xinjie Lan	
9. Does the Back to History button working correctly?	Pass	12/10/2018	Xinjie Lan	

3.2.6 Module Name:

Update Account User Security Level: Customer

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Does Update Account button navigate to the right page?	Pass	12/10/2018	Xinjie Lan	
2. Is the correct module name displayed at the top of the window?	Pass	12/10/2018	Xinjie Lan	
3. Are the Name, Phone, Address editable?	Pass	12/10/2018	Xinjie Lan	
4. Are the Email , Password not editable?	Pass	12/10/2018	Xinjie Lan	

6. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
7. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	
8. Does the About Us appear at the bottom of the page?	Pass	12/10/2018	Xinjie Lan	

3.2.7 Module Name:

Shipper Login User Security Level: Shipper

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Does the sign-in button in the homepage navigate to the correct module?	Pass	12/10/2018	Xinjie Lan	
2. Is the correct module displayed at the right of the window?	Pass	12/10/2018	Xinjie Lan	
3. Are the Log-In and home button available?	Pass	12/10/2018	Xinjie Lan	
5. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
6. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	

3.2.8 Module Name:

Shipper ACK User Security Level: Shipper

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Do the bookings show correctly?	Pass	12/10/2018	Xinjie Lan	Showing booking numbers here
2. Is the correct module displayed at the right of the window?	Pass	12/10/2018	Xinjie Lan	
4. Does the select button successfully navigate to order page	Pass	12/10/2018	Xinjie Lan	
5. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
6. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	

3.2.9 Module Name:

Shipper ACK editing

User Security Level: Shipper

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Are the status, pick-up date, pick-up time, message and HBL editable?	Pass	12/10/2018	Xinjie Lan	
2. Is booking information from the customer showing correctly?	Pass	12/10/2018	Xinjie Lan	
4. Does the save and send email button successfully work correctly?	Pass	12/10/2018	Xinjie Lan	
5. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
6. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	

3.2.10 Module Name:

Collector Login User Security Level: Collector

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Does the sign-in button in the homepage navigate to the correct module?	Pass	12/10/2018	Xinjie Lan	
2. Is the correct module displayed at the right of the window?	Pass	12/10/2018	Xinjie Lan	
3. Are the Log-In and home button available?	Pass	12/10/2018	Xinjie Lan	
5. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
6. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	

3.2.11 Module Name:

Collector Viewing

User Security Level: Collector

Business Process Testing Component	Pass/Fail	Date	Test by	Comment
1. Does the select button successfully navigate to order page	Pass	12/10/2018	Xinjie Lan	
2. Is booking information from the customer showing correctly?	Pass	12/10/2018	Xinjie Lan	
3. Is the Back to Collector button available?	Pass	12/10/2018	Xinjie Lan	
5. Does the message/text box display text correctly?	Pass	12/10/2018	Xinjie Lan	
6. Do the graphics appear clearly and display correctly?	Pass	12/10/2018	Xinjie Lan	

Reference:

1. [Online]. Available:
https://www2.gov.bc.ca/assets/gov/british...our.../moe_mal_uat_template.doc. [Accessed: 12-Oct-2018].