Project Deliverable G
Prototype II and Customer Feedback

GNG 1103: Engineering Design
Section #A02
Group #6

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Introduction

Last week we came up with the first prototype and got some customer feedback. This prototype we came across some difficulty and we're now trying to solve the situation by changing some parts of the design. There will be no use for a manager's page in the home page so there will be only the merchant and user page. As expected the wix is a nice software but we are unable to produce our design or even close. We are still trying different softwares, even dabbling in coding like HTML. For this prototype we are focusing on the crypto currency code and user page. At the end of the document we would show our test plan for the next prototype.

The Blockchain and Crypto

The focus of this stage of prototyping the currency/token, is to understand exactly how we will build the token and how we will test it. **But mainly, the focus is finding the standard source code for creating the interface of the crypto.** (Obviously there is A LOT more that goes into creating a coin than just what our team will do but we will go through a basic creation of the token, to be able to fit it into the short time of this course.)

NOTE: We will be creating a token not a coin since, coins require their own blockchain to operate. Tokens operate on pre-existing networks which make them faster to build, easier, and far more pocket friendly. In our case we will use the Ethereum network.

First, we will address some common questions and explain:

1. How will the crypto be created?

We will implement the ERC20 interface, and we will create our own token and launch it on the Ethereum test net. (In blockchain technology, a testnet is **an instance of a blockchain powered by the same or a newer version of the underlying software**, to be used for testing and experimentation without risk to real funds or the main chain.).

2. How will the token be given its value?

Coins run on their own digital ledgers and hold value in the sense that they are used to transfer wealth. Tokens, on the other hand, rely on an existing underlying network to operate. Unlike coins that only exist digitally, tokens represent contracts for almost anything, even physical objects like tickets to a concert or redeemable flying points. (This still applies to our objective of democratizing loyalty points since we can use our token to represent anything we want it to.) But basically, if Zafin chooses to go down this path, the way to put a price on this is as follows:

We estimate the pricing kernel with which users price factors affecting their token holdings. We investigate how traditional risk factors such as market risk are evaluated, as well as how blockchain specific risk factors are priced in. In order to do so, we introduce an asset pricing model and modify its properties to make it applicable to cryptocurrency markets. We group the risk factors into market related and Bitcoin- and Ethereum blockchain specific risk factors. We find that blockchain specific risk factors are priced in. There is evidence that risk factors have moved from Bitcoin to Ethereum specific risk factors with an increasing importance of market factors, providing evidence for a decoupling of on-chain and off-chain trading activity.

Objective achieved for current stage of the prototype:

Code for the Standard interface: (Main objective of the token part of this prototype):

```
// ----------------------------------------------------------------------------
// ERC Token Standard #20 Interface
// https://github.com/ethereum/EIPs/blob/master/EIPS/eip-20-token-standard.md
// ----------------------------------------------------------------------------
contract ERC20Interface {
    function totalSupply() public constant returns (uint);
    function balanceOf(address tokenOwner) public constant returns (uint balance);
    function allowance(address tokenOwner, address spender) public constant returns (uint remaining);
    function transfer(address to, uint tokens) public returns (bool success);
    function approve(address spender, uint tokens) public returns (bool success);
    function transferFrom(address from, address to, uint tokens) public returns (bool success);

    event Transfer(address indexed from, address indexed to, uint tokens);
    event Approval(address indexed tokenOwner, address indexed spender, uint tokens);
}
```

Analysis and results for objective of this prototype and test method:

The way this has been tested was by comparing this code to other ERC20 tokens created and seeing if it works. As mentioned before this is a token so we will be using a pre-existing blockchain (Ethereum). When doing further research I also found that we had to use the Metamask extension, on google chrome. So, my guess is that there will be more functionality to be seen through this in the future, therefore my guess is that in future deliverables, more information will be given on this.

Regarding the next stage of the prototype:

1. What will the Objective of the next prototype be?

On the next prototype we will start applying the interface and create our own token and launch it on the Ethereum test net.

2. How will we test it to make sure the cryptocurrency was created?

Since this is more of a "functionality part" of the project, we will test by going to Etherscan, and see if Etherscan can recognize our new cryptocurrency, if it can follow it. (This will give us a good idea of how cryptocurrency is created when we talk about ERC20, it will teach us how to go from scratch and create a token and launch it on the Ethereum network from scratch).

3. Feedback and comments:

All we have done is asked Zeyad's cousin who has experience with crypto technology and blockchain, about his opinion on the plan and ideas that we have towards building the crypto. So far, he said it was a good idea but to try and implement it first and then show it to him, he had nothing else to add.

