

The University of Melbourne
School of Computing and Information Systems
SWEN90016 Software Processes and Management
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JJFresh – Project Management Plan

Version 1.2

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Executive Summary

The project's goal is to provide Jess and James with an online store, which is expected to increase their revenue. Jess and James are the Business Owners of the project. The teaching team of SWEN90016 would take the role of Subject Matter Expert to help the student team. The customers of JJFresh would be our main external stakeholders.

All the in-scope and out-scope requirements of the project have been defined and confirmed by Jess and James. Base on the consideration of flexibility and the speed of website delivery, Scrum is chosen as our software development cycle model.

The business value of this project is to meet the need of the people who want to buy fruit and vegetables from JJFresh but cannot go during the business hours of the physical store. The increase in orders would also increase the revenue of the store. Moreover, the teaching team and the student team can gain benefits from this project. The risks of the project have been analyzed, and possible solutions for them are also provided in this report.

The technology we choose to implement the online store is *Wix*. The student team is a virtual team and the basic communication tools are *Zoom* and *Slack*. Our communication plan is detailed.

The project development will take at most 5 weeks, from April 27 to May 8, 2020. We plan to finish the project within two sprints, each last two weeks. The fifth week is only used for flexible control.

The development of the project will not consume any funds. But if Jess and James want to upgrade their website to Wix Premium, they would have to pay 10 - 27 US\$ per month. It depends on the plans they choose.

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1. Introduction

1.1 Purpose of document

This document provides details about how the development team plans, implements, and monitors the development of the JJFresh online store.

According to the project requirements specification, this document describes in detail the scope of the project and possible risks, and how to control it. The technologies that will be used throughout the development process are defined by the development team, while the project plan containing the development team's size and project needs would be defined by the Scrum master.

This document will serve for all parties involved in the entire development cycle, such as Scrum Master, Product Owner and developers.

1.2 Audience of document

{TODO}

1.3 Evolution of document

All of the people in the student team participated in the preparation of the document. Yicun Tian is responsible for writing the Executive Summary, Introduction (Chapter 1), Roles and Responsibilities (Section 3.1), Communication Plan (Section 3.2), and Risk management (Section 3.3). Hongzhang Li is the person who wrote the Project Information part (Chapter 2). Pin Wang and Chongjing Zhang, as developers, are responsible for defining the technology used to implement the project (Section 3.4). Zhangfeng Qiu, who served as Scrum Master, provide detail about the Project Planning (Section 3.5) and proofread all content in the document. The evolution of document is shown in Table 1.1.

Version	Created by	Date created	Comments
Version 1.0	Yicun Tian, Hongkang Li, Pin Wang, Chongjing Zhang, Zhangfeng Qiu	April 27, 2020	In this version, the student team cooperated together to complete Chapter 1 to Chapter 3 of the Project Management Plan, including the definition of key stakeholders, Scope and SDLC of the project, evaluation of business value, constraints, the definition of people's role in the team, communication plan, risk management, definition of the technology used in the project and project planning.

Version 1.1	Yicun Tian, Hongkang Li, Pin Wang, Chongjing Zhang, Zhangfeng Qiu	May 18, 2020	In this version, the document is updated based on Rajesh Chittor's feedback and the actual situation of the project. Section 4.1 is now included in the document. The detail of the update history is shown in Section 1.3.1.
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Table 1.1: Evolution of document

1.3.1 Version 1.2 update history

{TODO}

1. Rewrite the Executive summary. Remove lengthy expressions.
2. Redesign all the table in the document. Increase readability and change the date format.
3. Provide names of the people in the teaching team and the student team.
4. Move the origin Section 1.2 to Section 1.1. Mention who the document will serve in Section 1.2
5. Add one suppliers into key stackholders in Section 2.1 and provoid benefit analysis for them in Section 2.4.
6. Fix mistakes about the advantage of Scrum in Section 2.3.
7. Change the roles in Section 3.1. Now, Yicun Tian and Hongkang Li would play the role of Product owner and the teaching team would play the role of subject matter expert.
8. Provide detail about the virtual meeting rooms in Section 3.2.
9. Provide specific time for communication plan in Section 3.2.
10. Add Emergency Meeting and Daily communication into the communication Matrix in Table 3.2.
11. Change the probability of Risk 1 in Section 3.3.1. Improve the risk triggers of risk 1 and risk 4 to make a more comprehensive risk impact analysis.
12. Add reference for Bang-for-the-Buck to the footnote.
13. Redefine the value point and story point in the product backlog and provide milestone definition in Section 3.5. Remove tasks definition in Table 3.6.
14. Re-estimate the velocity of the development team based on the first sprint feedback.
15. Update the Second Sprint Plan in Section 3.5.6.
16. Provide detail about the burndown chart, meeting record and product artefacts in Chapter 4.

2. Project Information

2.1 Key Stakeholders

The key stakeholders here are classified according to their relevant interests. Different groups of stakeholders below get different benefits from the project. The detail of the roles and responsibilities definition would be discussed in Section 3.1.

Stakeholders	Internal/ External	Influence on Project
Jess and James	Internal	Jess and James are the people who defined the requirements of the project. They will not directly participate in the development of the online store website. They are users of the website and can provide feedback to the development team during the development process.
The teaching team: <ul style="list-style-type: none">• Marion Zal• Doc Wallace• Rajesh Chittor Sundaram• Esther Rotimi• Subramaniam Ramasubramanian• Chong Kuok• Saksham Agrawal	Internal	The teaching team of SWEN90016 is playing the role of Product Owner in the project. They are responsible for contact with Jess and James and understand their need. They cooperate with the Scrum master of the project and help define the product backlog. Also, they give advice and feedback to the student team during the development process.
The student team: <ul style="list-style-type: none">• Yicun Tian• Hongkang Li• Pin Wang• Chongjing Zhang• Zhangfeng Qiu	Internal	The student team cooperates as a Scrum team in the project. They are responsible for both planning and developing the online store project.
Customers	External	The satisfaction of the customers is an important factor for project success. The main source of website revenue comes from them. Their feedback can help the development team improve the application.

Suppliers	External	The satisfaction of the customers is an important factor for project success. The main source of website revenue comes from them. Their feedback can help the development team improve the application.
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Table 2.1: Stakeholder Register

2.2 Scope

2.2.1 What is in-scope?

[TODO]: This has been written exhaustively, but remember each of these requirements should be listed separately since they form an important part in the final acceptance and testing of the product. For example, there are two different login functionalities, one for admin and one for customers. You can mention them as different requirements under login system. Each of the requirements should be simple, concise and be verifiable. Example 1: The system shall provide a UI for the customers to login into the system by entering a user name and a password; Example 2: The system shall provide a UI for the customers to login into the system by entering a user name and a password;

1. **Customers Login functionality:** Users need to register an account with personal information for the first time. They should be able to log in with an email address and a password in the UI provided by system. After logging in to the online store website, they can manage their orders. The owners of JJFresh should have an admin account to manage all the orders. Both customer account and admin account would be accessible from a single URL.

High priority: An online store website is not only for browsing information but also a platform for trading fruits and vegetables. Without a Login system, customers can not place their orders.

2. **Admin Login functionality:** Admin, Jess and James, also need to login to the online store to manage all the orders. They are also be able to login with an email address and a password by a UI provided by system. Admin account may be register in the background when the online website be finished.

High priority: admin login functionality offers the way to let Jess and James manage all the orders.

3. **Management of personal information:** Users should be able to add or edit their personal information. The name, home address, and upon three multiple contact phone numbers are included in the personal information.

High priority: If the customers change their phone number or address, this function is important to avoid some trouble caused by outdated information. Without this feature, Jess and James may deliver products to the wrong address and cannot contact the buyer.

4. **Commodity display system:** Website should display all type of the products with different size and price to the users whenever they are going to purchase or just browse it. In initial stage, JJFresh provide three options for products, the namely fruit box, vegetable box and fruit and vegetable box. Each product has three size, small, medium and large.

High priority: User should know which products are sold in this online store and its size and price. Purchase cannot be made without this function because customers do not even know which fruit and vegetable they can buy.

5. **Delivering time booking system:** Customers should be able to choose a day and time for delivery. Delivery options are in hour blocks between 4pm and 7pm. Bookings should be available for the next 7 days only. Only two bookings are allowed in a particular hour. Booking system is required to avoid date conflict and feasible delivery solution.

High priority: JJFresh online store offers delivery service, the basic function of an online store. Without delivery, customers will not get their orders. If they must collect their orders in person, the online store is meaningless.

6. **Order management system:** Users should be able to place their orders after selecting what they want. If customers want to modify an order, they will need to cancel the existing order and recreate the order. Jess and James can manage these orders in the website background.

High priority: It is the basic part of the purchase function. An online store cannot do any business without an order management system.

7. **Message confirmation function:** After placing the orders, Jess and James will deal with the orders. If the orders are confirmed, a message will be sent to the users to let them know their orders are confirmed.

High priority: Confirmation system is the important part in the business online. If the customers place the order while the store owner ignores it, they will never know whether their orders are confirmed or not without confirmation message system.

8. **Database system** A database system that can store information about users, products, and orders is required.

High priority: An online store is a type of software products that need a database system to store more and more data.

2.2.2 What is out-of-scope?

The features in the future enhancements are out-of-scope:

1. An online payment system is not included in the initial development of the project. The physical delivery details need to be considered by Jess and James.
2. No AI solution would be provided to help improve the delivery process.
3. Adding multiple bookings for the same time slot is not currently allowed. Only two bookings are allowed in a particular hour.

Also, the features below are out-of-scope:

1. No navigation system on delivery is included. The system will not verify the authenticity of the address. Jess and James have to find their way to their customers' addresses themselves.
2. No delivery distance calculate function would be provided. The system will not judge whether the address is too far, so Jess and James have to decide whether they would deliver to an address or not.
3. Communication service with customers except confirmation message sending is not included. Jess and James have to decide how to communicate with their customers themselves.

2.3 Delivery approach

The delivery approach we choose for our project is **Scrum**, an agile method that can provide high flexibility and quick delivery. Our decision is based on the following reasons.

