Team Byte Me

TEAM 07

Deliverable 4

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Table of Contents

Table of Contents	1
Product Backlog - User Stories	2
Release Plan	5
Sprint #1	6
Sprint #2	12
Sprint #3	16
Sprint #4	20
High Level Architecture Diagram	27
Retrospection	33
Meeting Log	38

Product Backlog - User Stories

Shared User Stories

Register, Login and Logout

Note: We have combined register, login and logout user stories. However, a lot of tasks/old user stories have been completed. To reduce possible confusion on user story/task numbers and story points calculations, we are not creating new issues for these user stories. Our old sprint backlogs, task board, burn-down chart, acceptance criteria and references to old user stories remain unchanged.

As a user, I want to register a new account with my email, username and password. (Estimated Cost: 9; Priority: 1)

- #52 for customer (Estimated Cost: 3)
- #55 for restaurant owner (Estimated Cost: 3)
- #78 for restaurant staff (Estimated Cost: 3)

As a user, I want to be able to login to the system with my email or username and password. (Estimated Cost: 10; Priority: 1)

- #54 for customer (Estimated Cost: 1)
- #31 for restaurant owner (Estimated Cost: 8)
- #77 for restaurant staff (Estimated Cost: 1)

As a logged-in user, I want to be able to logout of the application. (Estimated Cost: 4; Priority: 1)

- #53 for customer (Estimated Cost: 1)
- #56 for restaurant owner (Estimated Cost: 2)
- #79 for restaurant staff (Estimated Cost: 1)

Customers

View Restaurants and Promotions

- **#3** As Jerry (a customer), I want to see a list of all the current promotions. (Estimated Cost: 3; Priority: 1)
- **#4** As Jerry (a customer), I want to search restaurants by their names, so that I can find restaurants that I know. (Estimated Cost: 3; Priority: 3)
- **#5** As Jerry (a customer), I want to check restaurants near my location, given a specific range. (Estimated Cost: 4; Priority: 3)
- **#6** As Jerry (a customer), I want to see a list of available promotions, so that I can participate and get benefits. (Estimated Cost: 3; Priority: 2)
- **#7** As Jerry (a customer), I want to sort promotions by the expiration dates, so that I will not miss any coupons. (Estimated Cost: 3; Priority: 2)

#8 As Jerry (a customer), I want to see promotion details, so that I can know my progress and other information about a promotion. (Estimated Cost: 4; Priority: 1)

Participate in Promotions

#10 As Jerry (a customer), I want to notify the restaurant about the subtask I am completing by pressing a button on the app, so the restaurant can validate my progress on the achievement. (Estimated Cost: 4; Priority: 1)

View Coupons and Achievements

- **#13** As Jerry (a customer), I want to browse all coupons available for me. (Estimated Cost: 2; Priority: 1)
- **#14** As Jerry (a customer), I want to sort my coupons according to their expiration dates. (Estimated Cost: 3; Priority: 3)
- **#16** As Jerry (a customer), I want to filter my coupons according to the restaurant types. (Estimated Cost: 3; Priority: 3)
- **#18** As Jerry (a customer), I want to see obtained achievements for each restaurant. (Estimated Cost: 3; Priority: 3)
- **#19** As Jerry (a customer), I want to see my current available points at a specific restaurant and items that I can redeem with my points. (Estimated Cost: 5; Priority: 3)

Redeem

- **#21** As Jerry (a customer), I want to notify the restaurant about the coupon I am using by pressing a button on the app. (Estimated Cost: 3; Priority: 1)
- **#22** As Jerry (a customer), I want to redeem coupons and items with my points. (Estimated Cost: 3; Priority: 3)

Restaurant Staffs

Validate Coupons and Promotions

- **#82** As Adam (a restaurant staff), I want to see a list of customers that want to have their progress of achievements validated. (Estimated Cost: 3; Priority: 1)
- **#83** As Adam (a restaurant staff), I want to see a list of customers that want to use their coupons. (Estimated Cost: 3; Priority: 1)
- **#29** As Adam (a restaurant staff), I want to verify if a customer has completed a task by confirming the request message sent by the customer. (Estimated Cost: 3; Priority: 1)
- **#28** As Adam (a restaurant staff), I want to validate customers' coupons by verifying the request message sent by the customer. (Estimated Cost: 3; Priority: 1)

Restaurant Owners

View Promotions

#27 As Alice (a restaurant owner), I want to filter promotions according to their status (upcoming, active or expired). (Estimated Cost: 3; Priority: 3)

Create Promotions

- **#39** As Alice (a restaurant owner), I want to be able to see a list of promotions that I have posted. (Estimated Cost: 2; Priority: 1)
- **#26** As Alice (a restaurant owner), I want to be able to create promotions with customizable titles, images, descriptions and other relevant information, so that promotion looks attractive, and rules are clear and transparent. (Estimated Cost: 7.5; Priority: 1)
- **#23** As Alice (a restaurant owner), I want to customize rules for a promotion. For example, order one item from each of three categories within ten days. (Estimated Cost: 5; Priority: 1)
- **#24** As Alice (a restaurant owner), I want to set rules for promotion by picking from a list of presets. For example, visit the restaurant ten times within a month. (Estimated Cost: 5; Priority: 1)

Rewards and Points

- **#20** As Alice (a restaurant owner), I want to be able to customize rewards for an achievement: give customers 100 points (more details specified below) or give them coupons (such as 20% off on any order, 5 dollars off on ordering this item) which they can use at our restaurant (Estimated Cost: 6; Priority: 1)
- **#17** As Alice (a restaurant owner), I want to set what customers can redeem with their points. For example, they can redeem a free ice cream with 300 points or get a 50% off coupon with 200 points. (Estimated Cost: 6; Priority: 3)
- **#15** (Epic) As Alice (a restaurant owner), I want to start a promotion collaboratively with other restaurant owners, and customers can get interchangeable coupons across both of the restaurants. (Estimated Cost: 6; Priority: 3)

Analytics

- **#11** As Alice (a restaurant owner), I want to see how many people participate in each of the promotions, so that I know which ones are more attractive. (Estimated Cost: 2; Priority: 3)
- **#9** As Alice (a restaurant owner), I want to see how many people have obtained each of the coupons, so that I know which ones are more attractive. (Estimated Cost: 4; Priority: 3)

Release Plan

There are no changes to our release plan.