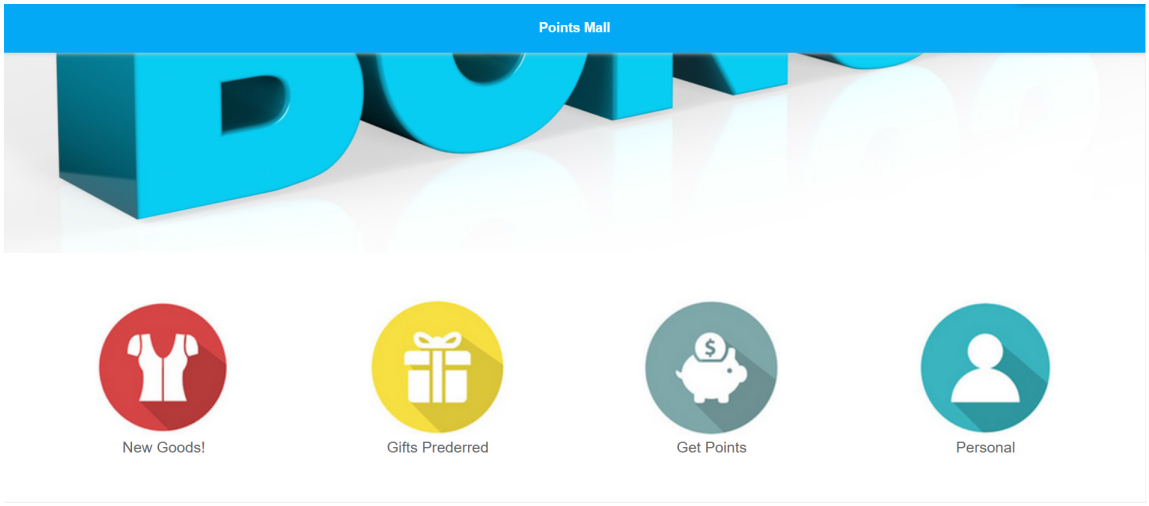
Since the Cryptocurrency (token) isn't yet up and running, we couldn't ask people for much feedback on it yet. However, hopefully in the next deliverable or the one after we will ask for feedback since we expect the crypto currency to be built by then. (As this is a rather long and challenging learning process). We will ask for feedback by asking friends that are in the crypto market and Zeyad's cousin for his opinions on what we have built so far.

User Page

Based on feedback from some customers last week, we updated the design of the web page to try to make the web page more intuitive. We have also improved some functions on the web. For example, now we can see the convertible products displayed on the homepage and try to display them in categories. In addition, we have added shopping cart and settlement functions. At the time of the prototype, we designed more how to send points between users and how to manage points, including viewing historical bills. For prototype 2, we pay more attention to how to let users use points. That is, how to use points to redeem some goods. Below I will show in detail our updated design and some test results. For the user page, we have a total of four sub-pages, which we can see at the lowest end of the page, which are the HOME, CLASSIFICATION, SHOPPING CART, and ME.

- Homepage

For the incoming book on the home page of the user page, shortcut keys for earning points, redeeming points, and user personalization are set. We can connect to the page that has been designed in prototype 1. That is, you can send points to contacts, redeem points and other functions. In addition, we can intuitively see the commodities that can be exchanged in the mall. For the incoming book on the home page of the user page, shortcut keys for earning points, redeeming points, and user personalization are set. We can connect to the page that has been designed in prototype 1. That is, you can send points to contacts, redeem points and other functions. In addition, we can intuitively see the commodities that can be exchanged in the mall.