1. Scrum can provide an incremental delivery system to help the JJFresh online store retain flexibility while continually producing outcomes. As each sprint backlog represents a new release of the product, the sprint process provides an increment delivery system, which can shorten the time for saleable product delivery. The sprint review in the Scrum process can help the software development meet the requirement of the stakeholders. Also, the sooner the application enters the market, the sooner the project team can get feedback from the users to improve their product, which can help improve the user experience. Clients are continuously involved during every stage. And it can reduce waste and rework and increase the satisfaction of clients.
2. The sprint process in the Scrum model can provide regular adaptation to changing circumstances. Unlike the Waterfall model, which is very difficult to move back to makes changes in the previous phases, using Scrum would make the development of the JJFresh online store website able to adapt to unforeseen circumstances, allowing for changes to be easily incorporated if required.
3. By doing sprint review and sprint retrospective at the end of each sprint, the client and team know exactly what is complete and what is not. This reduces the risk in the development process.
4. Scrum intends small or mid-sized dedicated teams with high coordination, which is suitable for our team with five members. The Waterfall model, which involves large teams and lack of coordination among team members, can not meet our needs.

2.4 Business Value

JJFresh is currently busy in the morning but almost empty in the afternoon. The deployment of this project will keep JJFresh's existing customers who shop in the morning and shift the afternoon business hours from offline to online, which offers delivery service for current and potential customers who cannot go to JJFresh store at that time. The online store will operate 24 / 7, which is much longer compare to the old business hours, thus provides customers with the convenience of placing orders at any time. With these advantages, the online store project would attract more customers for JJFresh. The increase in customers can increase fruit and vegetable orders, and therefore help Jess and James gain more financial benefits and avoid JJFresh from being closed. The financial and Non-Financial benefits for different stakeholders are shown in Table 2.2.

Stakeholders	Financial benefits	Non-Financial Benefits
Jess and James	Jess and James are the business owners of the JJFresh online store project. The success of the project can help them change their business model. They would gain more customers due to the extension of the business model. Also, the increase in customers would increase the number of orders, which can increase their revenue.	They can gain experience in operating an online fruit shop. The online store website can also increase the chance of JJFresh being searched by a search engine of a browser, which can improve the exposure, thereby improving their brand awareness.
The teaching team	The teaching team of the Software Processes and Management subject is employed by the school. They can get salary by guiding students.	Teaching students in this project can increase their experience in teaching and management.

The student team	If the project achieves commercial success, students may receive financial awards from Jess and James.	They would gain software development experience from the project, which can increase their project experience and help boost their CV. Also, working as a team can improve their teamwork ability.
Customers	For the customers who are used to buy fruits from JJFresh, home delivery can save them time and money. They don't need to spend money on transportation to jjfresh. Of course, the delivery fee must be considered. But it would be a trade-off.	Customers would be able to buy fruits and vegetables with high quality in a more convenient way. Also, for unforeseen circumstances like Covid-19, buying online can reduce their unnecessary travel and keep them safe.
Suppliers	{Todo}	{Todo}

Table 2.2: Business Value

2.5 Constraints

- Team members are lack of experience in Scrum. Scrum is an Agile process and is difficult to do without experience, especially an experienced Scrum master. The student who plays the role of Scrum master has no Scrum management experience before. There may be many problems during the development process.
- People in the development team are unfamiliar with creating a website in Wix.com. Also, students who are responsible for the implementation of the project are not full-time workers. The efficiency of their development may be low, which may result in the delay of the project.
- A virtual team may not able to follow all the processes in Scrum. Appropriate improvements and compromises would be applied to some specific processes in the Scrum. Communication in a virtual team is less frequent and less rich than face-to-face interaction. Some of the team members are not in Australia, and because of the time difference, daily Scrum will be conducted via chat, which may bring negative effects to the project.
- The tool provided by Wix.com only has limited functions, which make it impossible to achieve the requirements perfectly. And the website implement by Wix.com has poor scalability. If Jess and James want to expand their business scale, the development team may have to redevelop the entire project with other web technics.
- The delivery range of Jess and James is limited, and users who are too far away cannot get services.
- The time limit of the project is only about one month. The overall implementation of the project may not be perfect in such a short time.

3. Project Governance

3.1 Roles and Responsibilities

Roles	Member	Responsibilities
Business Owner	Jess and James	The business owners are the main Stakeholder of the team. They are responsible for determining the priority of upcoming work in the Backlog, get resources for the team, and modifying the Release Plan as necessary with the Product Owner.
Product Owner	Yicun Tian, Hongkang Li	The product owner is the spokesperson for the customer or stakeholders. Their primary responsibility is to ensure the product to-do list is transparent and clearly expressed, and everyone in the team has the same understanding of the project. Also, they are responsible for defining the product backlog with the Scrum master. They have no active role to play in daily stand-up, but they are welcome to attend.
Scrum Master	Zhangfeng Qiu	The Scrum Master is the person in charge of the Scrum process. His primary responsibility is to guide the development team and communicate with product owners in daily development activities.
Development Team Members	Pin Wang, Chongjing Zhang	The Scrum development team is composed of professionals who deliver the incremental work of "Done" products that may be released at the end of each Sprint.
Subject Matter Expert	The teaching team – mainly by Rajesh Chittor Sundaram.	The people with specialized knowledge or talent that is needed by the Team

Table 3.1: Roles and Responsibilities

3.2 Communication Plan

Firstly, as a virtual team, we mainly use *Slack* and *Zoom* for information transfer, such as publishing message notifications, file sharing, etc. The link of each *Zoom* meeting would be released by Scrum Master in the meeting channel of the project *Slack* group. The Scrum Master is responsible for reminding the team to join the meeting in time. The meeting record would be provided by the Scrum Master. The example of our virtual meeting communication system is shown in Figure 3.1.

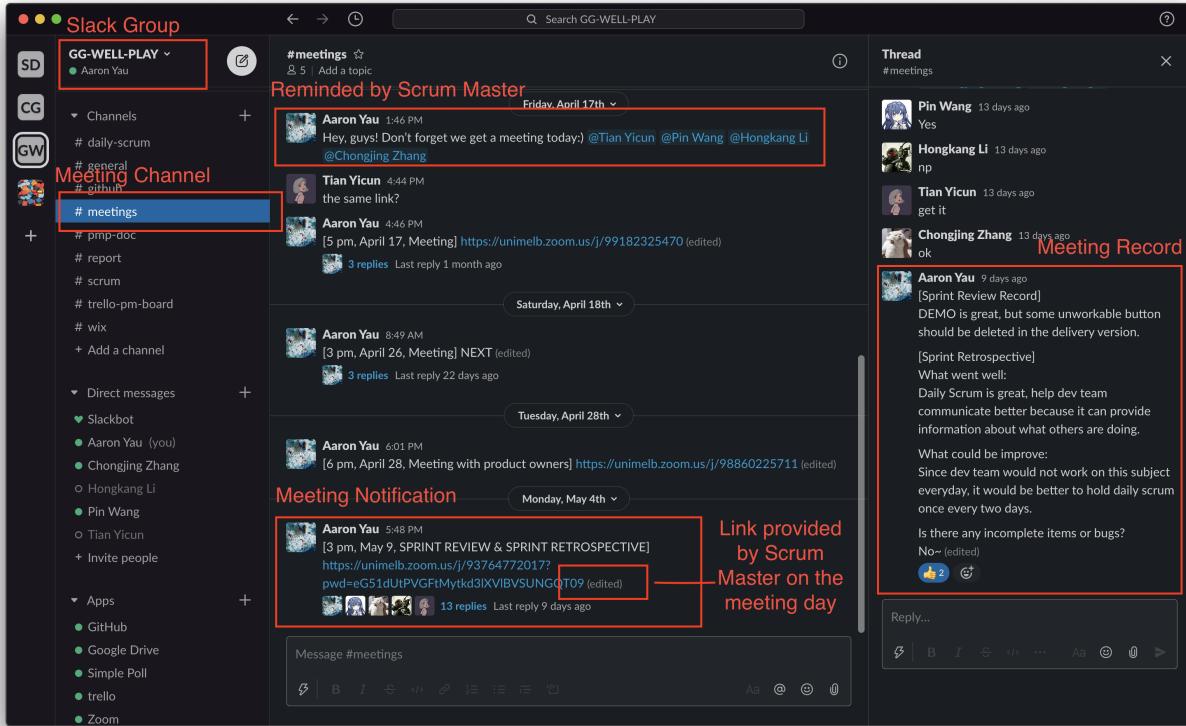


Figure 3.1: Example of our Virtual Meeting Communication System

Secondly, we use *Trello* to help manage our Agile Board. Both the Project Backlog and the Sprint Backlog are managed on the Agile Board.

Furthermore, *Github* is used to help enhance our teamwork and to manage our outcomes, such as the release of code and report.

According to the constraints of running a virtual team (Section 2.5), we adjusted some of the communication processes in Scrum, and our communications matrix is shown in table 3.2.

Processes	Stakeholder	Communication Objective	Format	Frequency	Owner	Importance
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Emergency Meeting	- Scrum Master - Everyone in the team relative to the emergency meeting	To handle any unforeseen emergency situation.	Virtual Meeting – Zoom; Formal Report	Anytime when needed	Scrum Master	High
Project Planning Meeting	- Scrum Master - Product Owner - Dev team - Subject Matter Expert	Provide definition of the product backlog and provide a project plan for the whole project.	Virtual Meeting – Zoom; Formal Report	Weekly before the first sprint	Scrum master	High
Sprint Planning Meeting	- Scrum Master - Product Owner	Provide Sprint Backlog, which selects high priority items from the Product Backlog that the Development Team can commit to delivering in a single Sprint.	Virtual Meeting – Zoom	At the beginning of each sprint: - April, 27, 2020 - May, 11, 2020 - May, 25, 2020	Scrum master	High
Daily Scrum	- Scrum Master - Product Owner - Dev team	A short meeting used to start a day's work. Since we defined our features clearly, and every progress is shown in the Agile Board in <i>trello</i> , we defined the importance of it to be medium.	Chat in the <i>daily-scrum</i> channel of <i>Slack</i>	Daily in the first sprint. In the second sprint, only held on: - Monday - Wednesday - Friday	Scrum master	Medium
Sprint Review	- Scrum Master - Business Owner - Product Owner - Dev team	Show the demo of new features to Stakeholders and get feedbacks from them.	Virtual Meeting – Zoom	At the end of each sprint: - May, 8, 2020 - May, 22, 2020 - May, 30, 2020	Scrum master	Medium

Sprint Retrospective	- Scrum Master - - Business Owner - - Product Owner - - Dev team	An examination of what went well, what could be improved, etc. To make each Sprint more efficient and effective than the last.	Virtual Meeting – Zoom	At the end of each sprint - May, 8, 2020 - May, 22. 2020 - May, 30. 2020	Scrum master	Medium
Daily communication	- Anyone in the team	For exchanging information and better cooperation	Casual Chat on Slack or personal Zoom meeting.	Any working hours when needed	Anyone in the team	Low

Table 3.2: Communication Matrix

3.3 Risk Management

3.3.1 Risk Impact Analysis Table

We follow the following scoring rules to assess the impact of each risk: (1) *no impact*; (2) *minimal impact*; (3) *moderate impact*; (4) *severe impact*; and (5) *catastrophic impact*; The Risk Impact Analysis Table is shown in Table 3.3.