Sprint #1

Sprint Backlog

#31 As Alice/Bob (restaurant owners), I want to be able to login to the system with my email and password. (Total Estimated Cost: 8; Priority: 1)

Tasks

- **#30** Set up the back-end server & database and have one working API endpoint (Estimated Cost: 3)
- #32 Create the UI for the login section (Estimated Cost: 3)
- **#33** Validate the password with the data stored in the back-end (Estimated Cost: 2)

Acceptance Criteria

- Given that Alice and Bob (as restaurant owners) want to use our product, when they open the login page, then there should be two input fields on the page for email and password.
- Given that Alice and Bob (as restaurant owners) have filled in the email and password correctly, when they click on the "Login" button, then they should be directed to the home page.
- Given that Alice and Bob (as restaurant owners) have filled in the email and password incorrectly, when they click on the "Login" button, then an error message shows up.

#39 As Alice/Bob (restaurant owners), I want to be able to see a list of promotions that I have posted. (Total Estimated Cost: 2; Priority: 1)

Acceptance Criteria

- Given that Alice and Bob (as restaurant owners) have logged into the system and there are promotions created for this restaurant, when they are on the promotions page, then they should see a list of all promotions.
- Given that Alice and Bob (as restaurant owners) have logged into the system and there are no promotions created for this restaurant, when they are on the promotions page, then they should see a text saying there are no promotions.

#26 As Alice/Bob (restaurant owners), I want to be able to create promotions with customizable titles, images, descriptions and other relevant information, so that promotion looks attractive, and rules are clear and transparent. (Total Estimated Cost: 6; Priority: 1)

Tasks

- **#34** Create the UI of "create promotion" page (Able to add title, description and rewards and to upload images) (Estimated Cost: 4)
- **#35** Save promotions (including the subtasks it contains) in the database (Estimated Cost: 2)

Acceptance Criteria

- Given that Alice and Bob (as restaurant owners) are on the home page, when they click on the "Create a Promotion" button, then they should be directed to the "create promotion" page.
- Given that Alice and Bob (as restaurant owners) are on the "create promotion" page, when they click on "Add a Subtask" button, then a popup should appear for them to enter information for subtasks.
- Given that Alice and Bob (as restaurant owners) are on the "create promotion" page, when they click on the "Upload Images" button, then a popup should appear for them to pick and upload images for this promotion.
- Given that Alice and Bob (as restaurant owners) are on the "create promotion" page, when they click on the "Remove Images" button, then the relevant image should be removed.
- Given that Alice and Bob (as restaurant owners) are on the "create promotion" page and are done with filling in all the fields and creating all the subtasks, when they click on the "Post a Promotion" button, then a message shows up informing them that data has been sent to the database.
- Given that Alice and Bob (as restaurant owners) are on the "create promotion" page with problematic input, when they click on the "Post a Promotion" button, then a proper error message shows up informing them what field(s) have problematic input.
- Given that Alice and Bob (as restaurant owners) are on the "create promotion" page, when they click on the "Discard a Promotion" button, then the promotion is discarded.

#23 As Bob (a restaurant owner), I want to customize rules for a promotion. For example, order one item from each of three categories within ten days. (Total Estimated Cost: 5; Priority: 1)

Tasks

- #36 Add functionality of creating/deleting subtasks (Estimated Cost: 3)
- **#40** Add functionality of setting starting and expiration dates for promotions (Estimated Cost: 2)

Acceptance Criteria

- Given that Bob (as restaurant owner) wants to add a subtask to the promotion, when he clicks on the "Add a Subtask" button, then a popup should show up with a text box to enter the description.
- Given that Bob (as restaurant owner) has customized a subtask, when he clicks on the "Save" button, then this customized subtask is shown on the promotion template.
- Given that Bob (as restaurant owner) wants to set starting and expiration dates, when he clicks on the starting date or expiration date, then a date selection box should show up.
- Given that Bob (as restaurant owner) wants to set a limit on how long customers need to complete the tasks once started, when he clicks on "Validate for ...", then a date duration selection box should show up.
- Given that Bob (as restaurant owner) has set updates for promotions, when the real world time changes, the status of promotions should be changed to "Expired/Activated" in the database accordingly.

#24 As Alice (a restaurant owner), I want to set rules for promotion by picking from a list of presets. For example, visit the restaurant ten times within a month. (Total Estimated Cost: 5; Priority: 1)

Tasks

- #37 Popup for a preset customization form for each template (Estimated Cost: 2)
- #38 Add some presets templates for tasks, including (Estimated Cost: 3)
 - N-th visit
 - o Order X specific drinks
 - Visit N times within X days
 - o Spend X dollars in an order
 - o Buy X get Y free

Acceptance Criteria

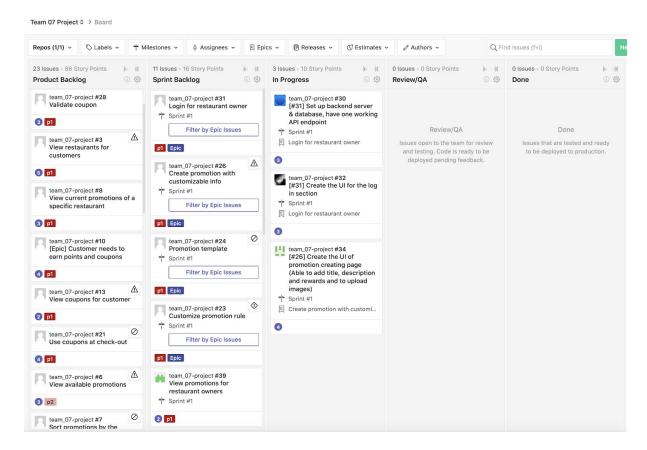
- Given that Alice (as restaurant owner) wants to select a preset, when she clicks on the "Preset Templates" button, then a list of presets are displayed with a brief description of the template.
- Given that Alice (as restaurant owner) wants to use a preset for her task, when she chooses a preset template, then a preset customization form pops out for easy template setup.
- Given that Alice (as restaurant owner) completed the preset customization form, when she clicks "Finish," then subtasks are loaded accordingly in the promotion creation page.

