Moyobob

Design and Planning

Team 5

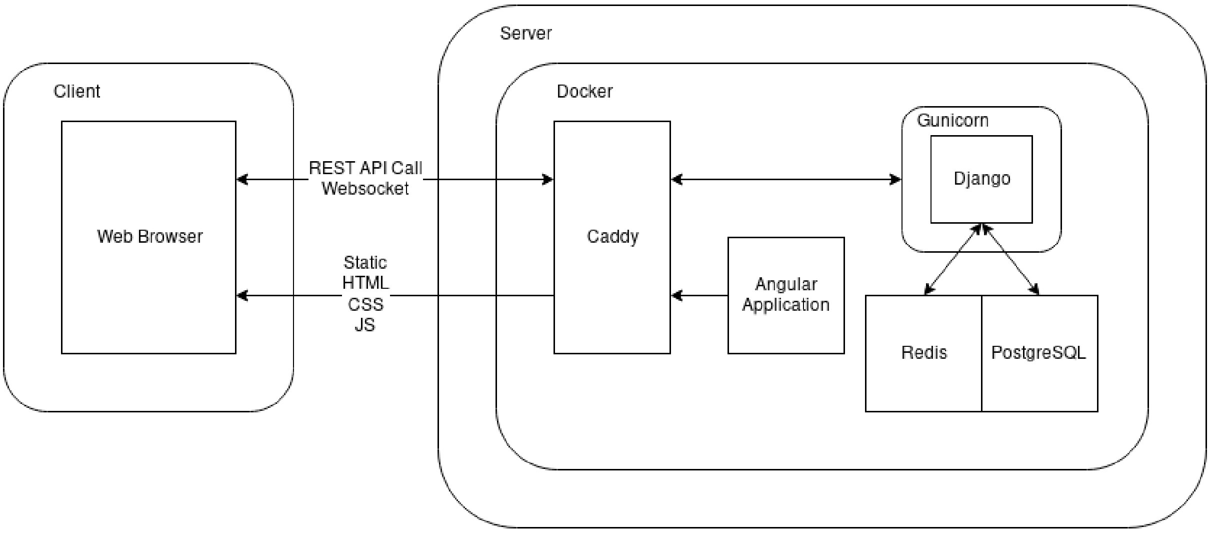
2018/10/22, Version 1.0

Revision

- 1.0 2018-10-22 - initial document :tada:

System Architecture

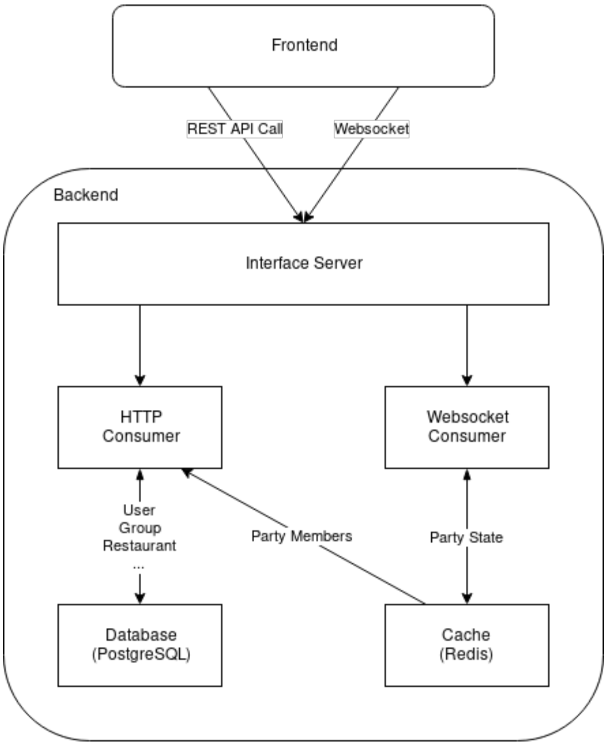
Deployment Architecture


Server
Client
Docker
Gunicorn
Django
REST API Call
Websocket
Web Browser
Caddy
Static
HTML
CSS
JS
Angular Application
Redis
PostgreSQL

- Docker and docker-compose for deploying
  - Easy to deploy
- Gunicorn for WSGI
  - Zero configuration
  - Small and fast
- Caddy for Web Server
  - Easy configuration