Points Mall

New Goods

Camera
Points:7879

Pot
Points:3333

Doraemon Doll
Points:999

Notebook
Points:799

HP Bluetooth Keyboard
Points:129

Household Items and Appliances

Points Mall

Household Items and Appliances

Liven Electric Chafing Dish
Points:339

Joyoung Juice Extractor
Points:799

Coffee Cup
Points:79

Philips Coffee Machine
Points:599

McDonald's Vouchers
Points:199

Air Fryer
Points:499

Snacks

Lay's Potato Chips
Points:59

Chocolate 800g
Points:39

Oreos Cookie 350g
Points:49

Nut Snack Package 1478g
Points:229

Haagen-dazs Ice Cream
Points:99

MOKATE Coffee 450g
Points:159

Digital Accessories

Digital Accessories

Canon Camera
Points:8999

Mobile Phone Holder
Points:39

USB
Points:89

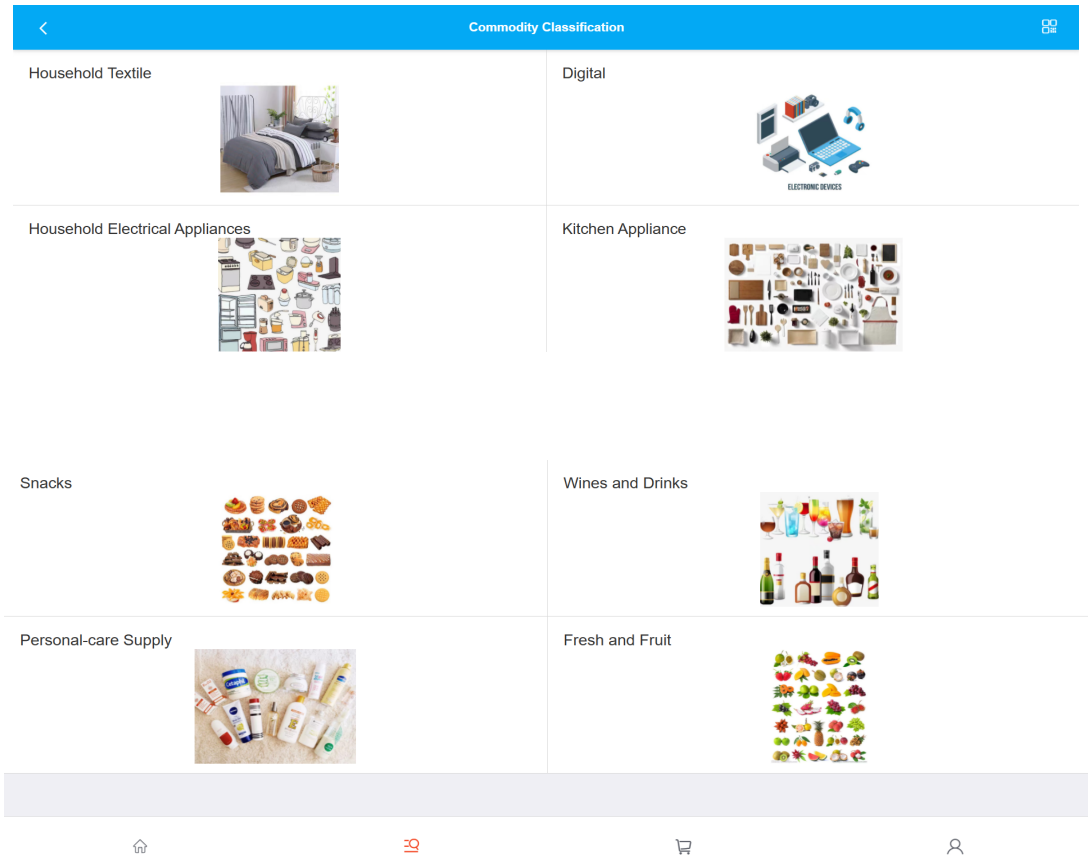
Wiring Board