Risk ID	Risk Type	Description	Probability	Impact	Justification
1	Product	Design problem - The software developed by Wix has low scalability and is un-transferable.	60%	4	Although Wix can help quickly implement some basic functions, it may not be suitable for implementing the future enhancement of the project. There are many restrictions on creating a website on Wix. For example, the starter plan (\$5 per month) doesn't remove ads from the website, and there is no unlimited bandwidth or storage plan provided. You cannot build a high availability server in Wix. The site created by Wix is not transferrable.

2	Business	Cancel orders maliciously or for no reason.	3%	5	Malicious orders may cause unnecessary waste. Some malicious buyers may intentionally create many orders and cancel them on the day of delivery. This kind of malicious actions may negatively affect the operation of the website and cause unnecessary loss.
3	Business	Email system or network system may fail.	5%	2	If the email system or network system failed, the buyer would be unable to receive a confirming email after ordering. If clients were not able to receive feedback in time, they would not know whether their orders are confirmed or not. This situation may cause adverse effects on the user experience and cause unnecessary loss.
4	Business	Service cancelation - Jess and James cannot deliver in time due to unforeseen circumstances.	5%	1	Unforeseen circumstances like Jess and James getting sick or unnecessary travel ban may result in delivery cancelation. When they are unable to deliver, they have to provide reasons for their customer and cancel the order. Even though they may lose some money and customers may be disappointed, the impact of it would be small.

Table 3.3: Risk Impact Analysis Table

3.3.2 Risk Register

Risk ID	Trigger	Owner	Response	Response Strategy Type	Resources Required

1	The new requirements proposed by Jess and James are confirmed by the development team that could not be implemented through Wix.	The development team	The development team can redevelop the whole system based on traditional web technics. Although it may take more time for the development team, it can meet the needs of users. Also, keeping more reusable interfaces during development can help reduce the impact of this risk.	Mitigate or avoid	The development team needs to keep more reusable interfaces during the development process.
2	A user creates lots of orders in a short time and then cancels them without any reason.	Jess and James	Limiting the number of times a user can cancel per week and limiting the time when the user cancels the order can help reduce the impact of this risk. For example, cancellation within 24 hours of the specified delivery time is not allowed. Also, customers would be asked to pay an advance deposit to reduce the economic loss caused by cancellation.	Mitigate	Jess and James need to spend effort to judge the reliability of the orders.
3	Users complain that no confirmation email is sent to them.	Users(Jess & James and customers)	If this risk occurs due to network failure, the system should be able to detect the user's network conditions and provide prompts automatically. The operation of the user to place an order is idempotent, which means that two identical operations will only operate once. If there is a problem with the function of auto-relying emails, the administrator of the maintenance system should be able to detect it in the background, the system is abnormal, and fix the bug in time.	Mitigate	The system needs to consume resources to detect the user's network environment and react to it.

4	Jess or James is sick, or the government announced an unnecessary travel ban policy.	Jess and James	If an unnecessary travel ban policy is announced, Jess and James have to follow the rules and cancel their orders with an apology email sent to their customers. If the order cannot be delivered in time because the seller is sick or other assets, they can decide to hire another person to deliver or cancel their orders. It would be a trade-off between economic loss and user satisfaction loss.	Mitigate or accept	Hiring others for delivery would result in an economic loss, while cancellation of orders can bring negative effects to user experience.
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Table 3.4: Risk Register

3.4 Technology

The following are some technologies we researched for web development.

Name	Responsibility	Description	Pros	Cons
HTML	Front end language	Hypertext markup language (HTML) is a standard markup language designed for documents to be displayed in web browsers and describes the structure of web pages.	{No comparison}	{No comparison}
CSS	Front end language	Cascading Style Sheets is a style sheet language that describes the presentation of documents written in markup languages such as HTML.	{No comparison}	{No comparison}
JavaScript	Front end language	JavaScript is a high-level, often just-in-time, multi-paradigm programming language that supports interactive web pages. It is an important part of web applications.	{No comparison}	{No comparison}
Bootstrap	Front end framework	Bootstrap is a front-end framework that includes HTML and CSS based design templates and JavaScript plugins. It allows users to create responsive designs easily.	Easy to use and saves time; Compatible with all browsers; Responsive structures and styles;	Load time can be slow, file size can be huge; All websites using Bootstrap look the same with out style customization;

Foundation	Front end framework	Foundation is a front-end framework that is a collection of HTML, CSS and JS. It is a easy-to-use, powerful, and flexible framework for building web applications on any device.	Fast development; Adapt to all devices; Robust grid system;	Community support is worse compare to Bootstrap; Need time to learn for beginners;
Angular	Front end framework (JS)	Angular is a development platform for building web applications using TypeScript.	Component-based architecture allows reuse of components of UI, which is easy for writing tests; High performance; Fast development;	Difficult to manage components; Need time to learn for beginners; Lacks CLI documentation;
React.js	Front end framework (JS)	React is a JavaScript library for building user interfaces. It can be used as the basis for developing web pages and mobile applications.	Components are modularized; Stable; Compatible with all browsers; Fast development;	Longer learning time than Angular; Lack of documentation; Less straightforward than pure JavaScript;
Vue.js	Front end framework (JS)	Vue.js is an progressive, incrementally adoptable MVVM JavaScript framework for building user interfaces and single-page applications.	Clear documentation, simple to study; Small and fast; Components are modularized;	Too flexible that the codes are irregular; New framework, not very mature, has a smaller community;
Java	Back end programming language	Java is a programming language that is class-based, object-oriented, and concurrent.	High-level language with simple syntax; Object-oriented programming allows reuse of codes; Supports multi-threading and distributed computing; Compatible for all platforms;	Slower than natively compiled languages; Less compact;

PHP	Back end programming language	PHP is a server scripting language and a powerful tool for web development. It is fast, flexible and pragmatic that makes it easier to make dynamic and interactive web pages.	Compatible for all platforms; Easily embedded into HTML; High scalability; Large community;	Slower than other languages; Flexibility allows bad code;
Python	Back end programming language	Python is an interpreted, high-level, general-purpose programming languages.	Easy to use and read; Multi-paradigm approach; Flexible;	Slower than natively compiled languages; Doesn't allow multi-threading;
Django	Back end framework (Python)	Django is a Python-based high-level web framework follows MTV architectural pattern. It encourages rapid development and clean, pragmatic design.	Fast processing and developing; Scalable and flexible;	Not for smaller projects; Monolithic;
Spring MVC	Back end framework (Java)	Spring MVC is a Java-based web framework that implements all the basic features of a core Spring framework like Inversion of Control and Dependency Injection.	Highly scalable and flexible; Use of modularity thus easy for testing; Large community;	Too complex, need time to learn for beginners; No clear guidelines;
Express.js	Back end framework (Node.js)	Express is a minimal and flexible Node.js web application framework that provides a robust set of features for building web applications and APIs.	Fast development; Same language can be used to code front end; Simple; Flexible	Not for heavy projects;
Wix	Web development platform	Wix is a popular cloud-based website builder. It provides an easy-to-use combination of powerful features that make it easy to build websites.	Flexible; Provides an app market; Easy to use; Massive template collection;	Loading is slow; Templates cannot be changed easily; Site cannot be transferred;

Weebly	Web development platform	Weebly is a simple site builder with templates for great design. It allows the user to edit a website without any coding skills.	Massive template collection; Built-in support for e-commerce; Easy to use; Flexible;	Cannot add functionality not provided;
WordPress	Web development platform	WordPress is a free and open source website builder.	Powerful features; Scalability; Easy to use; Massive themes; A lot of free plugins;	Loading can be slow; Need to keep website updated; Doesn't support drag and drop;

Table 3.5: Available Web Development Technologies

Among all technologies we researched above, we choose to use Wix content management system to build the website. Wix requires no coding skills or other usage of frameworks. It supports drag and drop to build web pages and provides a user-friendly UI to set the style of web components that integrates HTML and CSS from codes into user interfaces. And Wix also provides user-friendly UI to react to user actions with event handlers, this supports visualization of JavaScript. So far, Wix substitutes all front end languages or frameworks coding with user interfaces without any code. And Wix conceals the back end code in encapsulated apps, but also let users to implement customized logic using Node.js. Nonetheless, Wix offers a database operated by itself which also supports changes through graphical user interface. This database maintains the consistency of the usage of Wix platform, without extra database construction.

Compare to other website builders, Wix is more flexibly as it supports usage of Node.js to write customized backend code and take action when doing processes. And it already provides ready-made modules including online shop, user login, user permission management, and check out with credit card which can be used in developing the JJFresh website.

By using Wix, we will save time of building and integrating the frameworks and adjusting the component properties with the help of visible user interface. And since we don't have much experience in web development, Wix's characteristic that it requires as least coding as possible is suitable us, and can help us focus on project management instead of catching up with the technology stacks. Therefore, we decided to use Wix to develop the website.

3.5 Project Planning

The SDLC of our project is Scrum. Since the key requirements for the initial development provided by Jess and James are fixed, a Fixed-Scope Release Planning would be used to plan our project.

3.5.1 Product Backlog

The detail of product backlog is shown in Table 3.6. *Fabonacci sequence*¹ is used to provided relative estimation to both story point and value point.

The story points of different features are estimated by the development team and the Scrum master, based on the volume, risk, uncertainty and complexity of the features. We set the cost of the simplest feature (Edit

¹<https://www.mountaingoatsoftware.com/blog/why-the-fibonacci-sequence-works-well-for-estimating>

admin account information) to 1 story point. And then estimate all other features' cost based on comparison with the simplest feature.

The value points of the features are estimated by the product owners. We set the value of the least value feature (Edit admin account information) to 1 value point. And other features' values are estimated based on their relative value compared to the least value feature.