  - Automatic HTTPS

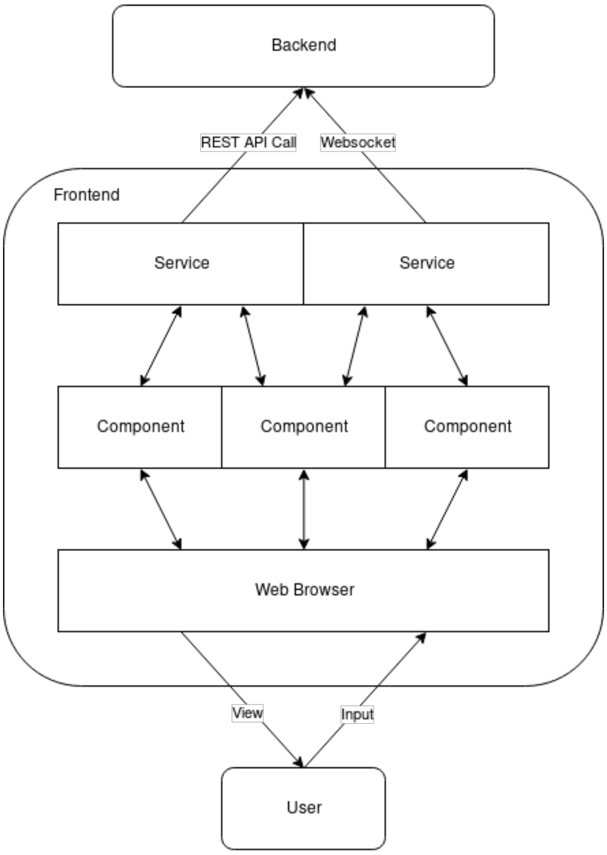
Backend Architecture


Frontend
REST API Call
Websocket
Backend
Interface Server
HTTP Consumer
Websocket Consumer
User
Group
Restaurant
...
Party Members
Party State
Database (PostgreSQL)
Cache (Redis)

- Websocket with Django Channels
- Cache with Redis

We decided to show information like party status, which needs to interact and be notified to users as they change the information, using Websocket and Cache.

