Team Proj18

Project Deliverable E: **Project Schedule and Cost**

GNG 1103 – Engineering Design

Team Members:

Shuyuan Bai (300023989)

Grace Buchardt (300236838)

Craig Bush (300251044)

Simon Situ (7761503)

Steven Wu (7883953)

Faculty of Engineering – University of Ottawa

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1. Introduction

As per the last deliverable, conceptual design one (stock market design) was chosen as our blueprint for the prototype. After the second client meeting, our team decided to incorporate the customer engagement subsystem from concept three into the final design. The goal of this deliverable is to lay out the schedule and plans for the project as well as any risks associated with the project. Contingency plans will be identified for each risk. Material and cost requirements for the project will also be listed for budgeting purposes. Furthermore, three prototype testing milestones will be defined including test period.

2. Project Design

The project design that we will proceed with is an integrated design using a loyalty point trading model analogous to a stock market. The main features of this model will include a points wallet interface that shows the users cash balance and points balance. This platform will be interconnected with existing loyalty point programs so users can buy and sell their points in simple transactions at market values. The calculated price of each loyalty point will use a baseline value and the perceived market value of retailers, thus allowing point value to be controlled democratically by retail customers. The platform will display the market history of each loyalty point on the program on a timeline and show relative price changes. Other features for the platform will include transaction history, a promotions tab, a search bar to look up various points, and an interactive survey area to earn additional points. Below are figures 1 to 4 display the interface of the platform. Figure 1 shows the home interface after the user logs on to the platform. In figure 2 users can manage their points wallet and see the financial breakdown of their profile. Figure 3 is the interface concept that users will use to buy and sell points. Retail customers can also link their existing loyal points to the platform by connecting them to their profile as shown in figure 4.

