Roller Coaster Tycoon

Roller Coaster Team

Part I

1. What will your project do?
   Our project aims to build an amusement park information management system. Through this system, tourists can not only purchase tickets and make reservations but also can view the detailed information of the amusement facilities, including facilities introduction, opening hours, current queue status, and so on. At the same time, the amusement park manager can not only monitor the operation of the entire amusement park but also can modify the display information so as to notify all people.

2. Who or what will be its users?
   Tourists who plan to come to the amusement park but want to know more information about what facilities our amusement park provides, what is the opening and closing time of the park, or when is the peak period for one facility in order to make a more efficient travel plan.

   Tourists in our amusement park who want to know the queue status of each facility in order to choose which one to enjoy.

   The amusement park administrator, who can monitor the running status of the park in real-time and notify by modifying the information on the display page.

3. What do you think you'll be able to show in your demo?
   A real web service page

4. What kind of data do you plan to store?
   a. User information including the appointments and orders, and personal information such as account, password, and phone number.
   b. Queue status
   c. Brief introduction of facilities
   d. The open and close time of facilities
   e. The open and close time of events

5. What API do you plan to use and what will you use it for?
   a. Musement api
      Base url: https://sandbox.musement.com/api/v3/

Documentation: https://api-docs.musement.com/
This API provides a database containing 7664 activities with detailed information including, we will use this as our data of events in the amusement park.

b. https://github.com/cubehouse/themeparks
This is an unofficial API library for accessing ride wait times and park opening times for many theme parks around the world, including Disney, Universal, and SeaWorld parks. We will use data in this API to mock the rides in amusement parks in our system.

c. Twitter websites api
https://developer.twitter.com/en/docs/twitter-for-websites/tweet-button/overview
The Tweet button is a small button which will be displayed on our website to help viewers easily share our content on Twitter.

d. Current weather api
https://openweathermap.org/current
This API provides access to current weather data for any location on Earth including over 200,000 cities. Data is available in JSON, XML, or HTML format. By accessing data from this api, we will provide weather information to our viewers to help them make plans.

Part 2

MVP User Stories:

1. As a visitor, I want to make my reservations and orders and observe them easily and modify them if I need so that I can book reservations and orders online and cancel them if I change my mind. My conditions of satisfaction are-
    a. My ongoing orders and appointments should always have a striking display.
    b. I can cancel my orders and appointments if I want.
    c. All my orders and appointments will display according to the time.
    d. Users can make appointments and orders, and they must be consistent.
    e. If the server crashes and restarts, users should be able to observe their orders and appointments which have been made.
    f. When I make orders and reservations, I can buy different kinds of tickets based on my types such as students, children, and adults.
2. As a visitor currently in the park, I want to know the facilities' and events' current conditions so that I can make my in-park plan. My conditions of satisfaction are-
    a. The time when the events are available.
    b. Some description of events

    c. Some introductions about facilities
    d. The time when the facilities are available
    e. How long will I have to wait for a certain facility?
3. As a visitor, I want to know some information about the amusement park before I buy the tickets so that I can choose a better day to enjoy my journey. My conditions of satisfaction are-
    a. When I choose a date, I can see which facilities and events are available on that day.
    b. When I choose a date, I will also see the weather forecast.
    c. After I choose a date, I can see the price of the tickets.
4. As a park manager, I want to have permission to change the status of events, add/delete events, check the current reservations for all visitors, and tickets' information so that I can manage the amusement park. My conditions of satisfaction are-
    a. I can set an event to be open/close.
    b. I can add/delete events.
    c. I can modify the description of events.
    d. For a certain event, I know the number of appointments within a specific time slot.
    e. For a certain visitor, I know whether he/she has a ticket.
    f. For a certain visitor and event, I know whether he/she has a reservation for the event.

Wishlist User Stories:

1. As a visitor, I want to know where I am during the visit. My conditions of satisfaction are-
    a. I can open the map and see my location in the app.
2. As a member of team visitors, I want to share my appointments with my fellow visitors so that they know what I have booked.
    a. I can share my tickets' information with people I select.
    b. I can share my reservations with the people I select.
3. As a member of team visitors, I want to know where my friends are and contact them. My conditions of satisfaction are-
    a. I can add/delete my friends to a group in the app.
    b. I can see my group members' locations on the map.
    c. I can send messages to my group members in the app.

Part III

Acceptance test for MVP user stories:

1. As a visitor, I want to make my reservations and orders and observe them easily and modify them if I need so that I can book reservations and orders online and cancel them if I change my mind.
    a. Given the situation that a user has made some reservations and orders if users can observe their ongoing reservations and orders highlight, the test is passed and vice versa.
    b. Given the situation that a user has made an order and then tries to cancel that order, and if the order no longer exists, the test is passed and vice versa.
    c. Given the situation that a user has made some reservations and orders if the orders and reservations are shown according to the time, the test is passed and vice versa.
    d. After a user makes an order or reservations, if there exists a related record in the database, the pass is passed and vice versa.
    e. Given the situation that a user has made some reservations and orders, after making the server crash and restart, if the reservations and orders are still the same, the test is passed and vice versa.
    f. Give the situation that a user wants to buy a children ticket and if the ticket has been bought successfully, the test is passed and vice versa.
    g. Give the situation that a user wants to buy an adult ticket and if the ticket has been bought successfully, the test is passed and vice versa.
    h. Give the situation that a user wants to buy a student ticket and if the ticket has been bought successfully, the test is passed and vice versa.

2. As a visitor currently in the park, I want to know the facilities' and events' current conditions so that I can make my in-park plan.
    a. Given an event name, if users can find the start and close time of the event, the test is passed and vice versa.
    b. Given an event name, if users can find the description of the event, the test is passed and vice versa.
    c. Given a facility name, if users can find the introduction of the facility, the test is passed and vice versa.
    d. Given a facility name, if users can find its open and close time, the test is passed and vice versa.
    e. Given a facility name, if users can find how long they need to wait, the test is passed and vice versa.

3. As a visitor, I want to know some information about the amusement park before I buy the tickets so that I can choose a better day to enjoy my journey. .
    a. Given a date, if users can find what facilities and events are available on that day, the test is passed and vice versa.

b. Given a date, if users can find how's the weather like on that day, the test is passed and vice versa.
c. Given a date, if users can find the price of the tickets on that day, the test is passed and vice versa.

4. As a park manager, I want to have permission to change the status of events, add/delete events, check the current reservations for all visitors, and tickets' information so that I can manage the amusement park.
    a. Given an event name, if the manager can open and close the event, the test is passed and vice versa.
    b. Given an event name and other information, if the manager can add and delete the event, the test is passed and vice versa.
    c. Given an event name, if the manager can change the description of the event, the test is passed and vice versa.
    d. Given an event name and a specific time slot, if the manager can find the number of appointments, the test is passed and vice versa.
    e. Given an id for a person who has bought tickets, if the manager can know he/she has a ticket, the test is passed and vice versa.
    f. Given an id for a person who didn't buy tickets, if the manager can know he/she doesn't have a ticket, the test is passed and vice versa.
    g. Given the event name and an id for a person who has made reservations for that event, if the manager can know he/she has made reservations, the test is passed and vice versa.
    h. Given the event name and an id for a person who didn't make reservations for that event, if the manager can know he/she didn't make reservations, the test is passed and vice versa.

Part IV

The technology chosen for this project:

1. IDE: IntelliJ IDEA
2. Build tool: Maven
3. Style checker: checkstyle
4. Unit testing tool: Junit
5. Test coverage tracking tool: Emma
6. Bug finder: SpotBugs
7. Back-end: Springboot
8. Database: Mysql