Division of Labour

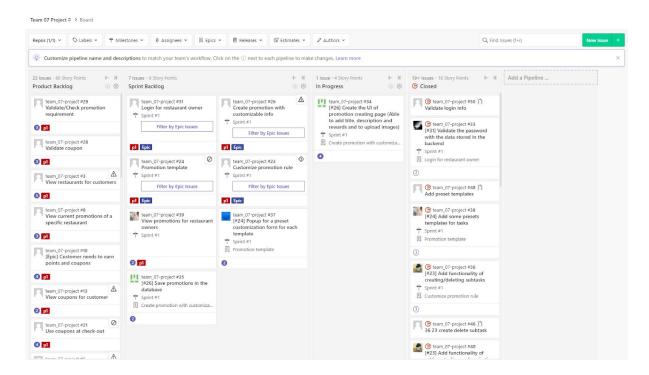
Task Number	Assignee	Cost	Expected Start On (June)	Expect End On (June)
#36	Yiyang Zhou	3	24	27
#40	Yiyang Zhou	2	25	27
#30	Yifei Yin	3	22	22
#37	Yifei Yin	2	27	28
#32	Ruixin Zhuang	3	25	26
#33	Ruixin Zhuang	2	27	28
#34	Xinyi Chen	4	25	28
#35	Xinyi Chen	2	27	28
#38	Min Qi Zhang	3	25	27
#39	Min Qi Zhang	2	27	28

Task Board

Beginning

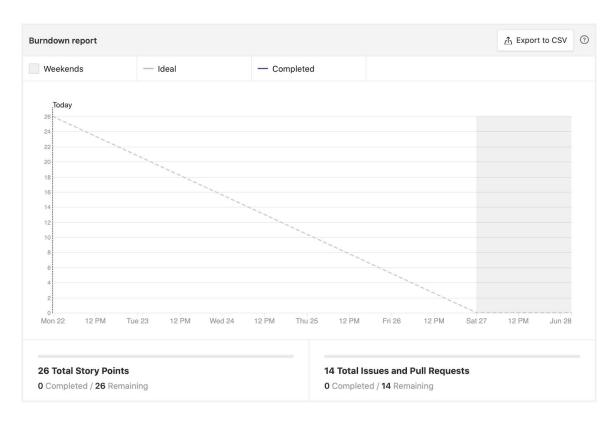


End

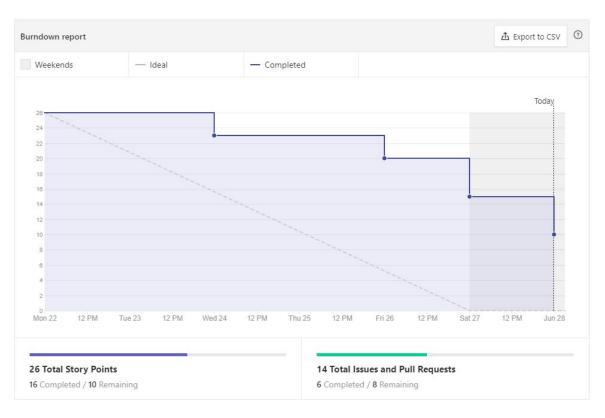


Burn-down Chart

Beginning



End



Sprint #2

Sprint Backlog

Stand-Alone Tasks

#59 Reconstruct the structure of our projects and code. (Estimated Cost: 4; Priority: 1)

User Stories & Tasks

#26 As Alice (a restaurant owner), I want to be able to create promotions with customizable titles, images, descriptions and other relevant information, so that promotion looks attractive, and rules are clear and transparent. (Total Estimated Cost: 6; Priority: 1)

Tasks:

- **#34** Create the UI of promotion creating page (Able to add title, description and rewards and to upload images) (Estimated Cost: 4; Priority: 1)
- **#35** Save promotions (including the subtasks it contains) in the database. (Estimated Cost: 2; Priority: 1)

Acceptance Criteria:

- Given that Alice (as restaurant owner) is on the home page, when she clicks on the "Create Promotion" button, then she should be directed to the create promotion page.
- Given that Alice (as restaurant owner) is on the create promotion page, when she clicks on a subtask, then a popup should appear for her to enter information for subtasks.
- Given that Alice (as restaurant owner) is on the create promotion page, when she clicks on upload images, then a popup should appear for her to pick and upload images for this promotion.
- Given that Alice (as restaurant owner) is on the create promotion page, when she clicks on the remove button in the images, then the relevant image should be removed.
- Given that Alice (as restaurant owner) is on the create promotion page and is done with filling in all the fields and creating all the subtasks, when she clicks on the "Submit" button, then a message shows up informing her that data has been sent to the database.
- Given that Alice (as restaurant owner) is on the create promotion page with problematic input, when she clicks on the "Post Promotion" button, then a proper error message shows up informing her what field(s) have problematic input.

#39 As Alice (a restaurant owner), I want to be able to see a list of promotions that I have posted. (Estimated Cost: 2; Priority: 1)

Acceptance Criteria:

- Given that Alice (as restaurant owner) is logged into the system and there are
 promotions created for this restaurant, when she is on the promotions page,
 then she should see a list of all promotions.
- Given that Alice (as restaurant owner) is logged into the system and there are no promotions created for this restaurant, when she is on the promotions page, then she should see a text saying there are no promotions.

#55 As Alice (a restaurant owner), I want to register a new account with an email, username and password. (Estimated Cost: 5; Priority: 1)

Acceptance Criteria:

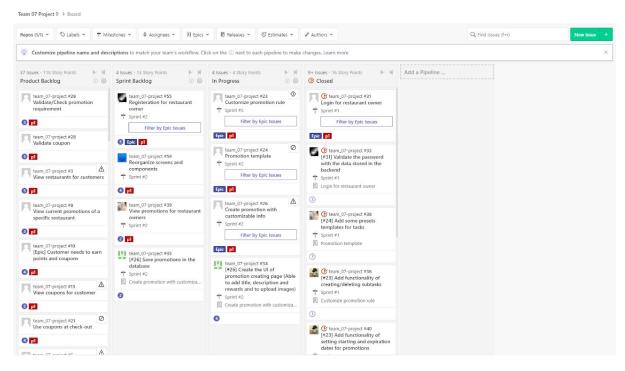
- Given that Alice (as restaurant owner) is at the registration page, when she clicks "Already have an account? Login", then she should be redirected to the login page.
- Given that Alice (as restaurant owner) is at the registration page, when she enters a valid email, username and password, then she should have a new account, be logged into the system and redirected to the home page.
- Given that Alice (as restaurant owner) is at the registration page, when she enters an invalid email, username or password, then she should be warned of incorrect inputs.