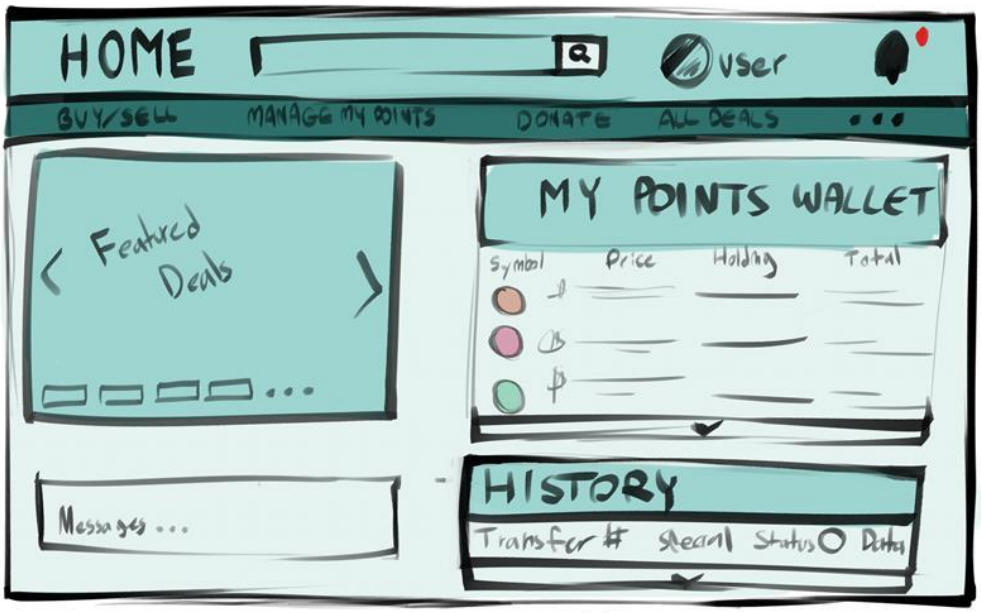

Figure 1. Home menu of the loyalty point trading platform

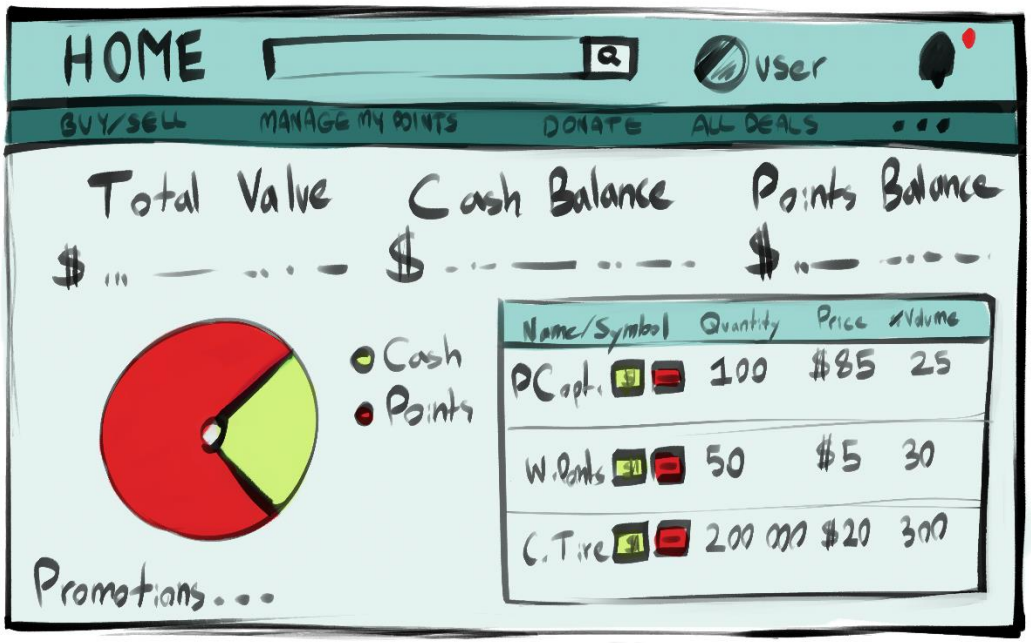

Figure 2. Manage my point interface for the platform

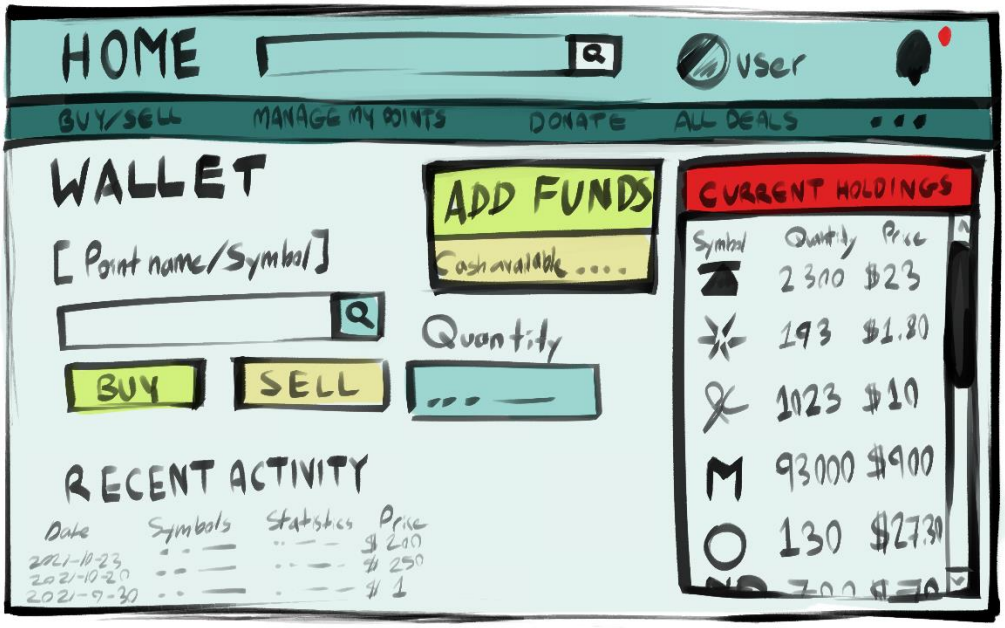

Figure 3. Buy and sell interface for the loyalty points trading software

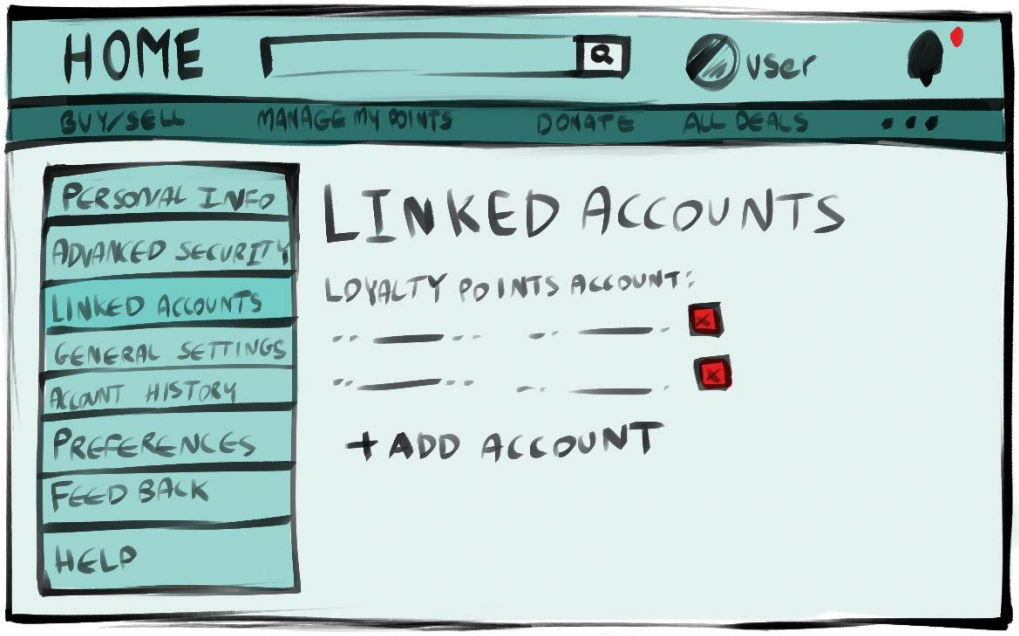

Figure 4. User profile interface. Users can link existing loyalty points programs under the user profile manager.

3. Project Plan and Schedule

Located in table 1 is our future project schedule. Listed in column 3 are dependencies. These are tasks that need other tasks as their prerequisites. Team member schedules are dynamic, so project plans are flexible for changes. The due dates in the table are the final dates where tasks must be completed. The goal is to finish each stage a few days before the due date to allow for any revisions. Milestones for this project are the deliverables that will help us identify the current stage of the project. Deliverables will be completed as a team, and the assigned members for each deliverable will be responsible for submitting the assignment.

Table 1. Future Project Schedule

Task #	Task Name	Dependencies	Assigned member	Duration	Due Date
1	Deliverable E: Project Schedule and Cost	None	Craig	Milestone	2021/10/24