Points:169

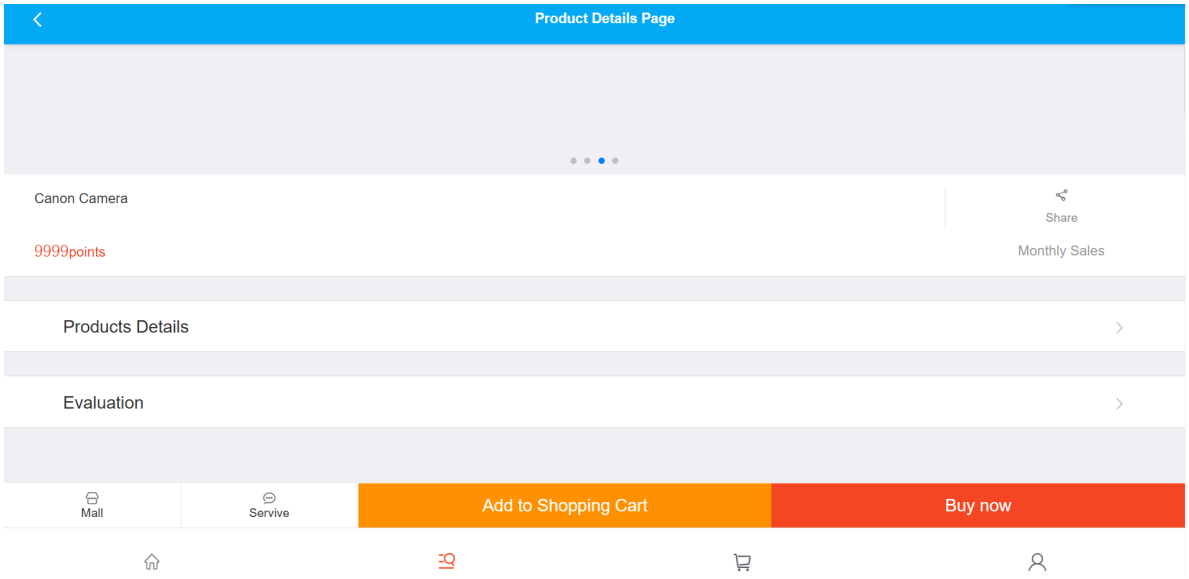
Battery x10
Points:100

Earphone for Iphone
Points:169

- Classification Page

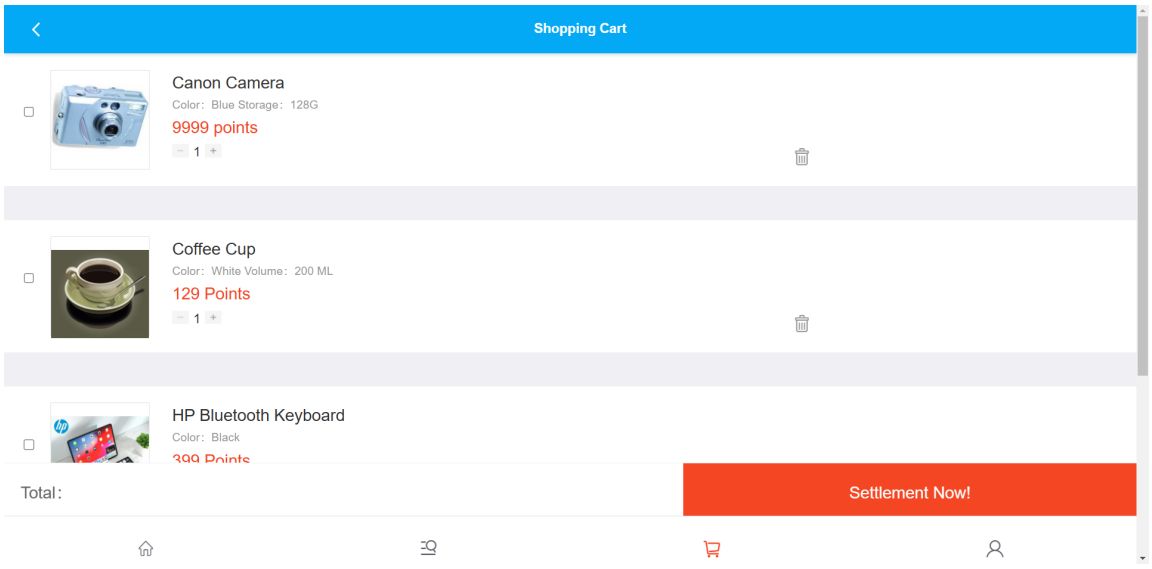
For the second page, we categorized all the convertible items in order to make the page look more organized. When we select the type of commodity that needs to be redeemed, all the commodities in its type will be displayed on the next page. When we select a specific product again, its detail page (including product parameters, monthly sales and evaluation) will be displayed. In this page, the user can choose "add to shopping cart" or "buy now" or return. In this way, you can jump to the shopping cart interface or the payment interface, which is the third sub-page of the user page.