BFTB Score is the abbreviate of the Bang-for-the-Buck² Score, which is a way of measuring how to get the most value in the shortest time. It is used to help assess the priority of the features. The BFTB Score is calculated by the formula below:

$$\text{BFTB Score} = \frac{\text{Value Point}}{\text{Story Point}}$$

Initially, we define three milestones in our project. The first two milestones would be achieved at the end of the first sprint and at the end of the second sprint, respectively. Whether we would achieve the milestone depending on James and Jess's decision. Every milestone, we would release a runnable website to the market.

- The first milestone is to let the website go online without the function of purchase. The website can display all kinds of information about the products and provide the service of user registration. At the same time, the database is initially established to record the data of users and products.
- The second milestone is to allow users to place orders to purchase products. After this milestone, sellers can view and modify user orders. Basic requirement testing has to be passed in this milestone.
- The third milestone is to finish the future enhancement, which would not be considered in the initial development.

The features in Table 3.6 are ordered by their priority. The priorities are defined base on both the BFTB score and the development requirements. For example, even though the Database feature has a low BFTB score, because we can't record any data without it, its priority is still the highest.

Except for the three future user stories at the end of the product backlog table, all others are must-have stories because they are key requirements defined by Jess and James.

Milestone	Feature	User Story	Story Point	Value Point	BFTB Score
1	Database	As an admin, I need a database, so that I can store all the information of customers orders.	8	5	0.625
1	Admin sign in and sign out	As an admin, I want to provide my username and password, so that I can register an admin account.	2	2	1
1	Manage product infomation	As an admin, I want to manage product information, so that I can change the price or picture of my products.	5	3	0.6
1	Browse product menu	As a customer, I want a menu that shows all the products, so that I can know what products are the website selling.	8	5	0.625

²<http://leftfoot.com.au/blog/struggling-with-relative-estimation-and-why-we-dont-use-time-watch-this>

1	Customer sign up	As customers, I want to sign up for the website, so that I can a member of the website.	2	2	1
1	Customer sign in and sign out	As customers, I should be able to sign in and sign out, so that I can manage my account and orders.	3	3	1
1	Customer add and edit client information	As customers, after login, I can add or edit my information like home address, user name, email address, and contact number.	2	3	1.5
2	Add products to shopping cart	As customers, after login, I can add or edit my information like home address, user name, email address, and contact number.	2	5	2.5
2	Manage shopping cart	As a customer, I want to manage my shopping cart, so that I can remove those I don't want or add some more products.	8	5	0.625
2	Check out shopping cart	As a customer, I want to choose the day and time for delivery, so that I can get the fruit on the right day.	8	5	0.625
2	Cancel orders	As a customer, I need to get the ability to cancel an order so that I can modify an order and then re-create.	2	2	1
2	View and manage orders	As an admin, I want the specific information of the user's order, so that I can packaging user orders.	8	5	0.625
2	Register admin account	As an admin, I need to get the ability to register for a new admin account, so that I can get more admin accounts if I need them.	1	1	1
2	Edit admin account information	As an admin, I may want to edit my admin account information, so that I can change the password.	1	1	1
3	Add multiple bookings for the same slot	As an admin, I want to add multiple bookings for the same slot in the future. So that I can employ others to deliver boxes.	8	2	0.25
3	Using AI to calculate delivery routes and times	As an admin, I want to use AI technology to help me calculate an optimal route and time for delivery.	13	3	0.231
3	Extended to allow for payment online.	As an admin, I want to be paid online, so that I can save my time and improve the delivery efficiency.	13	3	0.231

Table 3.6: Product Backlog

3.5.2 Must-have Story Points

Without calculating the features needed in the future, the total number of must-have story points is 60.

$$SP_{total} = 60 \text{ (Story Point)}$$

3.5.3 Velocity Estimating (Re-estimate)

There are two developers in our team. Since both of them are students, each of them can only spend about 1.2 to 3 hours a day on the project. They can work five days a week, so the total working hours of a week are 12 to 30 hours. We simply suppose each story point to be equivalent to one hour of working time. So the min velocity (V_{min}) for a two-week sprint is about 24 story points, and the max velocity (V_{max}) is about 60 story points. And by using the formula shown below, we can get our minimum and maximum number of sprints, which are 1 and 2.5, respectively. The velocity re-estimation burndown chart is shown in Figure 3.2

$$S_{min} = \frac{SP_{total}}{V_{max}}, S_{max} = \frac{SP_{total}}{V_{min}}$$

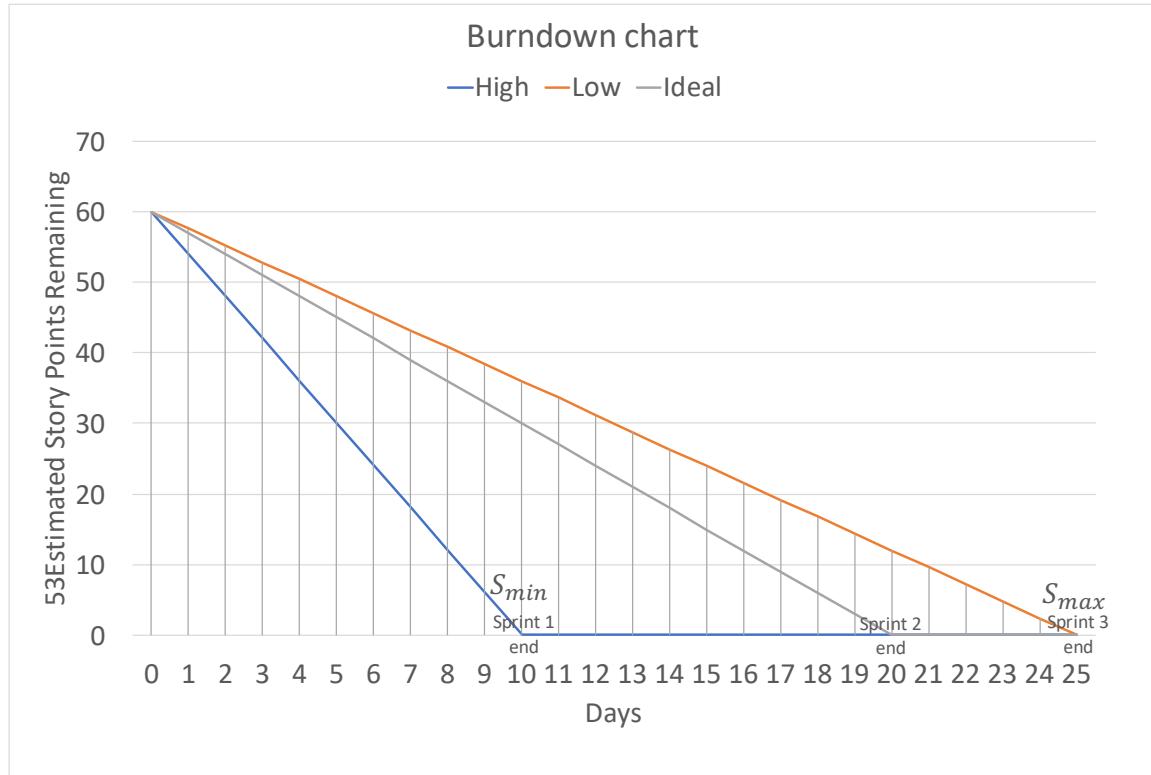


Figure 3.2: Velocity Re-estimation

3.5.4 Sprint Planning

Sprint Cycle

The development phase of our project would start on **Monday, April 25**. Since the final delivery due date of the whole project is **June 1**, we decided to divide our development into three phases, each corresponding to a sprint.

The first phase is to let the website go online without the function of purchase. The website can display all kinds of information about the products and provide the service of user registration. At the same time, the database is initially established to record the data of users and products. The first sprint will last for two weeks, **from Monday, April 27 to Friday, May 8**.

In the second phase, we need to realize the function that users place orders to purchase products, and sellers can view and modify user orders. Preliminary testing will also take place at this phase. The second sprint will last for two weeks, **from Monday, May 11 to Friday, May 22**.

The third stage is mainly based on user feedback to repair the vulnerability, carry out more tests and improve the existing functions. If some functions left over from the first two sprints are not implemented, they will also be solved in this sprint. As the project is nearing its end and there is less work left, the sprint in this phase will last only one week, **from Monday, May 25 to Friday, May 29**.

On the first **Monday of every sprint**, a Sprint Planning meeting would be held to select high priority items from the product backlog that the development team can commit to delivering in a single Sprint. The selected items would be added to Sprint Backlog.

On the last **Friday of each sprint**, a Sprint Review meeting would be held to demonstrate the new features to Stakeholders, and a Sprint Retrospective meeting would be held to review the sprint.

A 15-minute Daily Scrum would be held **everyday** in the first sprint to start up the jobs. Everyone has to share what he/she did yesterday, what he/she plan to do, and what obstacles are slowing him/her.

3.5.5 The First Sprint Plan

As mentioned in Section 3.5.4, the main goal of the first sprint is to launch a webpage where customers can browse products. Considering both the BFTB Score, which is shown in Table 3.6 and the actual development needs, the Sprint Backlog of the first sprint is shown in Table 3.7. The total velocity and the delivery value of the first sprint is 30 story points and 25 value points, respectively.

Index	Feature	Tasks	Story Point
1	Database	1.Define the order model(<i>1-hour</i>); 2.Define the user information model(<i>1-hour</i>); 3.Define the admin information model(<i>1-hour</i>); 4.Create table and relation(<i>2-hour</i>); 5.Test(<i>1-hour</i>)	8
2	Browse product menu	1.Provide a page for showing the list of the products(<i>3-hour</i>); 2.Show the types of the products(<i>1-hour</i>); 3.Show the price of the products(<i>1-hour</i>); 4.The price would change automatically(<i>1-hour</i>); 5.Show the pictures of products(<i>1-hour</i>).	8
3	Customer sign up	1.Check whether the information of the user is valid(<i>1-hour</i>); 2.Add the user to the database and send a confirming email to the new member if valid(<i>1-hour</i>).	2

4	Customer sign in and sign out	1.Sign in, check whether the user exist and whether the user's password correct(<i>1-hour</i>); 2.Sign out(<i>1-hour</i>); 3.Handle the problem of forgetting the user password (Allow password reset) (<i>1-hour</i>).	3
5	Customer add and edit client information	1.Add and edit the name, email address, home address(<i>1-hour</i>); 2.Add and edit up to three multiple contact phone numbers(<i>1-hour</i>).	2
6	Manage product infomation	1.Change the price of products(<i>1-hour</i>); 2.Change the pictures of products(<i>1-hour</i>); 3.Change the type of products(<i>1-hour</i>); 4.Add products(<i>1-hour</i>); 5.Delete products(<i>1-hour</i>).	5
7	Admin sign in and sign out	1.Sign in(<i>1-hour</i>); 2. Sign out(<i>1-hour</i>).	2

Table 3.7: The first Sprint Backlog (4.27 - 5.8)

3.5.6 The Second Sprint Plan

As mention in Section 3.5.4, the main goal of the second sprint is to allow users to place orders to purchase products. After this sprint, sellers can view and modify user orders. Basic requirement testing has to be passed in this sprint.