2	Research and select website building and hosting service	None	Everyone	7 days (Reading week)	2021/11/01
3	Build Website Prototype	2	Everyone	11 days	2021/11/03
4	Deliverable F: Prototype I and Customer Feedback	None	Simon	Milestone	2021/11/04
5	Client Meeting 3	3	Everyone	1 day	2021/11/09
6	Prototype iteration and Prototype II construction	None	Everyone	2 days	2021/11/11
7	Deliverable G: Prototype II and Customer Feedback	None	Shuyuan	Milestone	2021/11/11
8	Prototype Iteration and Prototype III construction	6	Everyone	14 days	2021/11/22
9	Final Project Presentations	None	Everyone	Milestone	2021/11/23
10	Deliverable H: Prototype III and Customer Feedback	None	Steven	Milestone	2021/11/25
11	Deliverable I: Design Day Presentation	None	Grace	Milestone	2021/12/01
12	Design Day	11	Everyone	1 day	2021/12/02
13	Deliverable K: Archive/User Manual	None	Simon	Milestone	2021/12/08

4. Project Risks and Contingency Plans

Potential risks that may negatively impact our project are listed in the following section. These risks would detrimentally impact our ability to deliver a product of desired standard by the submission date, as well as hurting the quality of our prototypes and remaining deliverables. Due to these consequences, it is critical that we aim to prevent them if possible and come up with plans in case incident cannot be prevented. These can be found in table 2.