Division of Labour

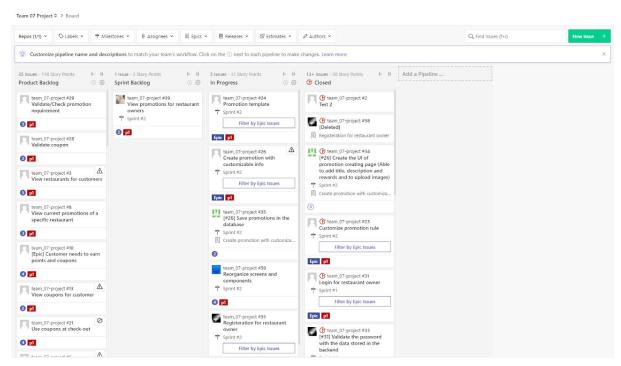
Task Number	Cost	Priority	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Assignment
#34	4 (1 left)	1	1	0	0	0	0	0	0	Xinyi Chen
#35	2	1	0	1	1	0	0	0	0	Xinyi Chen
#59	4	1	0	0	0	0	0	2	2	Yifei Yin
#39	2	1	0	0	0	1	1	0	0	Min Qi Zhang
#55	5	1	1	1	1	1	1	0	0	Ruixin Zhuang
Total	17		2	2	2	2	2	2	2	
Work Left	17		13	13	11	11	4	4	0	

Task Board

Beginning

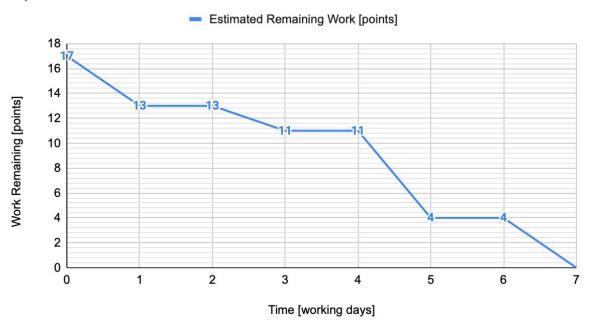


End

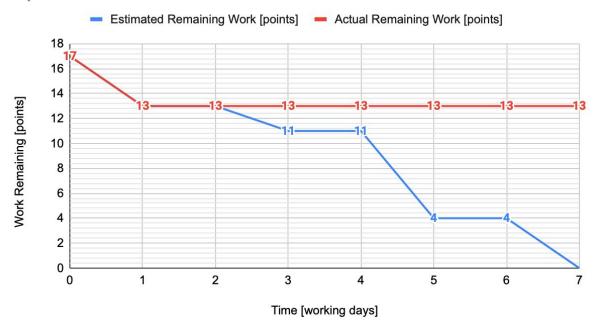


Burn-down Charts

Sprint #2 Burn-down Chart Initial



Sprint #2 Burn-down Chart Actual



Sprint #3

Sprint Backlog

Stand-Alone Tasks

```
#61 Restaurant owner navigation. (Estimated Cost: 4; Priority: 1)
#63 Learn unit test framework. (Estimated Cost: 3; Priority: 0)
#64 Learn unit test framework. (Estimated Cost: 3; Priority: 0)
#65 Learn unit test framework. (Estimated Cost: 3; Priority: 0)
#66 Learn unit test framework. (Estimated Cost: 3; Priority: 0)
#67 Learn unit test framework. (Estimated Cost: 3; Priority: 0)
#59 Reorganize screens and components. (Estimated Cost: 4; Priority: 1)
```

User Stories & Tasks

#55 As Alice (a restaurant owner), I want to register a new account with an email, username and password. (Estimated Cost: 5; Priority: 1)

Acceptance Criteria:

- Given that Alice (as a restaurant owner) is at the registration page, when she clicks "Already have an account? Login", then she should be redirected to the login page.
- Given that Alice (as a restaurant owner) is at the registration page, when she
 enters a valid email, username and password, then she should have a new
 account, be logged into the system and redirected to the home page.
- Given that Alice (as a restaurant owner) is at the registration page, when she
 enters an invalid email, username or password, then she should be warned of
 incorrect inputs.

#37 Popup for a preset customization form for each template (Estimated Cost: 2; Priority: 1)

This is a task of user story #24.

#35 Save promotions (including the subtasks it contains) in the database. (Estimated Cost: 2; Priority: 1)

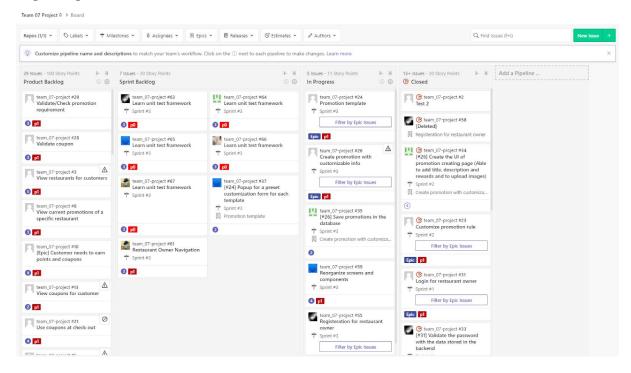
This is a task of user story #26.

Division of Labour

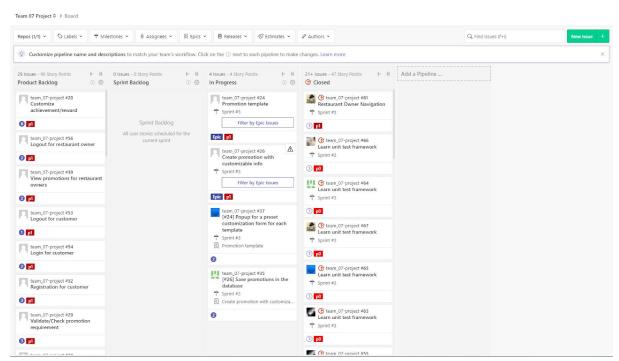
Task			Day							
Number	Cost	Priority	1	2	3	4	5	6	7	Assignment
#63	3	0	1	1	1	0	0	0	0	Ruixin Zhuang
#64	3	0	1	1	1	0	0	0	0	Xinyi Chen
#65	3	0	1	1	1	0	0	0	0	Yifei Yin
#67	3	0	1	1	1	0	0	0	0	Yiyang Zhou
#66	3	0	0	0	1	1	1	0	0	Min Qi Zhang
#59	4 (2 left)	1	0	0	0	1	1	0	0	Yifei Yin
#37	2	1	0	0	0	0	0	1	1	Yifei Yin
#55	5 (3 left)	1	0	0	0	1	1	1	0	Ruixin Zhuang
#35	2 (1 left)	1	0	0	0	1	0	0	0	Xinyi Chen
#61	4	1	0	0	0	1	1	1	1	Yiyang Zhou
Total	32		4	4	5	5	4	3	2	
Work Left	32		32	32	20	18	11	6	0	