Following the feature development priority provided in Table 3.6, the Sprint Backlog of the second sprint is shown in Table 3.8. The total velocity and the delivery value of the first sprint is 30 story points and 24 value points, respectively.

Index	Feature	Tasks	Story Pointt
1	Add products to shopping cart	1.Select size, type and amount of the products and add them to shopping cart. (<i>2-hour</i>)	2
2	Manage shopping cart	1.Select the items to pay(<i>1-hour</i>); 2.Change the amount of items(<i>1-hour</i>); 3.Delete items(<i>1-hour</i>); 4.View the price of the items selected(<i>1-hour</i>); 5.Provide a page to show all the items in the shopping cart(<i>3-hour</i>).	8
3	Check out shopping cart	1.Choose a day and time for delivery. (<i>1-hour</i>). Only two bookings are allowed in a particular-hour.); 2.Send a confirming email to the customer(<i>1-hour</i>); 3.Show the day and time which is valid(<i>2-hour</i>); 4.Add an order to the user's order list(<i>1-hour</i>); 5.Handle synchronization problem(<i>2-hour</i>).	8
4	Cancel orders	1.Cancel order(<i>1-hour</i>); 2.Send emails to both customer and admin(<i>1-hour</i>).	2

5	View and manage orders	1. Confirm order (<i>1-hour</i>); 2. Order rank by date (<i>1-hour</i>); 3. Cancel order and provide reason (<i>1-hour</i>); 4. Provide a page to show order list with order information attach to it (<i>4-hour</i>);	8
6	Register admin account	1. Provide way for admin account registration (<i>1-hour</i>).	1
7	Edit admin account information	1. Provide way for admin account information editing (<i>1-hour</i>).	1

Table 3.8: The Second Sprint Backlog (May 11 - May 25)

4. Project Execution, Monitoring and Control

4.1 Project Status: Friday Week 9

We finished all the features required in the initial development process on May 18, 2020. However, because the document has to be updated to version 1.2 before May 23, 2020, we can't update artefacts generated by the second sprint review meeting and the second sprint retrospective to the document in this version. And we would decide whether the third sprint is needed in the comming sprint review. The online store can now be accessed on <https://pinwang4.wixsite.com/website>. It is a beautiful and well designed site, with a user-friendly interface and all the features required in the initial development. A screenshot of the homepage is available in Figure 4.6

We use a handy tool called *Trello*¹ to manage our Agile Board. The feature cards in the Agile Board are set by the Scrum Master with tasks checklist defined inside them. Students in the development team would add themselves to a specific card and move the card to the *TODO* list after the Daily Scrum standup meeting. A card is moved to *DONE* list only if all the tasks in it are finished and pass tests. The total finish story points can be quickly check in the upper left corner of the *DONE* list. By checking the card in the *DONE* list, the Scrum Master can keep track of everyone's contribution. A screenshot of the Agile Board system is shown in Figure 4.4.

The burndown chart is updated by the Scrum Master after every daily standup. By comparing the actual jagged line with the ideal schedule straight line, the Scrum Master can easily evaluate whether the development team is working efficiently, whether the sprint backlog can be finished on time and whether the progress of the project is hindered. Also, the burndown chart is used to re-estimate the velocity of the development team.

In the first sprint, we held daily scrum standup meeting every workday. But since in the first sprint retrospective, our development team said that they might not work for this subject every day and the Daily Scrum Meeting is held too often. So we change the process to be held only on Monday, Wednesday and Friday. The daily scrum meetings are thought to be very useful since it not only can help our development team to improve their work efficiency but also let other knows what they are working on and what should be solved on a specific date. As mention in Section 2.5, our team is facing some time difference problem. Daily Scrum were conducted via chat. We do it in the daily-scrum channel in *Slack*. An example of how our daily scrum standup meeting system work is shown in Figure 4.5. The meeting record is shown in Table 4.1.

At the end of the first sprint, a sprint review is held to give a demo on the product to determine what are finished and what are not. The demo is excellent, and together we find out that some unworkable buttons should be deleted in the delivery version. After the sprint review, a sprint retrospective was held to help improve the team's efficiency. All the members in the development team thought the Daily Scrum is great. However, it is held too often since they have to learn other subjects. So, we decide to hold daily scrum standup only on Monday, Wednesday and Friday in the second sprint. The Record of the first sprint review and sprint retrospective can be found in <https://www.youtube.com/watch?v=4slzV0LbUSY>.

¹To join the Agile Board: <https://trello.com/invite/b/ZqSHe7MR/9b942f7a393fb08379c206fb2064726a/spm-group-project>

4.1.1 Process Related Artefacts

Burndown Chart for the Whole Project

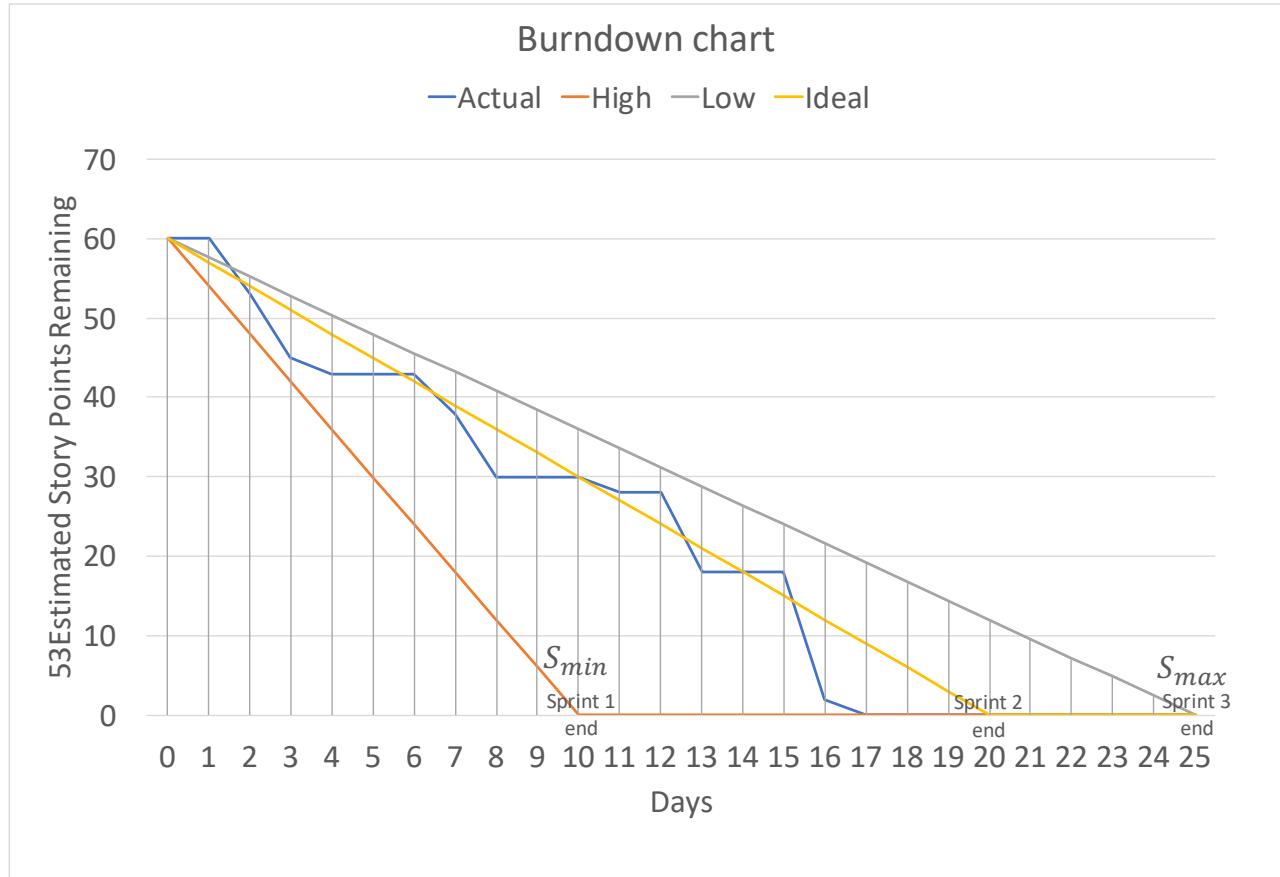


Figure 4.1: Burndown Chart of the Whole Project

Burndown Chart for the First Sprint (April, 27 - May, 8)

