SW Engineering CSC 648/848 Summer 2019

Milestone 2

07/10/2019

Team 5

Team Lead: Jonathan Kaldani

Github Master: Brian Lai

Front End Team:

- Anya Livshyts
- Tianchen Liu
- Habtom Asfaha

Back End Team:

- Anwar Halteh (Back End Team Lead)
- Justin Zhu
- Sandeep Dhakal

Submission History Table

Initial Submission: 07/12/2019
Revised: 07/13/2019

I. Data Definitions V2

1. Client

Someone using the application; Will submit a ticket

- Registered Client: Viewing/Posting/Getting Information
- Unregistered Client: Viewing/Getting Info
- Admin Client: Viewing/Reviewing/Solving Issues

2. Admin

A City Worker who is involved in receiving and checking the posts as they come in; Will close the ticket

3. Ticket

A submitted Issue onto the website

Information included in a ticket

Issue: Name of the issue for the ticket

- Categories: Oil spill, fire, leak, etc..

Location: Where the issue arose

Time: What time it was spotted/ticket was opened

Description: Details of the issue, not required

Rating: How urgent the issue is

Status: Progress of issue being resolved

User: The client who submitted the ticket, can be anonymous

4. Crew

DPW/City Worker team sent out

5. DPW

Department of Public Works, used in this report as most likely that department would be most involved in this venture

6. Status

Status of the ticket. Options are: “Submitted”, “Current and In Progress,” “Past Posts”

7. **Recent**

   A catalogue of “Current and in Progress” & “Past Posts”

8. **Events**

   A calendar of events happening in the available parks

9. **Map**

   A usable map; available for Clients in order to navigate around the parks and issues

10. **Tips**

    A List of suggestions on how to be environmentally conscious

11. **Park Profile**

    A page that includes all information about selected park. Including recent tickets, events, and map.

12. **User Registration Record**

    A record of registered users

13. **Admin Approval Page**

    An admin only page, with list of all tickets- including their status. Gives Admin ability to approve posts, delegate a team, rate the severity of issue, and change status as the issue is resolved.

II. Functional Requirements V2

Priority 1:

A. Unregistered User

1. Search Function

All users shall be able to search the park by park name, park number or zip code.

This function is available for every status of user.

2. Browse

Users can view the different environmental issue on the website without login

3. Name and image of the surrounding parks and open spaces

The website shall display the name and image of the park in order for easy search of surrounding areas

4. Map

The website will have a Map of the park and display the location of the environmental issue of the park

5. Register/Login

Only registered users will be able to login to the website. New users will have the option to register.

6. CAPTCHA

Register and login shall have CAPTCHA to prevent automated attacks.

7. Current issue/post

All users shall be able to see all the current environmental issue/post.

8. Sort

User shall be able to sort the post based on time, category, relevance.

9. Number of current issue

Number of current environmental issues of the park will display to all user

B. Registered User

10. Post

Registered user shall be able to post the environmental issue of the park.

C. Admin

11. Change the status of the post

The city management shall be able to change the status of the post after an issue was solved or had proved not exist.

12. Admin

Admin can ban users and can remove inappropriate listing that doesn't relate with the website and can view websites statistics

Priority 2:

A. Unregistered User

13. Advanced search

Apply search filters that will alter the search results to fit the threshold. No keywords are required to initiate an advanced search.

B. Registered User

14. Image or Video attachments

Registered user shall be able to attach images or videos in their posts.

15. Profile

Users shall have a profile with avatar and brief description of themselves.

16. Able to pin location of the issue

The user shall be able to pin the location of the environmental issue that they encounter.

C. Admin

Priority 3:

A. Unregistered User

17. Tutorial

New register user will have a quick tutorial on how to post and search.

B. Registered User

18. Recent view/search

The user shall be able to see their recent view in the home page or recent search in the drop down of the search bar.

19. Notified by Email or Phone when an issue you posted is resolved

Before a user posts an issue, they are required to register. During registration, users must input their email and/or phone number. When a user posts an issue, they become the author of that issue and will be notified when an action is taken regarding the issue they posted.

20. Rating

Register users can upvote and downvote the park depends on their satisfaction to the environment of the park.