Task Board

Beginning

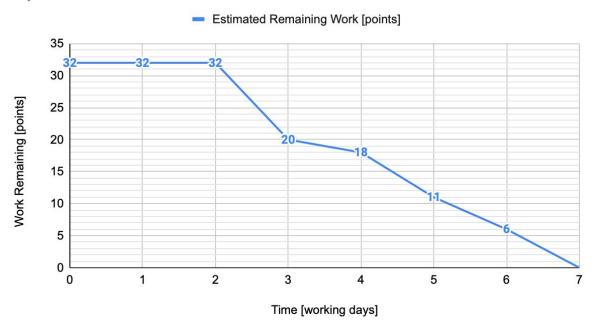


End

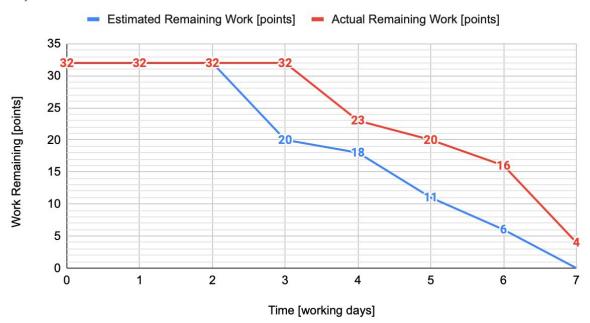


Burn-down Chart

Sprint #3 Burn-down Chart Initial



Sprint #3 Burn-down Chart Actual



Sprint #4

Sprint Backlog

Stand-Alone Tasks

#62 Fix the bugs of the image uploading in the "create promotion" page (i.e. the implementation of user story #26). (Estimated Cost: 1.5; Priority: 1)

User Stories & Tasks

Restaurant Owner

#37 Popup for a preset customization form for each template. (Estimated Cost: 2; Priority 1)

This is a task of user story #24.

#56 As Alice (a restaurant owner), I want to be able to logout of the system. (Estimated Cost: 2; Priority: 1)

Acceptance Criteria:

• Given that Alice (as restaurant owner) wants to log out, when she clicks the "Logout" button, then she should be logged out of the system and redirected to the login page.

#39 As Alice (a restaurant owner), I want to be able to see a list of promotions that my restaurant has. (Estimated Cost: 2; Priority: 1)

Acceptance Criteria:

- Given that Alice (as restaurant owner) has logged into the system and there are promotions created for this restaurant, when they are on the promotions page, then they should see a list of all promotions with all the information displayed.
- Given that Alice (as restaurant owner) has logged into the system and there are no promotions created for this restaurant, when they are on the promotions page, then they should see a text saying there are no promotions.

#20 As Alice (a restaurant owner), I want to be able to customize rewards for an achievement: give customers 100 points (more details specified below) or give them coupons (such as 20% off on any order, 5 dollars off on ordering this item) which they can use at our restaurant (Estimated Cost: 6; Priority: 1)

Acceptance Criteria:

• Given that Alice (as restaurant owner) is on the promotion page, when she chooses points as a reward, then a number input box will show up for Alice to enter how many points she would like to send to customers for this reward.

- Given that Alice (as restaurant owner) is on the create promotion page, when she chooses a coupon as a reward, then "create a coupon" and "choose from the existing coupons" buttons will show up.
- Given that Alice (as restaurant owner) chooses a coupon as a reward, when Alice clicks the "create a coupon" button, then the coupon creating screen will show up.
- Given that the coupon creating screen pops up, when Alice enters valid
 information for all the required fields (coupon title, coupon description, coupon
 expired date) and clicks the "Save" button, then the coupon is created, the
 coupon creating screen is closed and Alice should see the newly created coupon
 on the promotion page.
- Given that the coupon creating screen pops up, when Alice enters invalid information for any of the required fields and clicks the "Save" button, then an error message will show up indicating the problem.
- Given that the coupon creating screen pops up but Alice no longer wants to create coupons for this promotion, when Alice clicks on the x button on the coupon creating screen, then the coupon creating screen is closed and no coupon is created.
- Given that Alice (as restaurant owner) chooses a coupon as a reward, when Alice clicks the "choose from the existing coupons" button, then the coupon selecting screen will show up and it will show a list of all the existing coupons of her restaurant.
- Given that the coupon selecting screen pops up, when Alice chooses one coupon for this promotion and clicks on the "Save" button, then the coupon is saved as the reward of the promotion, the coupon selecting screen is closed and Alice should see the coupon she chose on the promotion page.
- Given that the coupon selecting screen pops up but Alice no longer wants to select coupons for this promotion, when Alice clicks on the x button on the coupon selecting screen, then the coupon selecting screen is closed and no coupons are selected.

Customer

#52 As Jerry (a customer), I want to register a new account with my email, username and password. (Estimated Cost: 3; Priority: 1)

Acceptance Criteria:

- Given that Jerry (as a customer) is at the registration page, when he clicks "Already have an account? Login", then he should be redirected to the login page.
- Given that Jerry (as a customer) is at the registration page, when he enters valid email, username and password and presses on the "Register" button, then he should have a new account, be logged into the system and redirected to the home page.
- Given that Jerry (as a customer) is at the registration page, when he enters invalid email, username and password, then he should be warned of incorrect inputs.

#54 As Jerry (a customer), I want to be able to login to the system with my email or username and password. (Estimated Cost: 1; Priority: 1)

Acceptance Criteria:

- Given that Jerry (as a customer) wants to use our product, when he opens the login page, then there should be two input fields on the page for email or username and password.
- Given that Jerry (as a customer) has filled in the email/username and password correctly, when he clicks on the "Login" button, then he should be logged in and redirected to the home page.
- Given that Jerry (as a customer) has filled in the email/username and password incorrectly, when he clicks on the "Login" button, then an error message shows up.

#53 As Jerry (a customer), I want to be able to logout of the application. (Estimated Cost: 1; Priority: 1)

Acceptance Criteria:

• Given that Jerry (as a customer) wants to log out, when he clicks the "Logout" button, then he should be logged out of the system and redirected to the login page.

#3 As Jerry (a customer), I want to see a list of all the current promotions. (Estimated Cost: 3; Priority: 1)

Acceptance Criteria:

- Given that Jerry (as a customer) has logged into the system, when he is on the home page, then he should see a list of all current promotions.
- Given that Jerry (as a customer) has logged into the system, when he clicks one of the promotions, then he should be redirected to another page to see the promotion details.

#8 As Jerry (a customer), I want to see promotion details, so that I can know my progress and other information about a promotion. (Estimated Cost: 4; Priority: 1)

Acceptance Criteria:

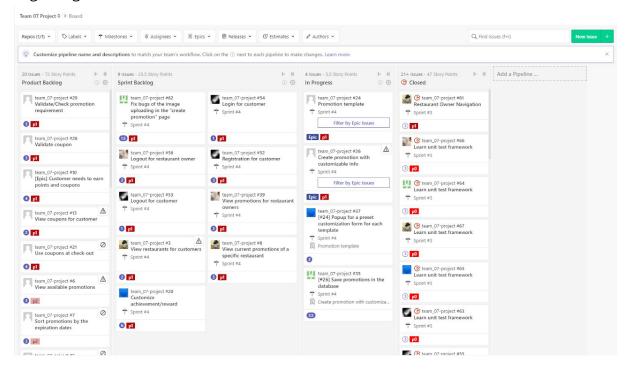
• Given that Jerry (as a customer) has clicked into the promotion details, when he is on the detail page, he should see the restaurant name, promotion images, the promotion title, the promotion description, the promotion time period and his current progress.