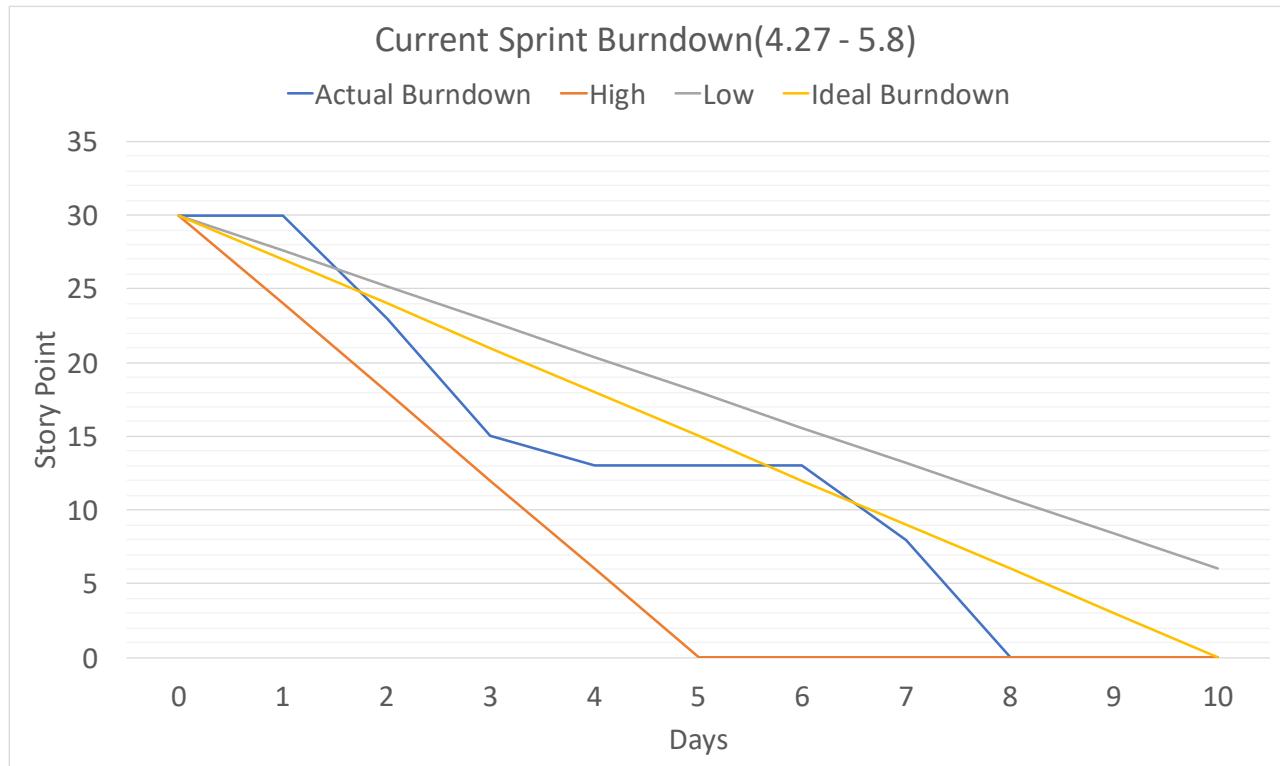


Figure 4.2: Burndown Chart of the First Sprint

Burndown Chart for the Second Sprint (May, 11 - May, 22)

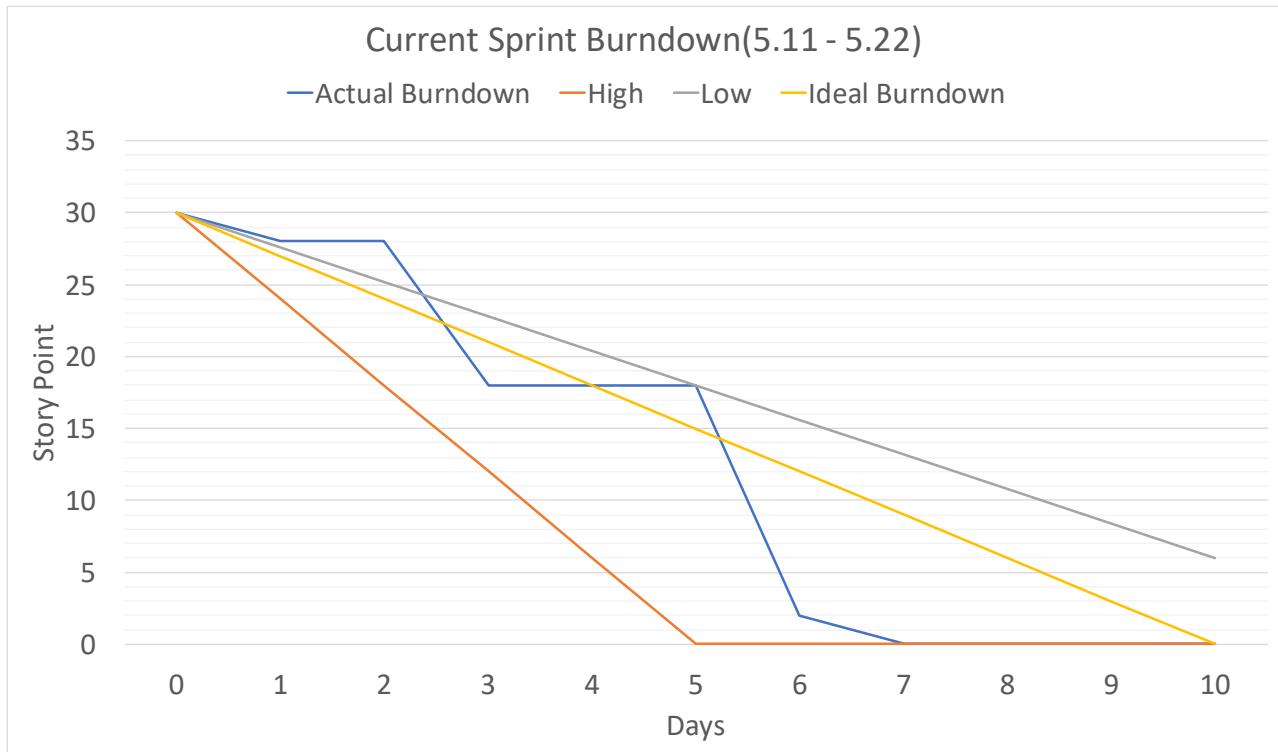


Figure 4.3: Burndown Chart of the Second Sprint

Agile Board

A handy tool called *Trello* is used to manage our Agile Board. As present, all basic features have been realized. The Agile Board system is shown in Figure 4.4:

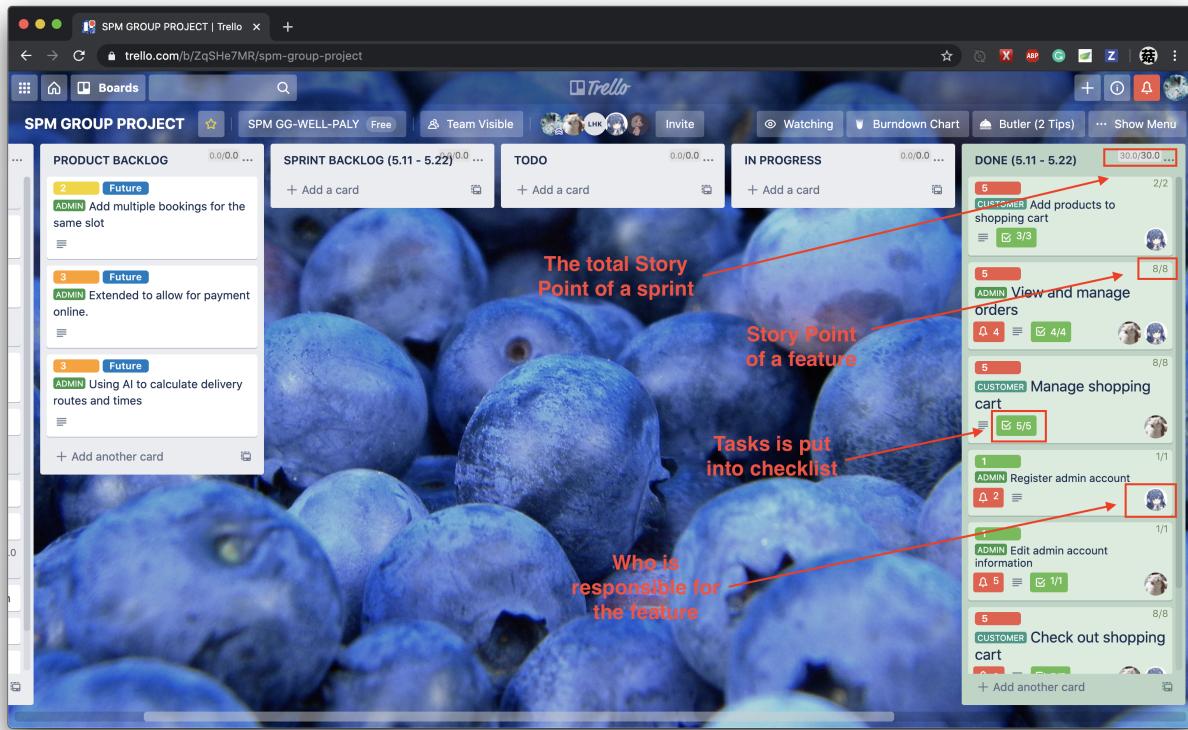


Figure 4.4: Agile Board

The First Sprint Review & Sprint Retrospective Record (May, 8, 2020)

The record of these two meetings can be found on <https://www.youtube.com/watch?v=4slzV0LbUSY>.

In the sprint review, the development team give a presentation to show all the features finished in the first sprint. The Scrum Master and the Product Owners provide reviews for the product. We held the meeting in zoom. From the demo, we find out that there are some unworkable buttons which should be deleted in the delivery version. And after a little change based on the reviews, we release our first product to the market.

In the sprint retrospective, we discuss what went well in the first sprint. All the member in the development team thinks Daily Scrum is great. It helps the development team communicate better because it can provide information about what others are doing. When it comes to the "what could be improved" part, we decide to hold daily scrum standup only on Monday, Wednesday and Friday. This is because the development team would not work on this subject every day.