C. Admin

III. UI Mockups and Storyboards

Unregistered Clients

1. Unregistered Client: Checking Website

Age: 19

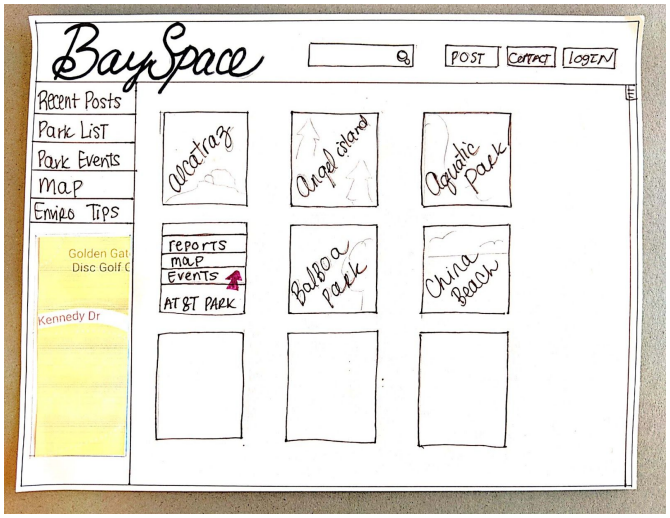
Client who checks the app in order to know of any environmental issues. Requires a service- app functionality; is Environmentally aware; Forward-thinking.

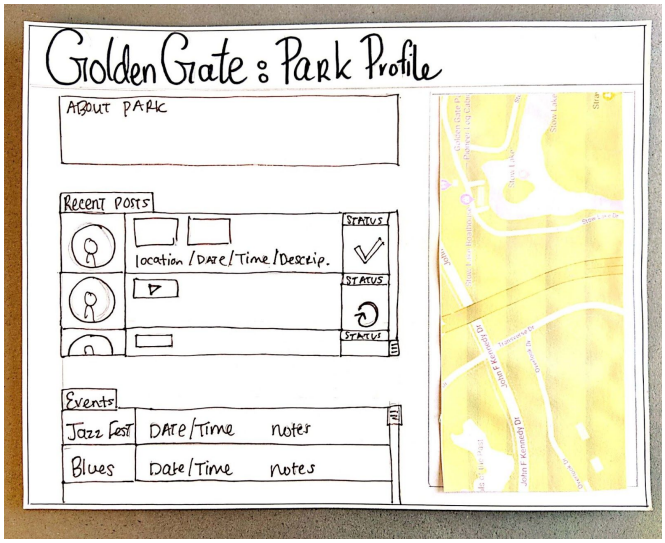
Name: Sophia

- A Student at SFSU
- Studies Environmental Science
- Babysits as a side job
- Is checking parks nearby to take the children she is babysitting

Use Case:

- Sophia has always been environmentally conscious. When she was looking for babysitting work, she was hired by a family who is also environmentally conscious, and appreciate her being mindful. Before she takes the children on an outing to the park, she needs to check whether the road and destination are safe. She checks the website. On the homepage, she searches for the nearest park to her. Once she is on the Park Profile Page, she notices a current issue that is being resolved. She decides to take the children to a different park, just to be safe.


BaySpace
POST
CONTACT
LOGIN
Recent Posts
Park List
Park Events
Map
Enviro Tips
Golden Gat
Disc Golf C
Kennedy Dr
Alcatraz
Angel Island
Aquatic Park
reports
map
Events
AT&T PARK
Balboa park
China Beach


Golden Gate : Park Profile
ABOUT PARK
Recent Posts
STATUS
location / Date / Time / Descrip.
STATUS
STATUS
Events
Jazz Fest
Date / Time
notes
Blues
Date / Time
notes

2. Unregistered Client: Checking Website + Posting

Age: 70

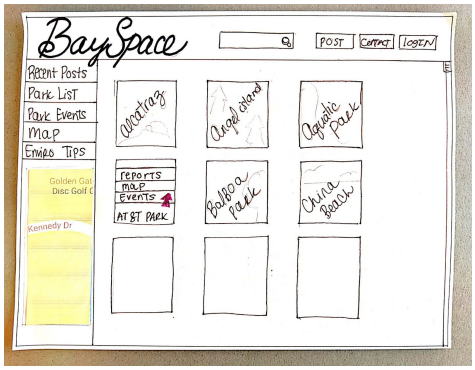
Client who checks the website in order to know of any environmental issues. Requires a service- app functionality; is Environmentally aware; Forward-thinking.