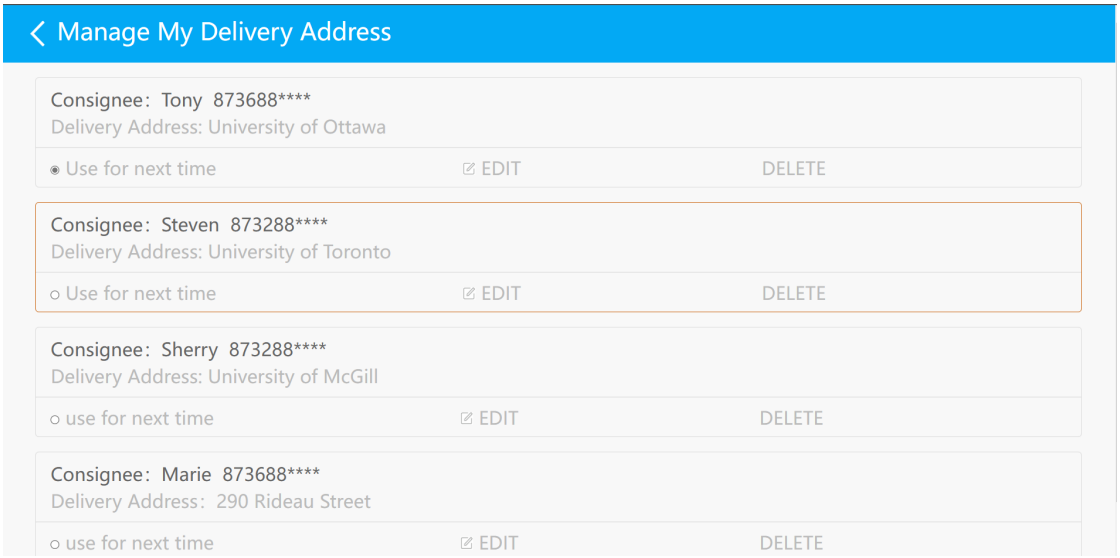


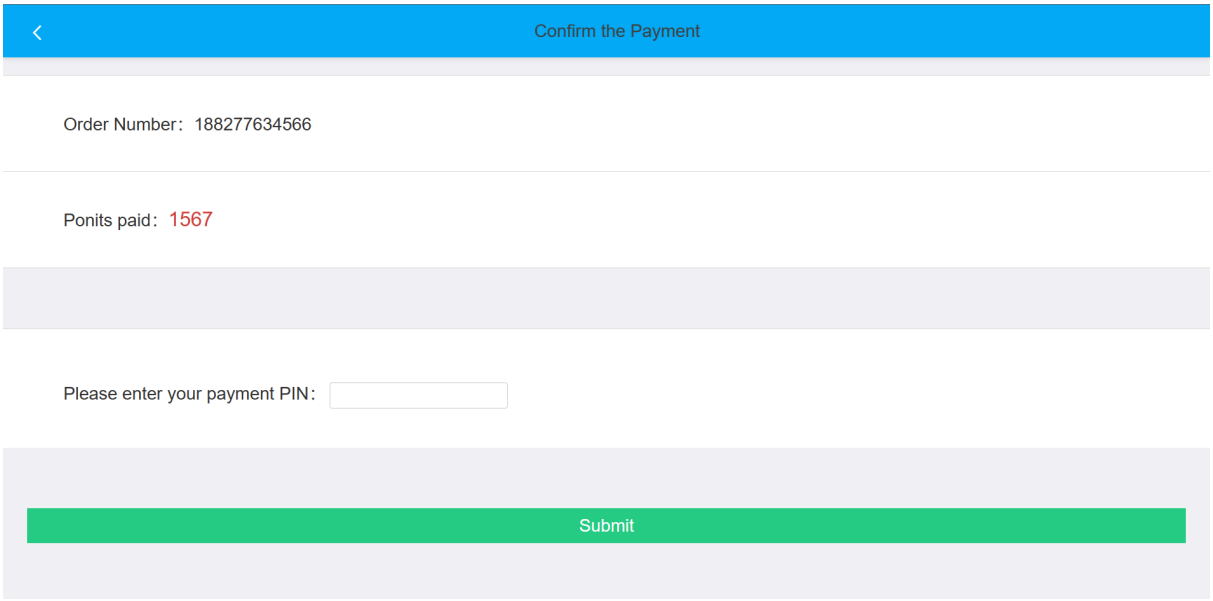


- ## Shopping Cart Page

Shopping carts should be familiar to everyone. We used a shopping cart with the concept of a shopping website and set up a connection to the previous product detail page. So we can see the products that the user has previously selected. Before proceeding with the settlement, the user only needs to check the goods that he wants to settle. Before payment, a dialog box will pop up for the user to enter and edit the address. After the user confirms the redemption and enters the password, the product is successfully redeemed.