Division of Labour

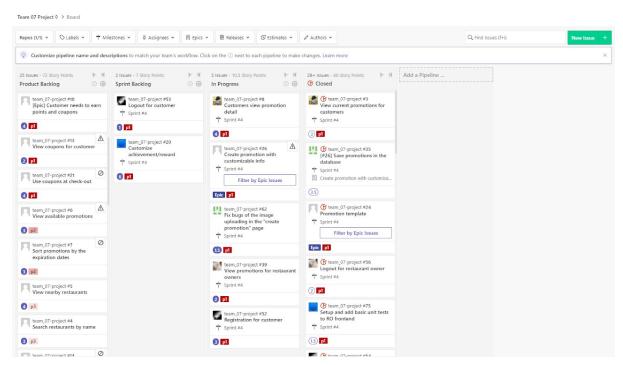
Task Number	Cost	Priority	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Assignment
Number	COSt	1 Hority	•							Assignment
#37	2 (1 left)	1	1	0	0	0	0	0	0	Yifei Yin
#35	3.5 (2 left)	1	0.5	0	0.5	1	0	0	0	Xinyi Chen
#62	1.5	1	0	0	0	0	1	0.5	0	Xinyi Chen
#56	2	1	0	1	1	0	0	0	0	Min Qi Zhang
#52	3	1	1	1	1	0	0	0	0	Ruixin Zhuang
#54	1	1	0	0	0	0	1	0	0	Ruixin Zhuang
#39	2	1	0	0	0	1	1	0	0	Min Qi Zhang
#53	1	1	0	0	0	0	0	1	0	Ruixin Zhuang
#3	3	1	0	1	1	1	0	0	0	Yiyang Zhou
#8	4	1	0	0	0	0	2	2	0	Yiyang Zhou
#20	6	1	0	2	1	2	1	0	0	Yifei Yin
Total	29		2.5	5	4.5	5	6	3.5	0	
Work Left	29		27	27	22	15.5	6.5	0	0	

Task Board

Beginning

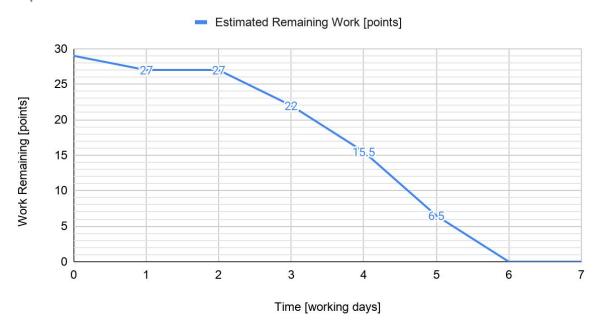


End



Burn-down Chart

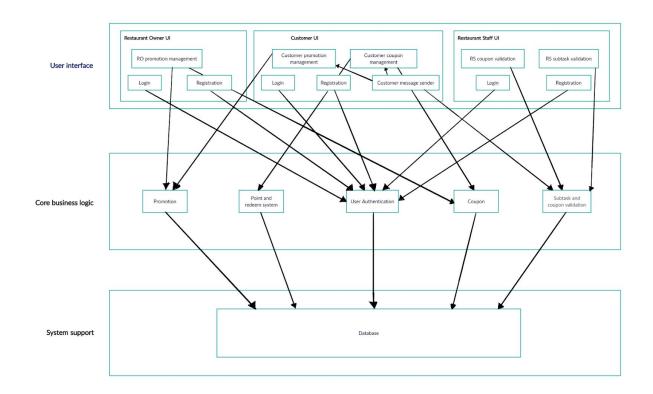
Sprint #4 Burn-down Chart Initial



Sprint #4 Burn-down Chart Actual



High Level Architecture Diagram



High resolution version:

https://user-images.githubusercontent.com/29013266/87979568-489c4380-caa0-11ea-8c90-a7f1fc29e985.png

(Bold texts in description indicates components in the core business logic layer)

User Interface

RO Promotion Management

This component contains UI and functions for creating and viewing promotion as a restaurant owner. It needs to be able to create a new promotion and get promotion details.

Dependencies

- 1. (View Promotion) This component sends view promotion requests to **promotion** and renders promotions in the frontend.
- 2. (Create Promotion) This component wraps user input and sends create promotion requests to **promotion** and **coupon** to create a new promotion.

Login

Note: Identical for all 3 login components

This component contains UI and functions for login. It needs to be able to send login credentials.

Dependencies

1. (Login) This component wraps user input (identifier and password) and sends login requests to **User Authentication**.

Register

Note: Identical for all 3 register components

This component contains UI and functions for registration. It needs to be able to send username/email/password to register a new user.

Dependencies

1. (Register) This component wraps user input (username, email and password) and sends register requests to **User Authentication**.

Customer Promotion Management

This component contains UI and functions for viewing promotion as a customer. It needs to be able to check the current status of a promotion.

Dependencies

1. (View Promotion) This component sends view promotion requests to **promotion** and renders the response including subtask status in the frontend.

Customer Coupon Management

This component contains UI and functions for checking and redeeming coupons. It needs to be able to check the current coupon that a customer has, check how many points they have and redeem a coupon using the points.

Dependencies

- 1. (Check coupon) This component sends check coupon requests to **Coupon** and renders coupons in frontend.
- 2. (Check point) This component sends check point requests to **Points and redeem system** and shows the number in frontend.
- (Redeem coupon) This component sends Redeem coupon requests to **Points** and redeem system and Coupon to redeem a selected coupon with some points.

Customer Message Sender

Note: The word "message" here means a request message sent by a customer to indicate that he wants a subtask to be validated or wants to use a coupon.

This component contains UI and functions for validating subtasks and using coupons. It needs to be able to send a message about the subtask that a customer completes or a coupon that a customer wants to use. It depends on Customer coupon management and Customer promotion management since it needs customer's coupon and promotion.

Dependencies

- 1. (Use coupon) This component sends use coupon requests to **Subtask and coupon validation** with the information about that coupon.
- 2. (Complete subtask) This component sends complete subtask requests to **Subtask and coupon validation** with the information about that subtask.