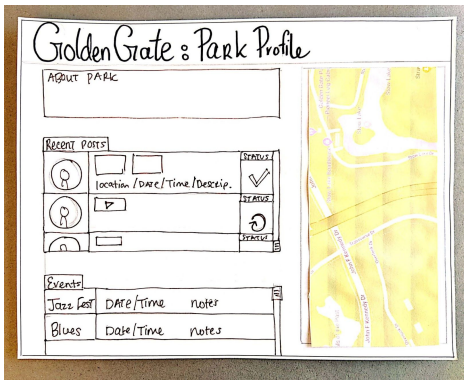
Name: Lewis

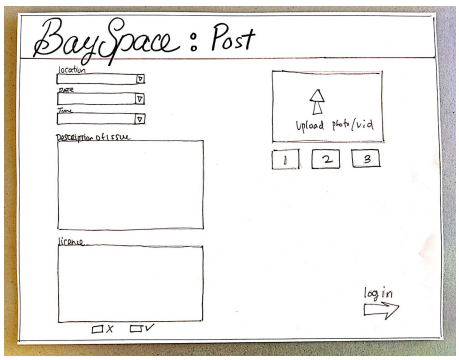
- A researcher
- Environmental Scientist
- Prefers web to phone applications
- Needs information on environmental events nearby

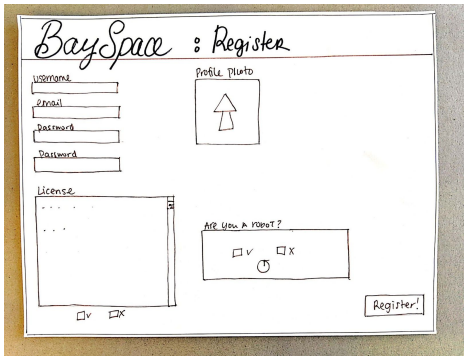
Use Case:

- Lewis opens up the website on his laptop. He is researching common environmental problems in the area. He is able to browse the “Current” and “Past Posts” from parks all over the SF area; he is able to read the comments and descriptions of each post, and does not require a log in to do so. If he has questions about a specific post, he can contact the DPW team. He is also able to look up events that are happening in the parks, as well as tips for being environmentally-conscious in your daily life. While he is doing his research in Golden Gate Park, he notices that a an issue has occurred. On the BaySpace website, he takes a few pictures, a short video of the damage, enters the time and location of the incident, and when he taps on submit, he is asked to register. He creates a profile with his name, email, password and profile picture. He adds a short description of who he is. Then, after he saves, his issue is officially submitted for review.


BaySpace
POST
CONTACT
LOGIN
Recent Posts
Park List
Park Events
Map
Emgrs Tips
Alcatraz
Angel Island
Aquatic Park
Reports
Map
Events
AT&T Park
Balboa Park
China Beach
Kennedy Dr


Golden Gate : Park Profile
About Park
Recent Posts
location / Date / Time / Descrip.
Status
Status
Status
Events
Jazz Fest
Date/Time
notes
Blues
Date/Time
notes


BaySpace : Post
location
date
time
Description of issue
Upload photo/vid
1
2
3
License
X
V
log in


BaySpace : Register
username
email
Password
Password
Profile Photo
License
Are you a robot?
V
X
V
X
Register!

Browse Site (Non-Registered User)

Use Case Name:	**Client browses site for environmental issues** **Scenario: Client wants to check a nearby park**
Summary:	**This use case allows a non-registered person to browse**
Basic Flow:	1. **The use case starts when a client decided to check whether the park nearby has any issues** 2. **The client opens the BaySpace website** 3. **They are able to search for the park they want to check, or can scroll through our "Top Park Gallery"** 4. **The click on the park they are interested in, and the Park Profile opens up** 5. **On the park profile page, they are able to see recent tickets, their status, and the description of any issues.** 6. **Once they check the website, they can decide whether to go to the park or not**
Alternative Flows:	**Step 7:** **If client goes to park, and decides to post, must register.**
Extension Points:	**-**
Preconditions:	**There are no pre-conditions to browsing**
Postconditions:	**-**
Business Rules:	**Some data and functions are restricted to certain types of users or users with a particular access level.**