Table 2.Potential Project Risks and Contingency Plans

Project Risk	Probability	Impact on Project	Contingency Plan
Losing data or saved work	low	Very High	Most work is done on cloud-based platforms that automatically save work.
Team conflict	Very Low	Very High	All team members signed a team contract to help deter any conflict. If conflict still arises and cannot be handled internally then the TA's will be involved.
Code not functioning as planned.	High	High	Teammates will assist each other if design work is stalling
Not completing tasks on time.	Low	High	If tasks are not completed on time, workloads and task assignments will be adjusted to ensure completion

5. Required Materials and Budget

Found in table 3 are the material and budget requirements. Our design concept will be web-based for a cloud-based website creation service such as Wix is used to fulfill this requirement. If there are any cost or functional issues with Wix, our team plans to use Microsoft Power or Square Space as alternative options. Figma will be used to help create graphics for the website and Microsoft Excel will be used to calculate or create any charts. If there are any coding requirements, we will prototype code using Codeblocks.

Table 3. Required Materials for the project

Material #	Name of Material	Description	Quantity	Unit Cost	Total Cost
1	Wix's	Cloud based website creation service	2 months	$5-$15 USD / Month (package dependant)	$10 - $ 30
2	Microsoft Power	Software used to help with creating websites.	N/A	Free	Free
3	Squarespace	Website building and hosting service	2 months	$12-$16/ Month (Package dependant)	$24-$32
4	Figma	Software used for designing websites or apps	N/A	Free	Free
5	Microsoft excel	Used for storing data and doing calculations	N/A	Free	Free
6	Codeblocks	Used for writing and testing code	N/A	Free	Free
7	GitLab	Code repository hosting system	N/A	Free	Free
				Total	$62

6. Prototype Testing Plan

Table 4. The three subsystem prototypes and their testing plans for the project.

Test ID (Prototype#)	Test Objective (Why)	Description of Prototype used and of Basic Test Method (What)	Description of Results to be Recorded and how these results will be used (How)	Estimated Test duration and planned start date (When)
1	Confirm UI works	The prototype will be a skeleton of our website where you can move your way through the website by clicking on boxes. Users will attempt to access their points wallet and visit company specific pages.	This test will be conducted by a group of students who attend the University of Ottawa be asked to go to certain locations on the website. afterwards the students will be asked for feedback which will be recorded and then interrupted for future UI design.	The test will be conducted over two days. This should give the opportunity for many students to get the chance to test the system and give their feedback. We tentatively plan to conduct this test on November 1st
2	Buy and sell of points	This protype will have a system that allows a user to buy and sell points. Based off the user's actions the value of the points will fluctuate. The test will be to ensure the subsystem functions properly.	We will test the buying and selling system and try to push the system to it's limits. We will also try and get some other users to test the buying and selling system. We will take note of any bugs or glitches and fix the issues for future designs	The test should only take a couple hours to complete however it may need to be redone multiple times based on the results. We tentatively plan to conduct this test on November 7th .
3	Trading of points between accounts	This prototype includes the buy and sell system from the previous prototype and tests a system that allows multiple accounts to use it at once.	To complete this test function, we will test the buying and selling feature over multiple accounts by having multiple people participate in the market at the same time. This is to ensure that the system can handle multiple users at once. Bugs and glitches will be recorded, fixed and the tested again to make sure the system works correctly	This test should only take about 1-2 hours. It may need to be redone several times based off the results. We tentatively plan to conduct this test on November 21st

7. Conclusion

In this deliverable, we improved our model based on the feedback received from the client. The current iteration of design was laid out through sketches highlighting key features. The project plan and schedule were identified to clarify the scope of work required to complete the product by the deadline. Prototype planning tests were designed and planned to meet client's needs. Risk analysis was conducted, and contingency plans were created to mitigate possible risks and delays. In addition, materials and cost requirements were determined. We estimate a total cost $62 from the bill of materials is required for our design budget.