RS Coupon Validation

This component contains UI and functions for validating coupon usage. It needs to be able to accept or reject the messages sent by a customer about using a particular coupon.

Dependencies

- 1. (Get coupon message) This component sends get coupon message requests to **Subtask and coupon validation** and shows all received coupon messages.
- 2. (Validate coupon message) This component sends validate coupon message requests to **Subtask and coupon validation** about accepting or rejecting a particular coupon message.

RS Subtask Validation

This component contains UI and functions for validating subtask status. It needs to be able to accept or reject the messages sent by a customer about completing a particular subtask.

Dependencies

- 1. (Get subtask message) This component sends get subtask message requests to **Subtask and coupon validation** and shows all received subtask messages.
- 2. (Validate subtask message) This component sends validate subtask message requests to **Subtask and coupon validation** about accepting or rejecting a particular subtask message.

Core Business Logic

Promotion

This component provides API endpoints about promotion to frontend and serve as a middleware to translate requests into corresponding database actions. It depends on the database since it needs to get status and details of the promotion and create a new promotion entry in the database. It also checks if a customer has completed all subtasks of a promotion and sends corresponding rewards.

Dependencies

- 1. (Customer View Promotion) If this component receives a view promotion request from the customer, it queries the database for all promotions. Then it checks this customer's subtask status of each promotion and sends them back.
- 2. (Restaurant Owner View Promotion) If this component receives a view promotion request from restaurant owner, it queries the database for promotion of a specific restaurant and sends them back.
- 3. (Restaurant Owner Create Promotion) If this component receives a create promotion request from the restaurant owner, it creates a new promotion in the database with information provided in the request.

Point And Redeem System

This component provides API endpoints about points and redeem coupons to frontend and serve as a middleware to translate requests into corresponding database actions. It depends on the database since it needs to get points of a customer and redeem coupons with points.

Dependencies

- 1. (Check Point) If this component receives a check point request, it queries the database for points of a particular customer and sends it back.
- 2. (Redeem Coupon) If this component receives a redeem coupon request, it deduct the provided amount of points from that customer.

User Authentication

This component provides API endpoints about user authentication to frontend and serve as a middleware to translate requests into corresponding database actions. It depends on the database since it needs to check for login credentials and register a new user to the system.

Dependencies

- 1. (Login) If this component receives a login request, it queries the database and checks if the login credentials do match. If they matchs, send back an authentication token. If not, send an error.
- 2. (Register) If this component receives a register request, it first queries the database to see if the username/email already exists. If not, it creates a new user in the database.

Coupon

This component provides API endpoints about coupons to frontend and serve as a middleware to translate requests into corresponding database actions. It depends on the database since it needs to check and manage a customer's coupon.

Dependencies

- 1. (Create Promotion) If this component receives a create promotion request, it exact the coupon info in this promotion and create this coupon in the database if this is a new coupon.
- 2. (Check Coupon) If this component receives a check coupon request, it queries the database to find the coupon that a customer has.
- 3. (Redeem Coupon) If this component receives a redeem coupon request, it adds a coupon to the specified customer.

Subtask and Coupon Validation

This component provides API endpoints about subtask and coupon validation to frontend and serve as a middleware to translate requests into corresponding database

actions. It depends on the database since it needs to get and validate subtask/coupon messages.

Dependencies

- 1. (Get coupon message) If this component receives a get coupon message request, it queries the database for all coupon messages and sends them back.
- 2. (Validate coupon message) If this component receives a validate coupon message request, it will delete the message if it is a rejected one. It will delete the coupon and the message if it is a accepted one.
- 3. (Get subtask message) If this component receives a get subtask message request, it queries the database for all coupon messages and sends them back.
- 4. (Validate subtask message) If this component receives a validate subtask message request, it will delete the message if it is a rejected one. It will update the subtask status of the promotion and delete the message if it is a accepted one.

System Support

Database

This component is the database of the whole project. It provides basic database actions like querying/inserting and deleting. It is the dependency for all components in the core business logic.

Retrospection

Brief Overview

From deliverable 3 to deliverable 4, we have learnt the unit test framework and wrote some test cases for the current sprint. In the product backlog, we have added those learning tasks with their estimated cost and priority. We have improved our burn-down charts and division of labour for later sprints, according to the comments from deliverable 3. We had a conversation with the client. Our client wants to see the customer side of the product, so we are starting to work on the customer's user stories.

Velocity

Sprint 1

Estimated: 26

Actual: 10

Sprint 2

Estimated: 17

Actual: 4

Sprint 3

Estimated: 32

Actual: 26

Sprint 4

Estimated: 29 Actual: 11.5

We did not follow our plans exactly. Especially during the second sprint, many of us had to spend much time on the midterms. We have lowered our estimated velocity but still could not manage to finish it. In the third sprint, we learned that we need unit tests for our projects, so we spent 15 estimated points in sprint 3 to learn how to do tests and other points to deal with the leftover from sprint 2. As for sprint 4, we mainly focused on the customer side. In contrast to sprint 2, sprint 3 and sprint 4 went very smoothly.

Difficulties Encountered

We have encountered some difficulties from the second to fourth sprint:

1. During the meeting with Jaya, she suggested that we have to merge user stories for login, register and logout. However, we are implementing those user stories

- in the current sprint. It is difficult for us to modify those user stories in the task board and sprint backlog.
- 2. We need to spend time on setting up the unit test environment. To complete this set-up, it must go over the following processes: create a branch, change *package.json*, open pull request, peer code review and merge. After we complete the set-up, we do not have much time left in this sprint to write many unit tests.

Contingency Plan

We did not get a chance to use our contingency plan since all situations mentioned in the contingency plan have not happened to our team.

Changes

Changes to Persona

We have removed Bob (a restaurant owner) because Alice already covers his requirements. Since clients would need a staff to verify and redeem coupons, we added a new persona — Adam Whittaker (a restaurant staff).

Restaurant Staff - Adam Whittaker

Adam is a 30-year-old man who is living in Toronto. He works in a mom-and-pop restaurant as restaurant staff. The restaurant Adam works for is now considering having an achievement-based loyalty system to attract customers. As a staff, he wants an application that can easily redeem and verify coupons for customers. Adam is familiar with many technologies; he uses all kinds of applications on his computer, smartphone, and tablet. He hopes this application has a mobile version which is more convenient for him.