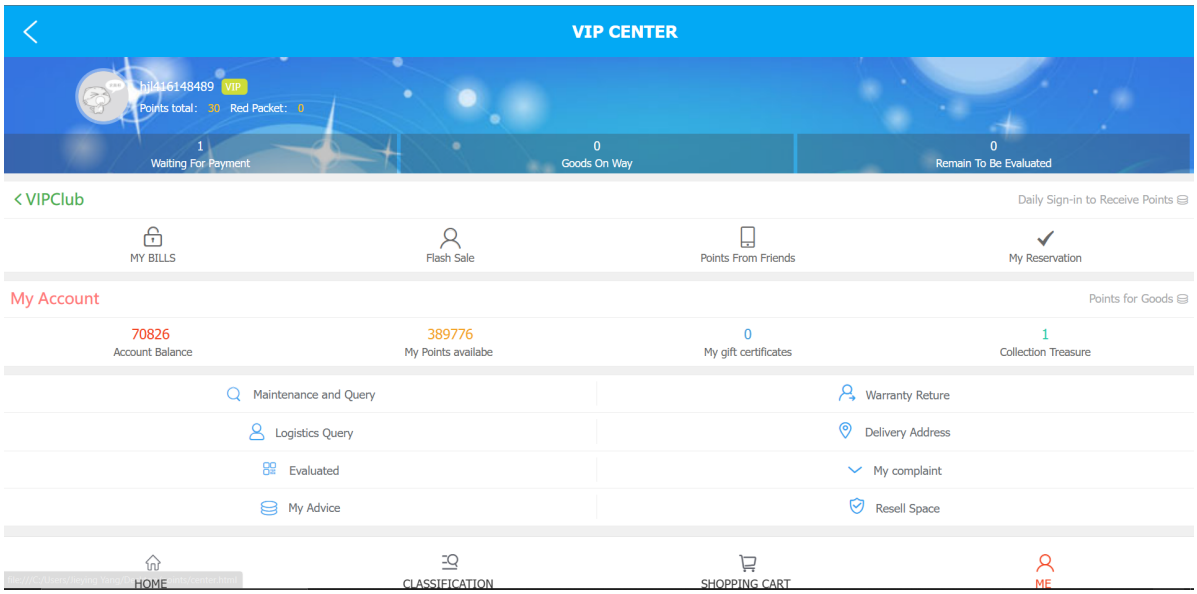


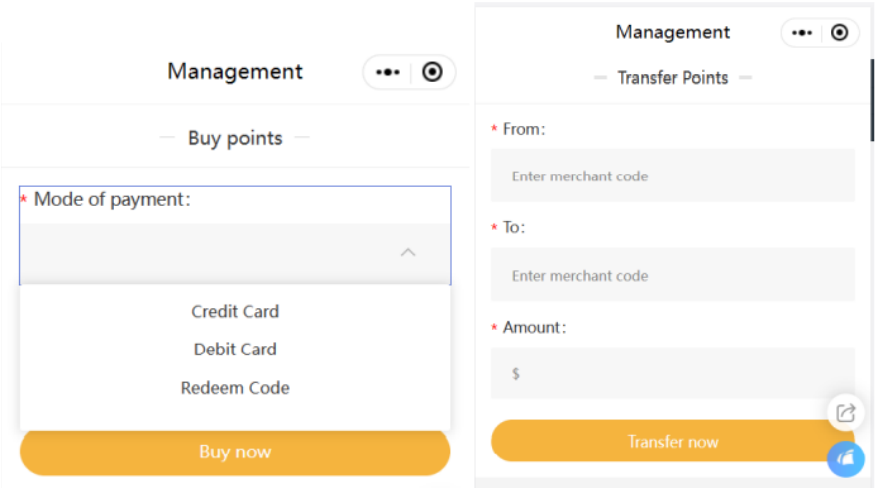

Manage My Delivery Address
Consignee: Tony 873688****
Delivery Address: University of Ottawa
Use for next time
EDIT
DELETE
Consignee: Steven 873288****
Delivery Address: University of Toronto
Use for next time
EDIT
DELETE
Consignee: Sherry 873288****
Delivery Address: University of McGill
use for next time
EDIT
DELETE
Consignee: Marie 873688****
Delivery Address: 290 Rideau Street
use for next time
EDIT
DELETE


Confirm the Payment
Order Number: 188277634566
Ponits paid: 1567
Please enter your payment PIN:
Submit

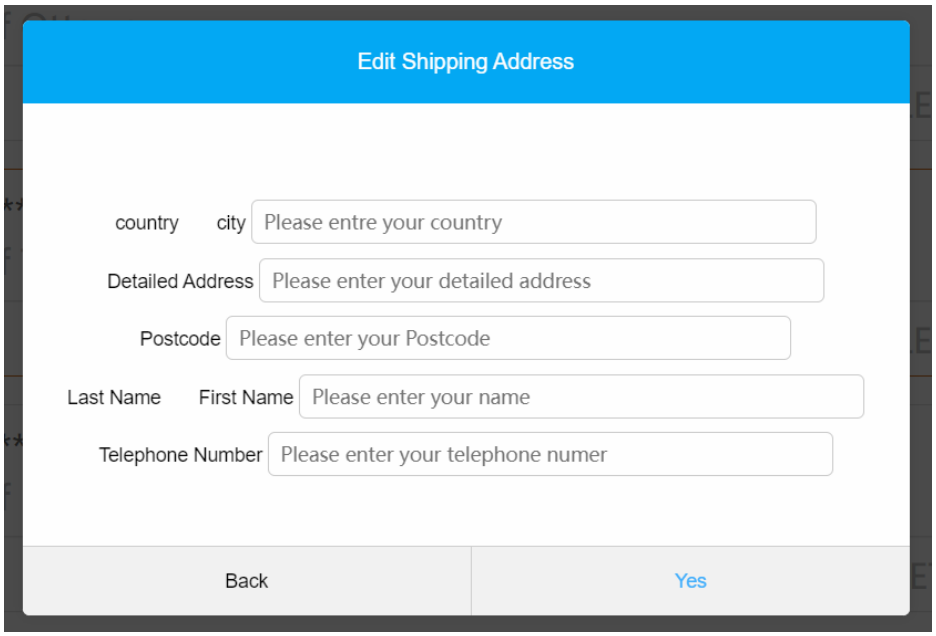
- My account Page

Our account page is an upgraded version of the prototype one "Management" page. This change is because in the last customer feedback, it is recommended that we make each function more intuitive. Therefore, when we open the "My Account" page, we can directly see the available points in the account. And the information of the goods that have been redeemed. We still set up the "logistics information" function. If there is a chance to cooperate with logistics companies in the future, users will also be able to see the logistics information of the goods here. We see that there is an option to "get points", this function will be linked to the cryptocurrency after the cryptocurrency blockchain is completed.