Daily Scrum Standup Meeting Record

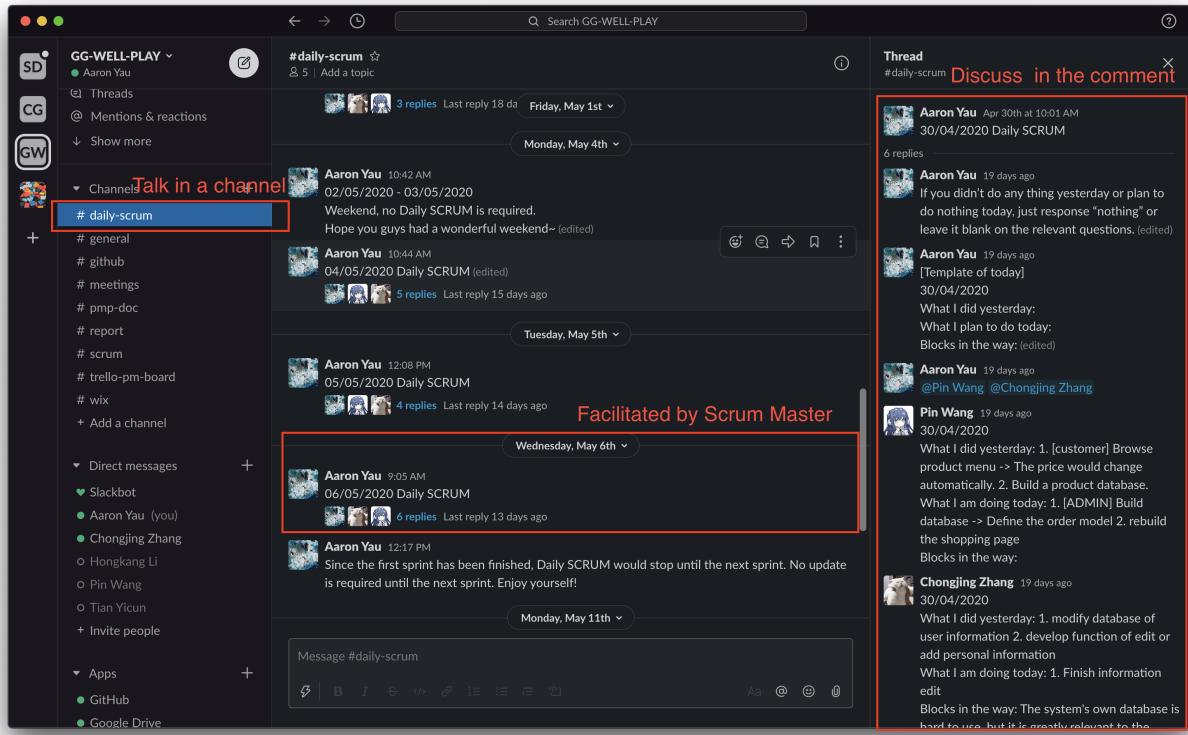


Figure 4.5: Daily Scrum Standup Meeting System Example

Date	Daily Scrum Standup Meeting Record
April, 27, 2020	Zhaofeng Qiu: <ul style="list-style-type: none">Now, since this is the first day of our first sprint. Only "What I plan to do today" is required.
	Pin Wang: <ul style="list-style-type: none">What I plan to do today:<ol style="list-style-type: none">Implement feature: [customer] Browse product menu - Provide a page for showing the list of the products
	Chongjing Zhang: <ul style="list-style-type: none">What I plan to do today:<ol style="list-style-type: none">Implement feature: [customer] Sign in - Provide a page for sign-in

April, 28, 2020

Zhaofeng Qiu:

- Please move the card you are doing to “in progress”.
- Send the thing you have to cover in the meeting in format.

Pin Wang:

- What I did yesterday:
 1. Implement feature: [customer] Browse product menu -*i*
Provide a page for showing the list of the products
- What I plan to do today:
 1. Implement feature: [customer] Browse product menu -*i*. Can see the picture of the products. Can see the price of the products. Can see the types of the products.
- Blocks in the way:
 1. Wix doesn't support its built in check out function unless joining its premium plan. A check out/place order page might need to be implemented manually.

Chongjing Zhang:

- What I did yesterday:
 1. Implement feature: Implement feature:[customer] Sign in -*i*
Provide a page for sign-in
 - What I plan to do today:
 1. Implement feature: [customer] Sign in and sign out
 2. Implement feature: [Admin]Sign in and sign out
 3. Implement feature: [Customer] Sign up
 4. Create related database
 - Blocks in the way: Nothing.
-

April, 29, 2020

Zhaofeng Qiu:

- @Pin Wang @Chongjing Zhang You guys have to figure out the solution of the Wix problem.

Pin Wang:

- What I did yesterday:
 1. Implement feature: [customer] Browse product menu -*i*. Can see the picture of the products. Can see the price of the products. Can see the types of the products.
- What I plan to do today:
 1. Implement feature: [customer] Browse product menu -*i*. The price would change automatically.
 2. Implement feature: Build a product database.
- Blocks in the way:
 1. Wix's built in shop doesn't support customize, need to create shopping page, product details page, and place order page manually.

Chongjing Zhang:

- What I did yesterday:
 1. Implement feature: [customer] Sign in and sign out
 2. Implement feature: [Admin]Sign in and sign out
 3. Implement feature: [Customer] Sign up
 4. Create related database
 - What I plan to do today:
 1. Implement feature: modify database of user information
 2. Implement feature: develop function of edit or add personal information
 - Blocks in the way:
 1. Some function can't change in Wix model, so maybe it needs to modify or even redo.
-

April, 30, 2020

Zhaofeng Qiu:

- @Pin Wang @Chongjing Zhang If you didn't do any thing yesterday or plan to do nothing today, just response "nothing" or leave it blank on the relevant questions.
- I will tell Yicun about the problem of database.

Pin Wang:

- What I did yesterday:
 1. Implement feature: [customer] Browse product menu -; The price would change automatically.
 2. Build a product database.
- What I plan to do today:
 1. Implement feature: [ADMIN] Build database -; Define the order model
 2. rebuild the shopping page
- Blocks in the way:
 1. Nothing.

Chongjing Zhang:

- What I did yesterday:
 1. Modify database of user information
 2. Develop function of edit or add personal information
 - What I plan to do today:
 1. Finish information edit.
 - Blocks in the way:
 1. The system's own database is hard to use, but it is greatly relevant to the entire model. I'm trying to find some methods to code in the backend to acquire data in db.
-

May, 01, 2020

Zhaofeng Qiu:

- Daily SCRUM time!
- Why you don't want to do any thing today? @Chongjing Zhang

Pin Wang:

- What I did yesterday:
 1. Implement feature: [ADMIN] Build database -; Define the order model
- What I plan to do today:
 1. rebuild the shopping page
- Blocks in the way:
 1. Nothing.

Chongjing Zhang:

- Reply to Scrum Master:
 1. Because my part is based on Pin Wang's part, which isn't finished.
- What I did yesterday:
 1. Finish information edit
 2. Improve database functions and code in backend
- What I plan to do today:
 1. Nothing.
- Blocks in the way:
 1. My part is based on Pin Wang's part, which isn't finished.

May, 02, 2020 - May, 03, 2020 Weekend, no Daily Scrum

May, 04, 2020

Zhaofeng Qiu:

- Hope you guys had a wonderful weekend.

Pin Wang:

- What I did last Friday:
 1. Rebuild the shopping page and product details page
- What I plan to do today:
 1. Implement feature: [Admin] Manage product infomation-*i*
 1. Add product
 2. Delete product
- Blocks in the way:
 - 1.

Chongjing Zhang:

- What I did last Friday:
 1. Nothing.
- What I plan to do today:
 1. Modify database
 2. Fix problem of connecting system own's database and created database
- Blocks in the way:
 1. Nothing.

May, 05, 2020

Zhaofeng Qiu:

- @Pin Wang @Chongjing Zhang

Pin Wang:

- What I did yesterday:
 1. Implement feature: [Admin] Manage product infomation-*i*
 1. Add product 2. Delete product
 - What I plan to do today:
 1. Implement feature: [Admin] Manage product infomation-*i*
 1. Change the price of products 2. Change the pictures of products 3. Change the type of products
 - Blocks in the way:
 - 1.
- Chongjing Zhang:
- What I did yesterday:
 1. Modify database
 2. Fix problem of connecting system own's database and created database
 - What I plan to do today:
 1. Nothing.
 - Blocks in the way:
 1. Nothing.

May, 06, 2020

Zhaofeng Qiu:

- @Pin Wang @Chongjing Zhang Is everything going well? It seems that the database feature has been in "in Progress" for many days. If there is any problem, tell me in "Blocks in the way".

Pin Wang:

- What I did yesterday:

Admin Manage product infomation-*i*

 1. Change the price of products
 2. Change the pictures of products
 3. Change the type of products.
- What I plan to do today:
 1. Test functions of website, make sure everything go well
- Blocks in the way:
 1. Nothing.

Chongjing Zhang:

- Reply to Scrum Master:
 1. Sorry, we've finished yet, just forgot to move it to done.
- What I did yesterday:
 1. Implement feature:
- What I plan to do today:
 1. Test functions of website, make sure everything go well
- Blocks in the way:
 1. Nothing.

- May, 07, 2020 - May, 10, 2020 Zhaofeng Qiu:
- Since the features in the first sprint has been finished, Daily SCRUM would stop until the next sprint. No update is required until the next sprint. Enjoy yourself!
-

- May, 11, 2020 Zhaofeng Qiu:
- Daily SCRUM @Pin Wang @Chongjing Zhan. From now on, the Daily Scrum would only be held on Monday, Wednesday and Friday.
- Pin Wang:
- What I plan to do today & tomorrow:
 1. Build cart database.
 2. Implement feature: [customer] Add products to shopping cart.
 3. [customer] Check out shopping cart -*i*. (1) Show the day and time which is valid (2) Choose a day and time for delivery.
 - Blocks in the way:
 1. Nothing.
- Chongjing Zhang:
- What I plan to do today & tomorrow:
 1. Build cart and order database.
 2. Link cart database with user information and develop functions of add and delete items in the cart.
 3. Implement functions of select items to pay.
 4. Implement functions of change items size or/and quantity in cart.
 5. Implement functions of viewing total prices in cart.
 6. Implement functions of showing all items.
 - Blocks in the way:
 1. Unfamiliar with wix query method - "then", spend much time in debugging.

-
- May, 12, 2020 No Daily Scrum on Tuesday in the second sprint. Canceled based on decision in the first sprint retrospective.
-

May, 13, 2020

Zhaofeng Qiu:

- @Pin Wang @Chongjing Zhan

Pin Wang:

- What I did in the last two days:
 1. Build cart database.
 2. Implement feature: [customer] Add products to shopping cart.
 3. Implement feature: [customer] Check out shopping cart -*i*
(1) Show the day and time which is valid (2) Choose a day and time for delivery.
- What I plan to do today & tomorrow:
 1. Implement feature: [customer] Check out shopping cart -*i*
(1) Handle synchronization problem (2) Get a confirming email. (3) Add an order to the user's order list.
- Blocks in the way:
 1. Nothing.

Chongjing Zhang:

- What I did in the last two days:
 1. Build cart and order database.
 2. Link cart database with user information and develop functions of add and delete items in the cart.
 3. Implement functions of select items to pay.
 4. Implement functions of change items size or/and quantity in cart.
 5. Implement functions of viewing total prices in cart.
 6. Implement functions of showing all items.
- What I plan to do today & tomorrow:
 1. Implement feature:
- Blocks in the way:
 1. We want to nest a repeater inside a repeater, but it seems impossible to implement in wix, so we need to find out other methods to solve this problem.

May, 14, 2020

No Daily Scrum on Tuesday in the second sprint. Canceled based on decision in the first sprint retrospective.