Registered Clients

3. Registered Client: Posting on Website

Age: 27

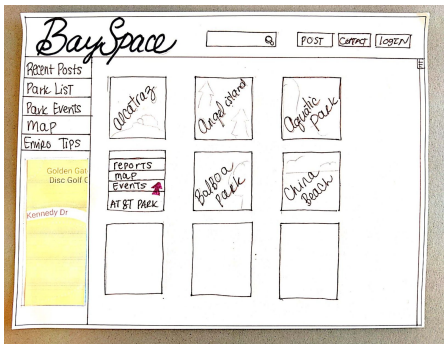
Client who wants to update the app with new information when he sees it; Environmentally and Civic minded; Wants to help

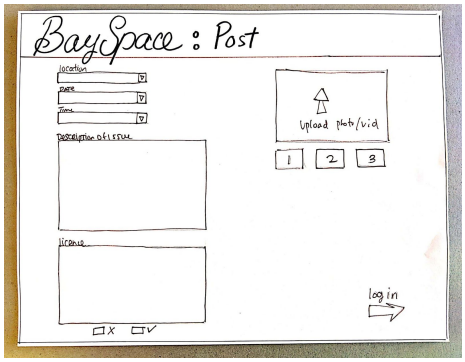
Name: Mark

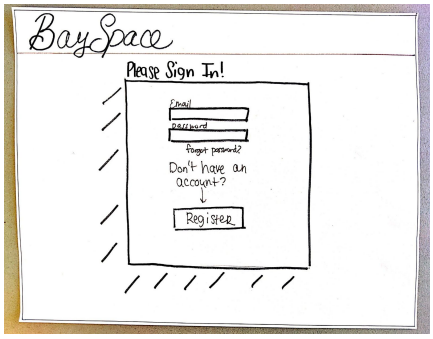
- Athletic
- Member of Civic Hackers
- Wants to help
- Proactive

Use Case:

Mark is running through Golden Gate Park. He sees that there has been an accident. A car has crashed into a fire hydrant, and there is water and oil spilling everywhere. He stops, pulls out his phone, and needs to report the incident. He sees that there is police on the way, but knows that the Department of Public Works needs to know of the water and oil spillage. He opens the BaySpace website on his mobile phone. He taps on “Post Issue.” He takes a picture of the incident, comments the environmental hazards, adds the time and location, and taps submit. He is prompted to login, which he does with his Google email and password.


BaySpace
POST
CONTACT
LOGIN
Recent Posts
Park List
Park Events
Map
Emails Tips
Golden Gat
Disc Golf C
Kennedy Dr
Crissy Field
Reports
map
EVENTS
AT&T Park
Baker Beach
China Beach


BaySpace : Post
location
date
time
Description of Issue
Upload photo/vid
1
2
3
license
log in
X
V


BaySpace
Please Sign In!
Email
password
Forgot password?
Don't have an account?
Register

Post (Registered Client)

Use Case Name:	**Post** **Scenario: Client posts a ticket**
Summary:	**This use case is for a registered client posting**
Basic Flow:	**1. Client notices an issue at a park.** **2. Client decides to report said issue.** **3. They open the BaySpace Website** **4. The click on the button that says "Report" to open a ticket** **5. On report page, they are prompted to enter location, time, description of issue, and a few photographs.** **6. On the next page, they are prompted to login, using a lazy login.** **7. Once they login, the ticket is submitted to the admin**
Alternative Flows:	**Step 8:** **Once they reach the login page, if the client is not registered, he is not able to post. He/She is prompted to login and register.** **Step 9:** **After registering, client has the ability to post**
Extension Points:	**-**
Preconditions:	**The customer is logged in, or has a registered account. Otherwise, they are willing to open an account.**
Postconditions:	**The site is updated to show the new issue once approved by the admin.**
Business Rules:	

Admin

4. Admin/DPW worker: Checking App

Age: 40

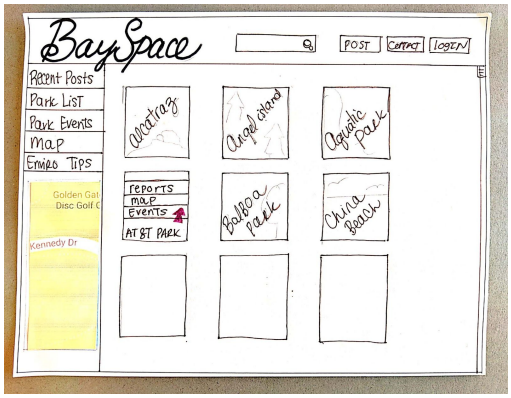
Person in charge of maintaining the reports in app; dispatching crews to fix problems; Checking for false reports, and crude posts.