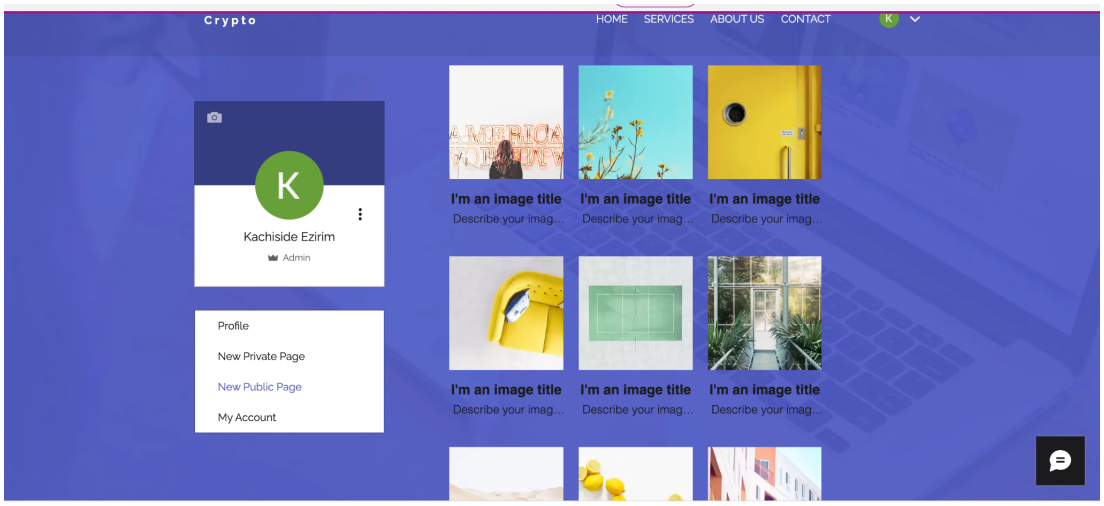


According to the test plan made last week, we tested the updated website. We tried to redeem points for an item. After testing, we can successfully put the items into the shopping cart and finally realize the exchange. In addition, we also tested the editing address function. The testresult is shown in the figure below, we can edit the new address and save it again.



Merchant Page

For the merchant page we planned to create a sort of platform that business owners can keep track of their points and be able to show what they would like to offer with points to attract new customers which the users would be able to see once they click on their profile.



Here the merchant can paste their products and what points they gain from purchasing the items. Here the feedback was more of "it is attractive and looks simple to use" which is good but doesn't give us on how to improve it.

Customer feedback

For Crypto Technology and Blockchain

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For User Page

For prototype 2, we still asked other members of my team and some potential users. After showing them and explaining our updated website, they thought it was more organized than the prototype 1 and the webpage looked neater. But they still made valuable suggestions like us. They think we should set up more search modules. They think that if the user has a strong purpose, for example, they only want to redeem a hair dryer. On the existing web pages outside, he can only be found by category and then browse the web page. If a search module is added to the website, users only need to enter keywords, such as "hair dryer", and the corresponding products can be displayed directly. This Yang is convenient for users to use.

For merchant page

Just as said before no feedback that would help improve but with the help of the PM and TA there would be a better objective for the next prototype.

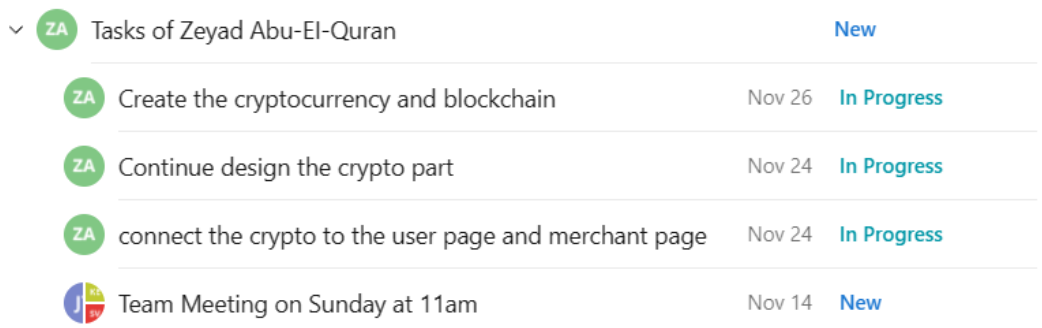
Test Plan for Next Prototype

Test ID	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.	Does the newly created search module work?	Try to enter keywords in the search box, and then check the displayed results.	After entering the keywords, check whether the products filtered out according to the search criteria meet the expectations. If it meets expectations, the search function is successful. If the corresponding product cannot be matched, we still need to update the search function.	2 hours
2.	Coherence of all user interfaces	Test the functions available on all user pages. See if they are all available.	If a whole set of redemption processes can be completed, then the web design is successful. After completing an exchange, check the merchant page at the same time to see if the transaction record can be seen.	1 days
3.	The points of different businesses can be converted to each other	Try to convert points between two businesses.	If the points in merchant A can be successfully used in merchant B. Then the function of converting points among different businesses will be successful.	2 days. We will begin when we finish both the merchants part and the user part and also connect them together.