May, 15, 2020

Zhaofeng Qiu:

- @Pin Wang @Chongjing Zhan Daily SCRUM
- It seems the risk of Wix happend.

Pin Wang:

- What I did in the last two days:
 1. Implement feature: [customer] Check out shopping cart -*i*
(1) Handle synchronization problem (3) Add an order to the user's order list. Partially done (2): send a confirmation email
- What I plan to do today:
 1. Finish send confirmation email.
 2. Implement feature: [Customer] Cancel orders
- Blocks in the way:
 1. The email template offered by Wix isn't very helpful for showing all order details. Need to find a alternative way to complete this function.

Chongjing Zhang:

- What I did in the last two days:
 1. Rebuild userinfo database
 2. Rebuild user address page
 3. Add confirmation to delete in cart page.
 4. Sum money to items only selected.
 5. Modify some UI and design in interfaces.
 6. Edit order database.
 7. Design order page
- What I plan to do today & tomorrow:
 1. Implement feature: [Customer]Design order page 2. Connect this page to database so that all orders could be shown correctly 3. [Admin] Design order management page
- Blocks in the way:
 1. Wix doesn't support nest a repeater inside a repeater, so need to find a way to make a beautiful page

May, 16, 2020 - May, Weekend, no Daily Scrum
17, 2020

May, 18, 2020	<p>Zhaofeng Qiu:</p> <ul style="list-style-type: none"> • @Pin Wang @Chongjing Zhan Daily SCRUM <p>Pin Wang:</p> <ul style="list-style-type: none"> • What I did in the last two days: <ol style="list-style-type: none"> 1. Implement feature: [customer] Check out shopping cart -& send a confirmation email • What I plan to do today: <ol style="list-style-type: none"> 1. Implement feature: [customer] view and cancel order • Blocks in the way: <ol style="list-style-type: none"> 1. Nothing. <p>Chongjing Zhang:</p> <ul style="list-style-type: none"> • What I did in the last two days: <ol style="list-style-type: none"> 1. Design UI of order page. • What I plan to do today & tomorrow: <ol style="list-style-type: none"> 1. Implement feature: [admin] finish order management page, improve some functions and finish all rest of work. • Blocks in the way: <ol style="list-style-type: none"> 1. Nothing.
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May, 19, 2020	No Daily Scrum on Tuesday in the second sprint. Canceled based on decision in the first sprint retrospective.
May, 20, 2020	<p>Zhaofeng Qiu:</p> <ul style="list-style-type: none"> • @Pin Wang @Chongjing Zhan Daily SCRUM • It seems that all the features in the second sprint have been finish! Good Jobs! <p>Pin Wang:</p> <ul style="list-style-type: none"> • What I did in the last two days: <ol style="list-style-type: none"> 1. Implement feature: [customer] view and cancel order <p>Chongjing Zhang:</p> <ul style="list-style-type: none"> • What I did in the last two days: <ol style="list-style-type: none"> 1. Implement feature: [admin] finish order management page, improve some functions and finish all rest of work.

Table 4.1: Daily Scrum Standup Meeting Record

4.1.2 Product Related Artefacts

The status of the product

We have finished all the features required in the initial development process. The online store website can be accessed now on <https://pinwang4.wixsite.com/website>. A screenshot of the homepage is shown in Figure 4.6. The online store website is beautiful and well designed, with a user-friendly interface and all the features required in the initial development. The use cases and user stories of the product is shown in Table 3.6 in Section 3.5.1, which would not be shown again here. The detail of the features completed in each sprint can be checked in Section 3.5.4. Also the completed features detail can be check in our Agile Board in *Trello*, which is shown in Figure 4.7. For a quick look, a completed feature lists (detailed tasks breakdown would not be included here) is provided below:

- Milestone 1 – let the website go online without the function of purchase. The website can display all kinds of information about the products and provide the service of user registration. At the same time, the database is initially established to record the data of users and products.
 1. Database
 2. Browse product menu
 3. Customer sign up
 4. Customer sign in and sign out
 5. Customer add and edit client information
 6. Admin manage product infomation
 7. Admin sign in and sign out
- Milestone 2 – Allow users to place orders to purchase products. After this milestone, sellers can view and modify user orders. Basic requirement testing has to be passed in this milestone.
 1. Customer add products to shopping cart
 2. Customer manage shopping cart
 3. Customer check out shopping cart
 4. Customer cancel orders
 5. Admin view and manage orders
 6. Register admin account
 7. Edit admin account information

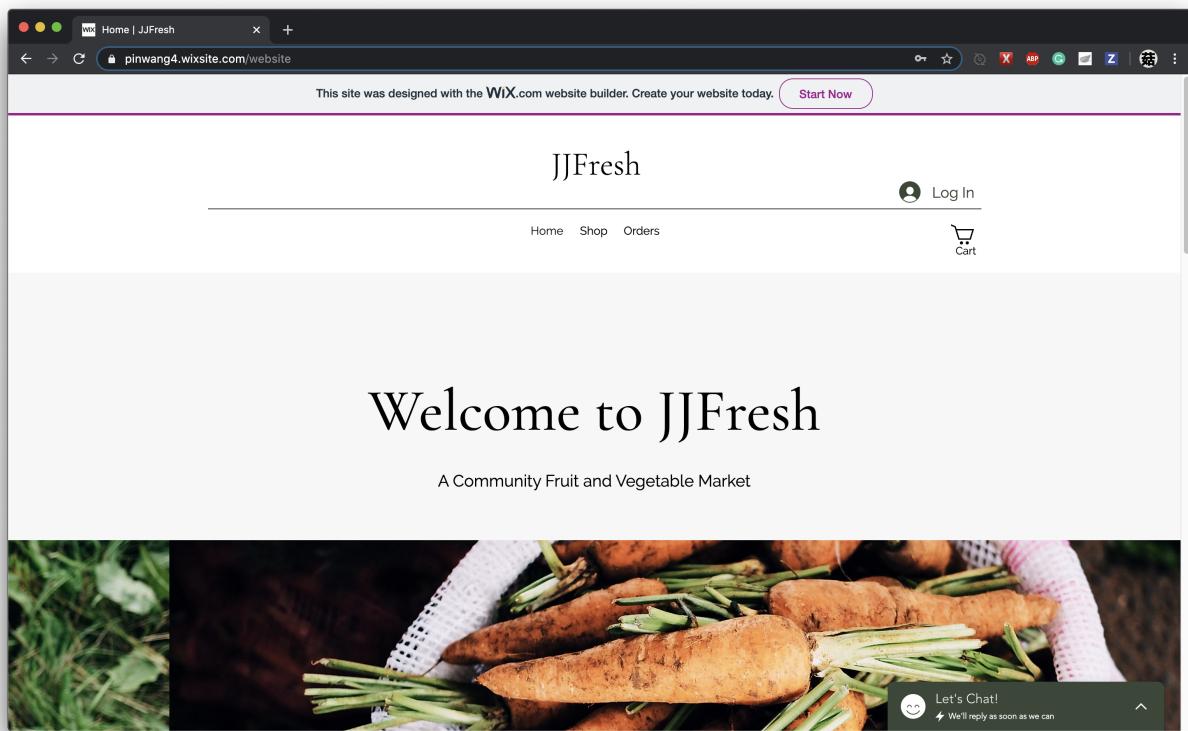


Figure 4.6: Homepage of the online store

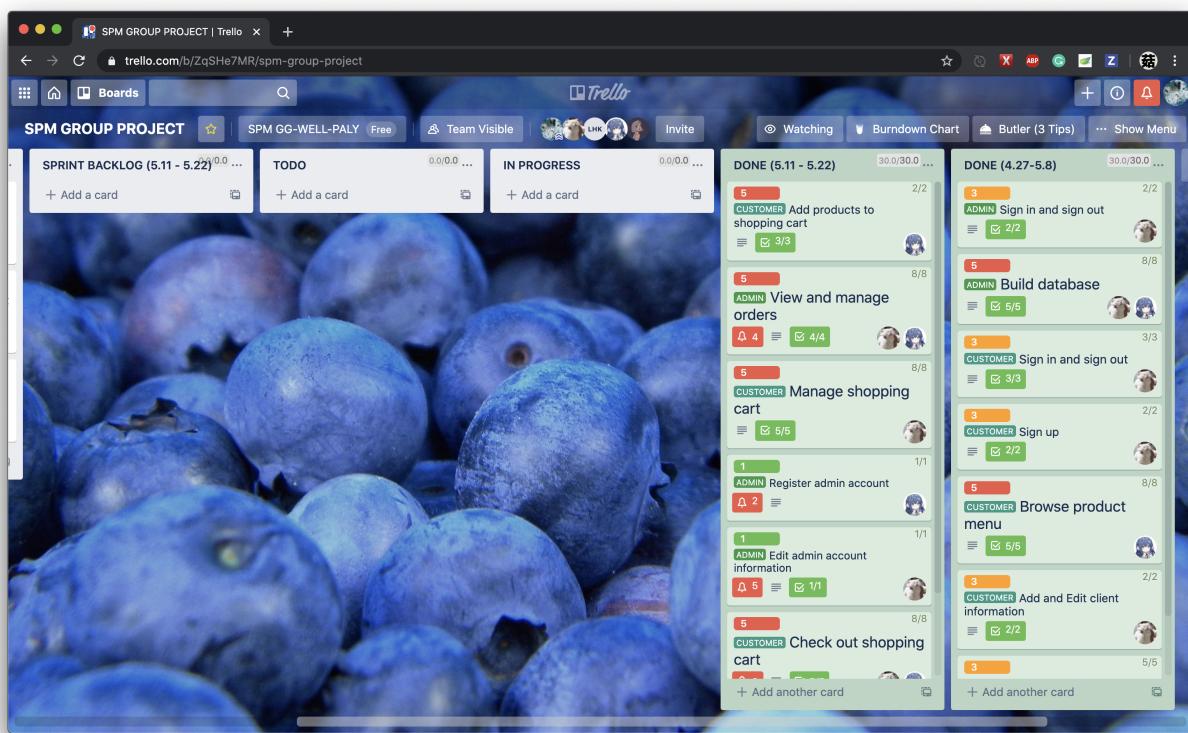


Figure 4.7: Done list in the Agile board

4.1.3 Risk Monitoring and Control

| Write a brief update on the risk status: - Did any of the risks originally identified occur? - If the risks occurred did you mitigate the risks as planned? - Did you identify new risks?|