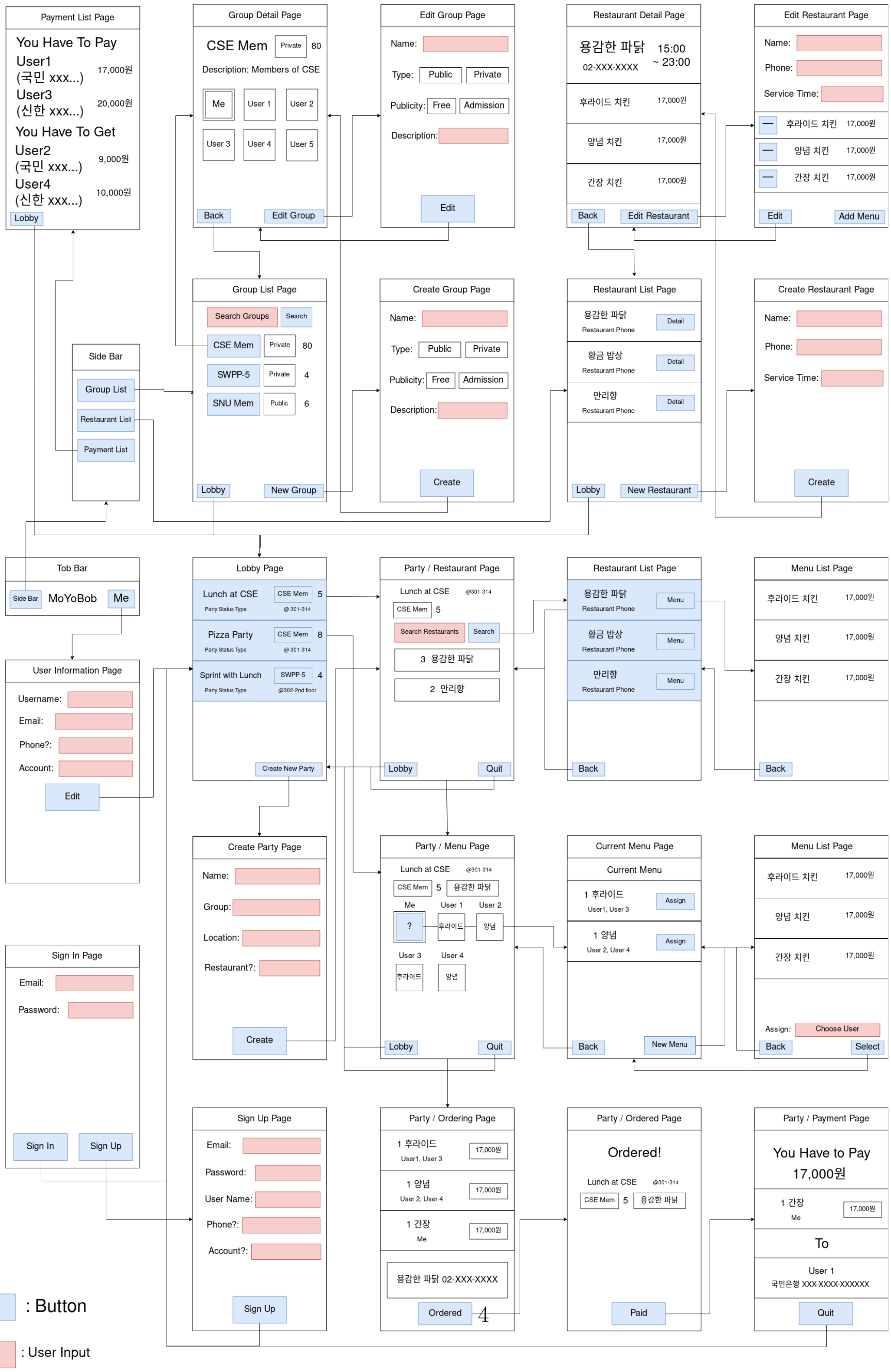
Frontend Architecture


Backend
REST API Call
Websocket
Frontend
Service
Service
Component
Component
Component
Web Browser
View
Input
User

- Websocket with rxjs
- Angular's Service-Component system

Design Detail

Frontend Design Detail


Payment List Page
You Have To Pay
User1
(국민 xxx...)
17,000원
User3
(신한 xxx...)
20,000원
You Have To Get
User2
(국민 xxx...)
9,000원
User4
(신한 xxx...)
10,000원
Lobby
Group Detail Page
CSE Mem
Private
80
Description: Members of CSE
Me
User 1
User 2
User 3
User 4
User 5
Back
Edit Group
Edit Group Page
Name:
Type:
Public
Private
Publicity:
Free
Admission
Description:
Edit
Restaurant Detail Page
용감한 파닭
02-XXX-XXXX
15:00
~ 23:00
후라이드 치킨
17,000원
양념 치킨
17,000원
간장 치킨
17,000원
Back
Edit Restaurant
Edit Restaurant Page
Name:
Phone:
Service Time:
—
후라이드 치킨
17,000원
—
양념 치킨
17,000원
—
간장 치킨
17,000원
Edit
Add Menu
Side Bar
Group List
Restaurant List
Payment List
Group List Page
Search Groups
Search
CSE Mem
Private
80
SWPP-5
Private
4
SNU Mem
Public
6
Lobby
New Group
Create Group Page
Name:
Type:
Public
Private
Publicity:
Free
Admission
Description:
Create
Restaurant List Page
용감한 파닭
Restaurant Phone
Detail
황금 밥상
Restaurant Phone
Detail
만리향
Restaurant Phone
Detail
Lobby
New Restaurant
Create Restaurant Page
Name:
Phone:
Service Time:
Create
Tob Bar
Side Bar
MoYoBob
Me
User Information Page
Username:
Email:
Phone?:
Account:
Edit
Lobby Page
Lunch at CSE
CSE Mem
5
Party Status Type
@ 301-314
Pizza Party
CSE Mem
8
Party Status Type
@ 301-314
Sprint with Lunch
SWPP-5
4
Party Status Type
@302-2nd floor
Create New Party
Party / Restaurant Page
Lunch at CSE
@301-314
CSE Mem
5
Search Restaurants
Search
3 용감한 파닭
2 만리향
Lobby
Quit
Restaurant List Page
용감한 파닭
Restaurant Phone
Menu
황금 밥상
Restaurant Phone
Menu
만리향
Restaurant Phone
Menu
Back
Menu List Page
후라이드 치킨
17,000원
양념 치킨
17,000원
간장 치킨
17,000원
Back
Create Party Page
Name:
Group:
Location:
Restaurant?:
Create
Party / Menu Page
Lunch at CSE
@301-314
CSE Mem
5
용감한 파닭
Me
User 1
User 2
?
후라이드
양념
User 3
User 4
후라이드
양념
Lobby
Quit
Current Menu Page
Current Menu
1 후라이드
User1, User 3
Assign
1 양념
User 2, User 4
Assign
Back
New Menu
Menu List Page
후라이드 치킨
17,000원
양념 치킨
17,000원
간장 치킨
17,000원
Assign:
Choose User
Back
Select
Sign In Page
Email:
Password:
Sign In
Sign Up
Sign Up Page
Email:
Password:
User Name:
Phone?:
Account?:
Sign Up
Party / Ordering Page
1 후라이드
User1, User 3
17,000원
1 양념
User 2, User 4
17,000원
1 간장
Me
17,000원
용감한 파닭 02-XXX-XXXX
Ordered
Party / Ordered Page
Ordered!
Lunch at CSE
@301-314
CSE Mem
5
용감한 파닭
Paid
Party / Payment Page
You Have to Pay
17,000원
1 간장
Me
17,000원
To
User 1
국민은행 XXX-XXXX-XXXXXX
Quit