Wrike Plan Updated

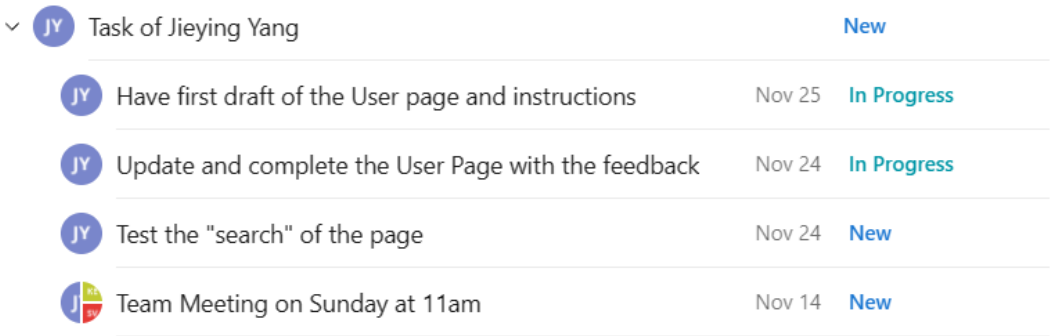
- For Zeyad's Wrike Plan

  https://www.wrike.com/open.htm?id=760256237



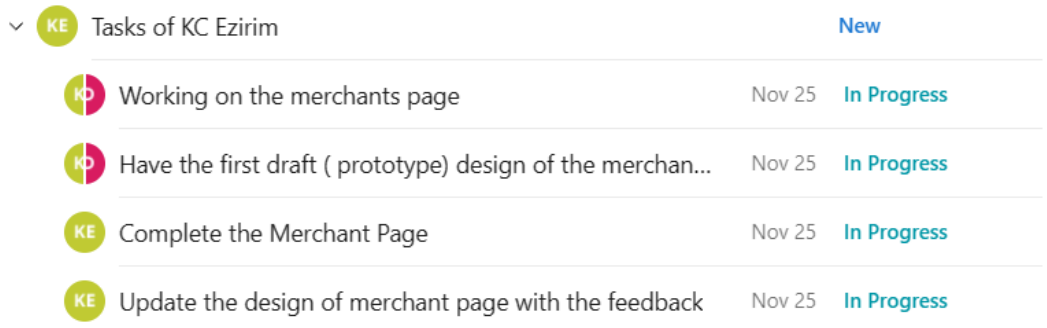
- For Jieying's Wrike Plan

  https://www.wrike.com/open.htm?id=774875483



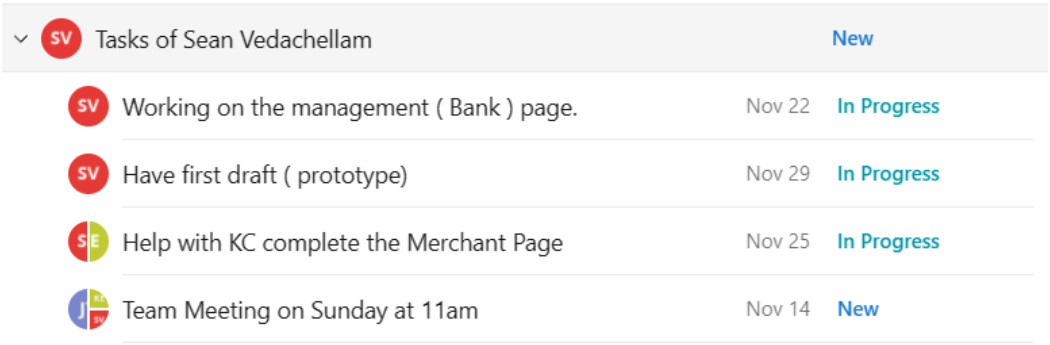
- For KC's Wrike Plan

  https://www.wrike.com/open.htm?id=760256569



- For Sean Wrike Plan

  https://www.wrike.com/open.htm?id=760256851



Conclusion

The second prototype was created with the purpose of visualising our initial concept and to improve our design based on our testings from the first prototype. We were able to focus more on our subsystems and we were able to design together in a more coherent manner. Based on the feedback and suggestions from customers we will be able to provide improvements in these areas next time. The next prototype will continue to focus on the subsystems of our design and developing them and to try to connect them together in a more efficient way.