Name: Katie

- DPW Employee
- Has connections with the city forestry and agriculture department
- Attention to detail
- Works long hours, has many responsibilities

Use Case:

- Katie is in charge of receiving and checking the posts/tickets as they come in. She has a team that discards any false or prank posts, and also dispatches the appropriate crew to the location of the environmental dilemma. She opens up the post about the car accident in G.G Park. Looking through the details that Mark posted, she contacts the necessary clean up crews. Once they arrive on the scene, she changes the post status to “In Progress.” After the team notifies her that the scene is clear, she moves the post from “Current and In Progress” to “Past Posts.” In this way, she closes the ticket.


BaySpace
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Recent Posts
Park List
Park Events
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Disc Golf C
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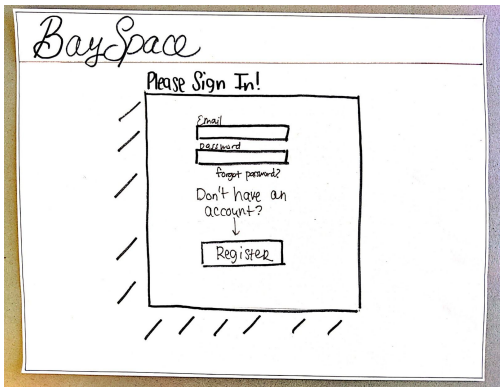
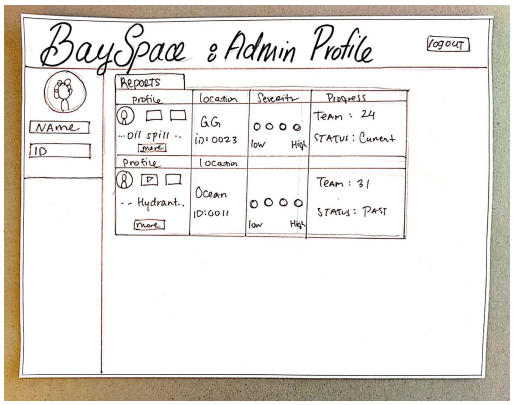
Aquatic Park
REPORTS
MAP
EVENTS
AT&T PARK
Balboa park
China Beach


BaySpace
Please Sign In!
Email
password
forgot password?
Don't have an account?
Register


BaySpace : Admin Profile
LOGOUT
NAme
ID
REPORTS
Profile
Location
Severity
Progress
Oil spill ..
Mark
GG
ID: 0023
low
High
Team : 24
STATUS : Current
Profile
Location
Hydrant..
Mark
Ocean
ID: 0011
low
High
Team : 31
STATUS : PAST

Admin (Registered, all access)

Use Case Name:	**Admin looks at posts, delegates workforce** **Scenario: User needs to validate any new issues, check status on "in progress" and close solved issues.**
Summary:	**This use case allows an administrator to validate new posts, delegate a workforce, change status, and close ticket.**
Basic Flow:	**1. The user logs into their admin account.** **2. They are able to see a log of new tickets, with location, photos, time, and the profile that posted the ticket.** **3. They look through the images and description** **4. They are able to enter the severity of the problem** **5. Then, they delegate a DPW team to the location to aid in the environmental issue** **6. Admin then changes the status of the issue.** **7. Once the issue is resolved, admin can post an update, update the status, and close the ticket.**
Alternative Flows:	**-**
Extension Points:	**-**
Preconditions:	**Must have admin access**
Postconditions:	**-**
Business Rules:	**No data and functions are restricted**

IV. High level Architecture, Database Organization

Main database schema: team5app

Tables: ticket, user, location

Columns:

1. ticket: id (INT), issue (VARCHAR), location (VARCHAR, foreign key), status (ENUM), description (VARCHAR), rating (INT), time (DATETIME), user (VARCHAR, foreign key)
2. user: username (VARCHAR), password (encrypted), email (VARCHAR), create_time (DATETIME)
3. location: name (VARCHAR)

Location names:

Alcatraz Island
Angel Island
Aquatic Park
AT&T Park
Balboa Park
China Beach
Fort Funston
Fort Mason
Fort Miley
Glen Canyon Park
Golden Gate Park
Japanese Tea Garden
Lake Merced
Lands End

Mount Sutro Forest
Muir Woods
Ocean Beach
South Park
The Presidio
Twin Peaks
Union Square

Media storage: Files shall be stored on server file system with relative path.