🟦 : Button

🟥 : User Input

Common

- Top Bar Component
- Side Bar Component

Top Bar Component

- Logo : `<img>`
- Side Bar Button : `<button>`
- My Info Button : `<button>`

Side Bar Component

Shown when pressing Side Bar Button in Top Bar Component.

- Group List Button : `<button>`
- Restaurant List Button : `<button>`
- Payment List Button : `<button>`

Lobby (`/party`)

The Main Page.

- Party List : `<ul>`
  - Party Info : `<div>`
    - Party Name : `<span>`
    - Group Name : `<span>`
    - Number of Participants : `<span>`
    - Current State : `<span>`
- Make Party Button : `<button>`

Create Party (`/party/create`)

Can create Party.

- Party Name : `<input>`
- Party Characteristic : `<select>`
  - Public : `<option>`
  - Protected : `<option>`
  - Private : `<option>`
- Group Name : `<input>`
- Place to Eat : `<input>`
- Restaurant : `<input>`
- Submit Button : `<button>`

Party (`/party/:id`)

Provides the main features such as choosing menus. Different infos are shown with respect to participation status and party status.

- Shows regardless of participation status

  - Party Name : `<h2>`
  - Group Name : `<h3>`
  - Number of Participants : `<span>`
  - Restaurant Chosen: `<span>`
  - etc
  - Lobby Button : `<button>`
  - Leave Button : `<button>`
- Not Participating
  - Clicking the Party in the Lobby changes the participation status to Participating
- Participating: when participating, shows the corresponding component.
  - Selecting Restaurant
  - Selecting Menu
  - Ordering
  - Ordered
  - Payment
  - End

Selecting Restaurant Component

- Search Restaurant : `<input>`
  - Search Button : `<button>`
- List of Selected Restaurant : `<ul>`; most voted top
  - Pressing the restaurant votes for that restaurant.
  - Proceed Button : `<button>`

Selecting Menu Component

- User List : `<table>`
  - User Name : `<span>`
  - Menu : `<div>`
  - Proceed Button : `<button>`

Ordering Component

- Payment Info : `<ul>`
  - Users' name and price are shown for each menu (`<li>`)
- Phone number for restaurant : `<span>`
- Ordered Button : `<button>`

Ordered Component

- A message is shown to notify that the order is complete.
- Expected Time : `<span>`
- Payment Complete : `<button>`

Payment Component

Shows the required amount of money to pay.

- how much one should pay : `<h2>`
- the person who paid for the meal : `<h3>`
- the means to pay the bill : `<span>`
  - Account Number etc; retrieved from user info or can register when the case is the user registered only for this party.
- menu one picked and the price : `<ul>`

Menu List

Every user can select his or her menu.

- List of chosen menu : `<ul>`
- Add Menu Button : `<button>`

User Info (`/user/:username`)

Shows or modifies user information.