Changes to Product Backlog

- 1. Since we have changed our persona, we modified our user stories in the product backlog as well.
 - We deleted the appearances of Bob's name and moved Bob's user stories to Alice since Alice also covers Bob's requirements.
 - Since the main job of restaurant staff is to redeem and verify coupons for customers, we moved the restaurant owner's user stories #29, #28 in the validate coupons and promotions section to restaurant staff.
 - We also rewrote user stories #29 and #28 since the original user stories do not contain enough information for developers to estimate how long it would take to implement it.

o Before:

#29 As Alice (a restaurant owner), I want to check if a customer has satisfied our promotion requirements with the subtask 40 description within 10 seconds.

■ **#28** As Alice (a restaurant owner), I want to validate customers' coupons by scanning QR codes within 10 seconds.

After:

- **#29** As Adam (a restaurant staff), I want to verify if a customer has completed a task by confirming the request message sent by the customer. (Estimated Cost: 3; Priority: 1)
- **#28** As Adam (a restaurant staff), I want to validate customers' coupons by verifying the request message sent by the customer. (Estimated Cost: 3; Priority: 1)
- 2. We rewrote #10 since it doesn't make sense to have an epic with such high priority:

Before: #10 (Epic) As Jerry (a customer), I want to earn points and coupons from accomplishing achievements.

After: #10 As Jerry (a customer), I want to notify the restaurant about the subtask I am completing by pressing a button on the app, so the restaurant can validate my progress on the achievement.

3. We rewrote #21 since the original user stories do not contain enough information for developers to estimate how long it would take to implement it.

Before: #21 As Jerry (a customer), I want to use coupons at check-out, so that I can get discounts from restaurants.

After: #21 As Jerry (a customer), I want to notify the restaurant about the coupon I am using by pressing a button on the app.

- 4. We removed user story #12 because it is not a core requirement. User age or gender information are not being collected through the app.
 - **Before: #12** As Alice (a restaurant owner), I want to see the demographics (age, gender and food preference) of my customers.
- 5. We increased the estimated cost for task #35 from 2 story points to 3.5 story points in the sprint planning meeting. Because uploading images to the backend takes more steps than we thought.
 - #35 Save promotions (including the subtasks it contains) in the database.
- 6. We changed the user story #3 according to the client requirements that customers should see promotions not restaurants on the home page:

Before: #3 As Jerry (a customer), I want to see a list of all the restaurants, so I can find the ones that attract me.

After: #3 As Jerry (a customer), I want to see a list of all the current promotions.

7. We changed the user story #8 for the same reason as #3:

Before: #8 As Jerry (a customer), I want to see all the current promotions of a specific restaurant.

After: #8 As Jerry (a customer), I want to see promotion details, so that I can know my progress and other information about a promotion.

- 8. We increased the cost of task #37 from 2 to 3 because the task was more complex as we expected; some refactoring on existing code was necessary.
 - **#37** Popup for a preset customization form for each template.
- 9. We decreased the estimated cost for task #55 from 5 story points to 3 story points during sprint #3. Because we thought the initial setup could be difficult but it turns out to be easier than we thought.
 - **#55** As Alice (a restaurant owner), I want to register a new account with an email, username and password.
- 10. We combined the redundant user stories (login, register and logout), according to the suggestion given by Jaya in the interview. To reduce possible confusion on user story/task numbers and story points calculations, we are not creating new issues for these user stories. Our old sprint backlogs, task board, burn-down chart, acceptance criterias and references to old user stories remain unchanged. The estimated cost for new user stories is the sum of their tasks.

Before:

- **#52** As Jerry (a customer), I want to register a new account with my email and password.
- **#54** As Jerry (a customer), I want to be able to login to the system with my email and password.
- #53 As Jerry (a customer), I want to be able to logout of the application.
- **#55** As a restaurant owner, I want to register a new account with an email, restaurant name and password.
- **#31** As a restaurant owner, I want to be able to login to the system with my email and password.
- **#56** As a restaurant owner, I want to be able to logout of the system.
- **#78** As Adam (a restaurant staff), I want to register a new account with my email and password.
- **#77** As Adam (a restaurant staff), I want to be able to login to the system with my email and password.
- **#79** As Adam (a restaurant staff), I want to be able to logout of the application.

After:

As a user, I want to register a new account with my email, username and password.

- #52 for customer
- #55 for restaurant owner
- #78 for restaurant staff

As a user, I want to be able to login to the system with my email or username and password.

• #54 for customer

- #31 for restaurant owner
- #77 for restaurant staff

As a logged-in user, I want to be able to logout of the application. (Estimated Cost: 4; Priority: 1)

- #53 for customer
- #56 for restaurant owner
- #79 for restaurant staff
- 11. We added two more user stories because we changed the user stories #28 and #29. Those two user stories are required for #28 and #29:
 - **#82** As Adam (a restaurant staff), I want to see a list of customers that want to have their progress of achievements validated.
 - **#83** As Adam (a restaurant staff), I want to see a list of customers that want to use their coupons.

Meeting Log

July 14th, 17:00-17:20

- 1. How and where to create/manage coupons? The separate page or within the create promotion page?
 - a. Coupon system is not super important; creating coupons in the create promotion page is fine.
- 2. Confirm with the client whether we can hard code restaurant information with newly registered restaurant owner accounts.
 - a. Hard coding is ok for now
 - b. Ideally, a new user can create a new restaurant, and they can generate employee codes from the system then other employees can register using this code.
- 3. How should the promotions & restaurants be displayed?
 - a. Just having a page with a list of promotions is fine.
 - b. Ideally, the home page should also include the coupons I have, so customers have a higher chance to visit the restaurant again.

Audio recording available upon request.

July 20th, 15:10-15:15

Yifei: The most common approach for validation is scanning a QR code. We want to try another approach. Let me describe how that works. When a customer wants a restaurant owner/staff to verify (e.g. completed a task, redeem a reward), the customer needs to open their app, click on a button "I'm completing this task", this will generate a 3-digit code, the customer needs to tell the cashier this code. The cashier will receive a message with a 3-digit code on their app, then just simply click on that message and verify. From the restaurant's side, the message also includes the username of the customer, so that if the customer forgot the code, the cashier can also ask the username to verify.

Daniel: (Double checking the process), then how does the restaurant owner verify that the customer has completed a specific achievement they are supposed to complete?

Yifei: They see a list. They can just click on the item they want to verify. Then it will have a popup show up.

Daniel: They still have to be in person to verify that you actually got this item manually?

Yifei: For the restaurant side, yes. They just don't need to scan the QR code. That's the only difference.

Daniel: That works. But also when you're doing an achievement which is multi-tier, instead of redeem here, you need to verify that you completed this milestone towards the final goal, right?

Yifei: Exactly.

Daniel: That sounds good!

Link to the video recording:

https://drive.google.com/file/d/1AAlrgTaarV_nP08k3NWbbn-oLVci5eX6/view?usp=sharing