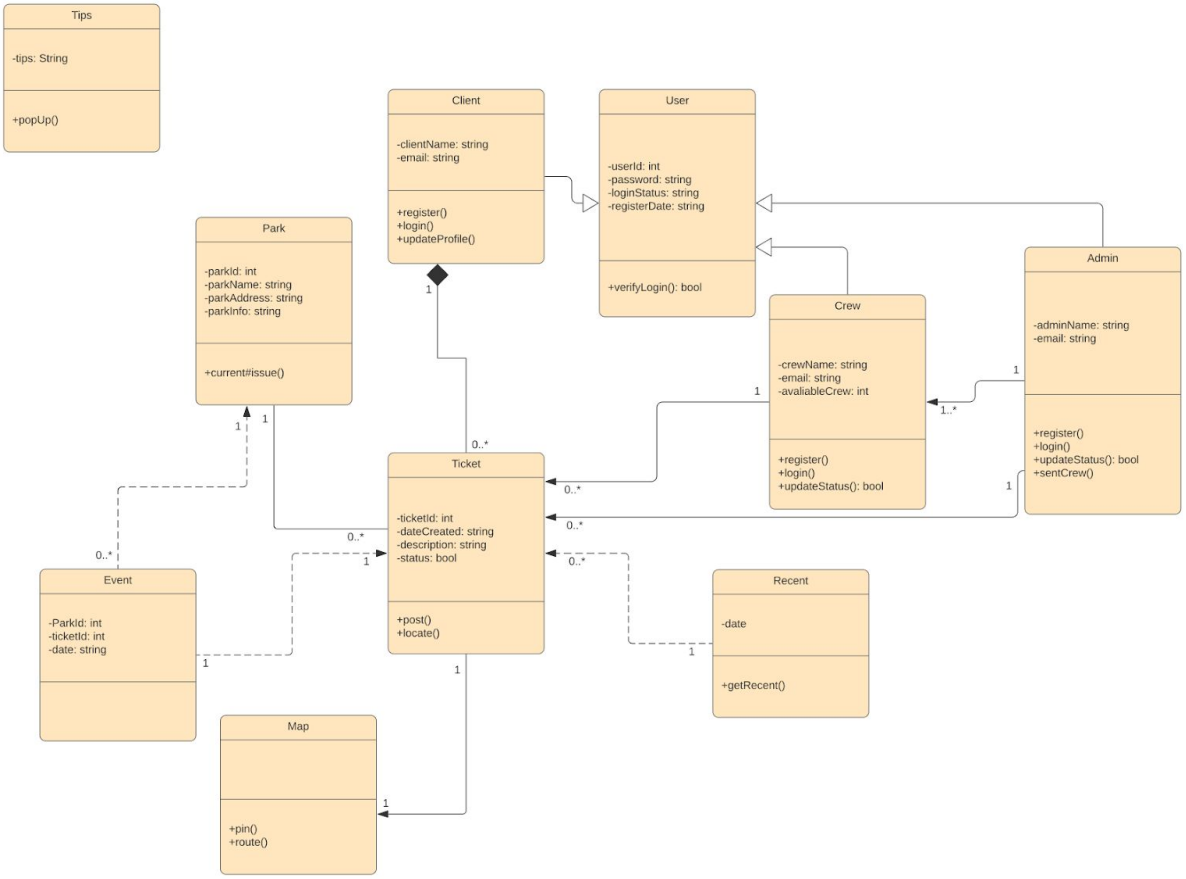
Search: Search query shall use MySQL %LIKE and apply to selected category such as issue name or location. Can also filter by status (ie. only show Open tickets). Search shall fetch data from the tickets table.

Custom APIs: None so far

Non-trivial algorithms: Open and in progress tickets shown up front, then sorted by recent. Closed tickets hidden and are optionally viewable.