- Name : `<span>`
- E-mail : `<span>`
- Contact Info : `<span>`
- Payment Info : `<span>`
- Modify Button : `<button>`

Group List (`/group`)

Shows the list of the group.

- Find Group : `<button>`
- Group List : `<ul>`
  - Group Name : `<span>`
- Create Group Button : `<button>`

Group (`/group/:id`)

Shows or modifies the information of the group.

- Name : `<span>`
- Description: `<span>`
- Users : `<ul>`
- Leader : `<span>`
- Edit Group Button : `<button>`

Edit Group (`/group/:id/edit`)

Shows the view to edit group.

- Group Name : `<input>`
- Characteristic : `<select>`
  - Public : `<option>`
  - Protected : `<option>`

    - Private : `<option>`
- Confirm Button : `<button>`

Create Group

Shows the view to add group. (`/group/create`)

- Group Name : `<input>`
- Characteristic : `<select>`
    - Public : `<option>`
    - Protected : `<option>`
    - Private : `<option>`
- Create Button : `<button>`

Restaurant List Component (`/restaurant`, `/party/:id`)

List all restaurants or search for the specific restaurant.

- Search Bar : `<input>`
- Search Button : `<button>`
- List of Restaurants : `<li>`
    - Restaurant Name : `<span>`
    - Restaurant Category : `<span>`

Edit Restaurant Component (`/restaurant/:id/edit`)

Shows the view to edit restaurant.

- Restaurant Name : `<input>`
- Phone Number : `<input>`
- Category : `<input>`
- Menu Remove Button : `<button>`
- Menu Add Button : `<button>`
- Confirm Button : `<button>`

Create Restaurant Component (`/restaurant/create`)

Shows the view to create restaurant.

- Restaurant Name : `<input>`
- Phone Number : `<input>`
- Category : `<input>`
- Create Button : `<button>`

Add Menu Component

Shows the view to add menus.

- Menu Name : `<input>`
- Price : `<input>`
- Confirm Button: `<button>`

Payment List (`/payment`)

Shows every payment one made, either should pay or should be paid.

- Should Pay : `<ul>`
- Should be Paid : `<ul>`

Backend Design Detail

In DB

Models stored in SQL Database

Party

- name: string
- state: id of PartyState
- type: PartyType
- location: string
- leader: ForeignKey of User
- since: datetime

PartyType

extends SmallIntegerField, and works like enum

- values
  - `0`: Public Party
  - `1`: Group-Opened Party
  - `2`: Closed Party

Group

- name: string
- description: string
- type: GroupType
- publicity: GroupPublicity
- leader: ForeignKey of User
- members: ForeignKey of User (ManyToMany)

GroupType

extends SmallIntegerField, and works like enum

- values
  - `0`: Public
  - `1`: Private

GroupPublicity

extends SmallIntegerField, and works like enum

- values
  - `0`: Free
  - `1`: Admission Needed

User

- id: string
- username: string
- email: string
- phone: string (Nullable)
- accounts: Account

Account

custom field

- name: string
- bank: string
- account: string

Restaurant

- name: string
- category: Category
- phone: string
- service_time_from: time
- service_time_to: time
- menus: ForeignKey of Menu (ManyToMany)

Menu

- name: string
- price: integer

In Cache

Models stored in Redis Cache

PartyState

PartyState is stored in Cache, not DB

- *key*: id of Party
- phase: PartyPhase
- restaurant: id of Restaurant (Nullable)
- members: list of User's id

- member_count: integer
- menus: map of User's id and Menu's id

PartyPhase

extends integer, and works like enum

- values
  - `0`: Choosing Restaurant
  - `1`: Choosing Menu
  - `2`: Ordering
  - `3`: Ordered
  - `4`: Payment and Collection

API

RESTful API

	GET	POST	PUT	DELETE
`/party`	Get list of parties	Create a new party	X	X
`/party/:id`	Get Websocket URL of party	X	X	End the party
`/group`	Get list of groups	Create a new group	X	X
`/group/:id`	Get detail of group	X	Edit detail of group	Delete group
`/signin`	X	Sign in	X	X
`/signup`	X	Sign up	X	X
`/user/:id`	Get detail of user	X	Edit detail of user	X
`/restaurant`	Get list of restaurant	Create a new restaurant	X	X
`/restaurant/:id`	Get detail of restaurant	X	Edit restaurant	Delete restaurant