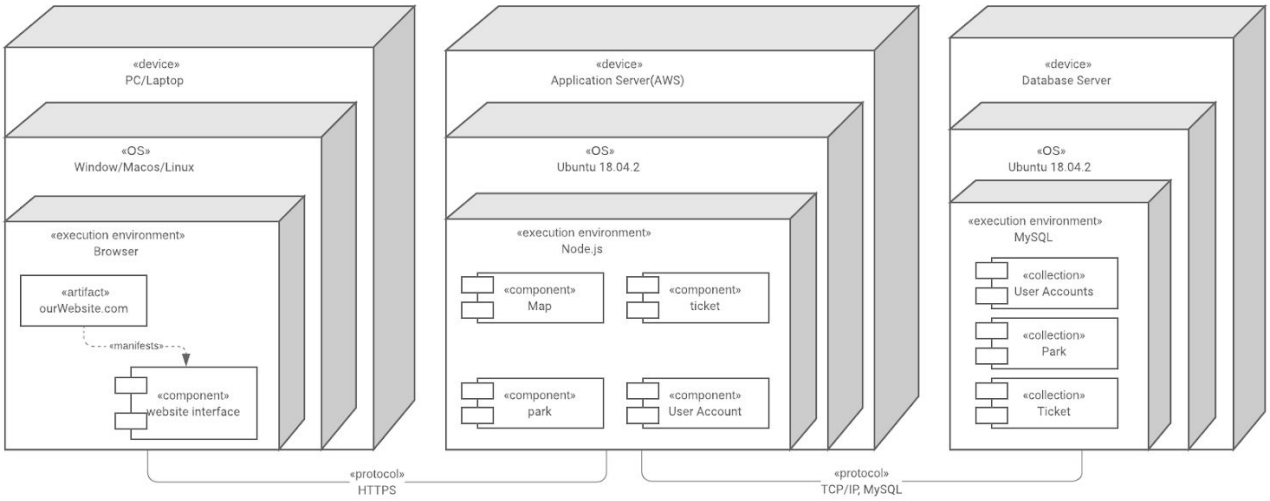
SW Tools/Frameworks: NodeJS with Express. Handlebars for NodeJS view engine. MySQL for database. PM2 to keep NodeJS deployment running even after server reboot.

V. High Level UML Diagrams



- User class is an abstract class. Client. crew and admin is a generalization of the user class.
- A client able to post many ticket and a ticket belong to only one client. all ticket will delete if the client account is deleted.
- An admin and crew can handle many ticket.
- An admin must have at least one crew to manage.
- Every ticket will have a map to locate the issue.
- Every Ticket associate to a park and a park can have zero or more ticket.
- Event class shows the current issue happen in each park depends on the park id.
- Recent class shows the ticket depends on the create date of the ticket.

UML Deployment Diagram



VI. Risks

Skill risks - New to NodeJS and MySQL: CSC 317 is a new course that should cover databases and none of us has taken it. We shall learn these topics as quickly as possible using online resources and resources provided by professor.

Schedule risks - Summer session is short and many of us have non-school related duties.

Technical risks - Unexpected hardware crash causes lost work. There may be rare cases of AWS server outage which causes our deployment to go offline.

Teamwork risks - Everyone has a different focus on the project and very little knowledge of each other's focus. For example, front-end has no idea what goes on in backend and vice versa.

Legal/content risks - We shall use only MIT content, Creative Commons content, open-sourced content, or content created by us directly.

VII. Project management

To successfully complete Milestone 2 we had short in person meetings to discuss our plans and progress for our project and MileStone 2. These meetings would consist of creating a game plan of what needs to be taken care of, who will do what, and to bring up any concerns with the direction we are heading for this project. After having an in person meeting, we then set up a Trello dashboard to assign tasks to each person on the team and to keep track of the progress. Trello helped us reach our Milestone 2 deadlines in an efficient manner. Another tool that helped us communicate with each other on the team and collaborate together was Slack. Using Slack we were able to keep each other updated with our progress, check in with each other, and ask questions. Slack was a fantastic communication tool in helping us complete Milestone 2.

Moving forward we plan on keeping this same format as it has been working for us thus far and has proven to be efficient. We will continue with having in person meetings after classes, use Trello to keep track of our Milestone's status and to assign tasks, as well as use Slack to communicate with each other on the team.