Websocket API

JSON formatted protocol

Data

UserData

- id: integer
- username: string

PartyPhaseData

- phase: integer
  - `0`: Choosing Restaurant
  - `1`: Choosing Menu
  - `2`: Ordering
  - `3`: Ordered
  - `4`: Payment and Collection

RestaurantData

- id: integer
- name: string

RestaurantVoteData

- user: UserData
- restaurant: RestaurantData

MenuData

- id: integer
- name: string

MenuAssignData

- menu: MenuData
- users: list of UserData

PartyData

- id: integer
- name: string
- phase: PartyPhaseData
- restaurant: RestaurantData
- members: list of UserData
- member_count: integer
- menus: MenuAssignData

Event

- event: string
- data: Data

PartyJoined

- event: `"party-joined"`
- data : UserData

PartyLeft

- event: `"party-left"`
- data: UserData

PartyStateUpdated

- event: `"party-state-updated"`
- data: PartyData

RestaurantVoted

- event: `"restaurant-voted"`
- data: RestaurantVoteData

MenuProposed

- event: `"menu-proposed"`

- data: MenuData

MenuAssigned

- event: `"menu-assigned"`
- data: MenuAssignData

Implementation Plan

Basic Project Structure

Frontend Project

- Task
  1. Make new Angular Frontend Project
  2. Enter basic information of our Service (e.g. name)
  3. Generate Angular services and components including a routing module
- Iteration
  - Sprint 3
- Time Estimated
  - 1 hour

Backend Project

- Task
  1. Make new Django Backend Project
  2. Enter basic information of our Service (e.g. name)
  3. Generate Django apps, models and controllers
  4. Generate and migrate database
  5. If possible, generate Websocket app, too
- Iteration
  - Sprint 3
- Time Estimated
  - 1 hour

Basic Deployment Settings

- Task
  1. Write basic Dockerfile for Django application
  2. Write docker-compose wrapping Django, Caddy, and PostgreSQL containers
  3. Write CI configuration for Travis-CI
  4. If possible, write automatic deployment script for Angular application
- Iteration
  - Sprint 3
- Time Estimated
  - 2 hours

Sign up and Sign in

User Model

- Task
    1. Generate User model consisting of ID, name, and password
    2. Implement authentication with user ID and password
- Iteration
    - Sprint 3
- Time Estimated
    - 4 hours

Login View

- Task
    1. Generate Login component and User Service
    2. Implement Login request in User service
    3. Implement Login view in Login component
- Iteration
    - Sprint 3
- Time Estimated
    - 3 hours

Party

Party Model

- Task
    1. Generate Party model consisting of name, leader, and members
    2. Implement Creating Party API
    3. Implement Listing Party API
    4. Implement Joining Party API
- Iteration
    - Sprint 3
- Time Estimated
    - 4 hours

Making Party

- Task
    1. Generate Party component and Party Service
    2. Implement Creating Party request in Party Service
    3. Implement Party view in Party component
- Iteration
    - Sprint 3
- Time Estimated
    - 4 hours

Joining Party

- Task
    1. Generate Lobby component
    2. Implement Listing Party request in Party Service
    3. Implement Joining Party request in Party Service
    4. Implement Lobby view
- Iteration
    - Sprint 3
- Time Estimated
    - 4 hours

Testing Plan

Unit Testing

We will test every components and modules as implementation progresses. We will use the following frameworks and expect the code coverage is over 70%.

- Angular2: Jasmine & Karma
- Django: Python unit test

Functional Testing

We will test all APIs by following frameworks. Since we use WebSocket, we will also make functional testing for that protocol.

- Angular2: Jasmine & Karma
- Django: Python unit test
- WebSocket protocol: Python unit test

Acceptance & Integration Testing

As the goal of our project is to solve the real issues in the CSE club room, we would make much importance of beta testing. We will perform it with the help of our expected users, CSE students who try to order delivery food in CSE club room.

Since we use WebSocket API, providing mocks is hard. So we will do integration testing just like functional test which the mock does not exist. We will check front and backend integrated well.

- Acceptance(Beta): by CSE students who try to order delivery food
- Angular2: Jasmine & Karma
- Django: Python unit test