



School of Informatics, Computing, and Cyber Systems

**Team:**  Alonso Garcia,  Jack Morris,  Makaela Crookes,  Yahir Espinoza  
**Client:**  Padraic “Paddy” McGarry **Team Mentor:** Ogonna Eli

## Motivation & Solution

More than half of people who relocate regret it; lacking time and resources to thoroughly visit and understand a place before moving. Virtual Flagstaff targets this regret with online exploration of the city where users:

- Learn about the history
- Participate in exciting quests:
  - Hiking trails
  - Skiing & Snowboarding
  - Gather historical information
- Learn what Flagstaff’s community is like
- Experience real-time Flagstaff weather patterns
- Expand accessibility

## Key Features

### Real-Time Events

Displays Flagstaff weather and game behavior based on seasons

### Non Playable Characters

Distribute quests/offer interesting information

### Mini Games

Maintains player interest and offers activity experiences

### Quests

Encourage players to explore and interact

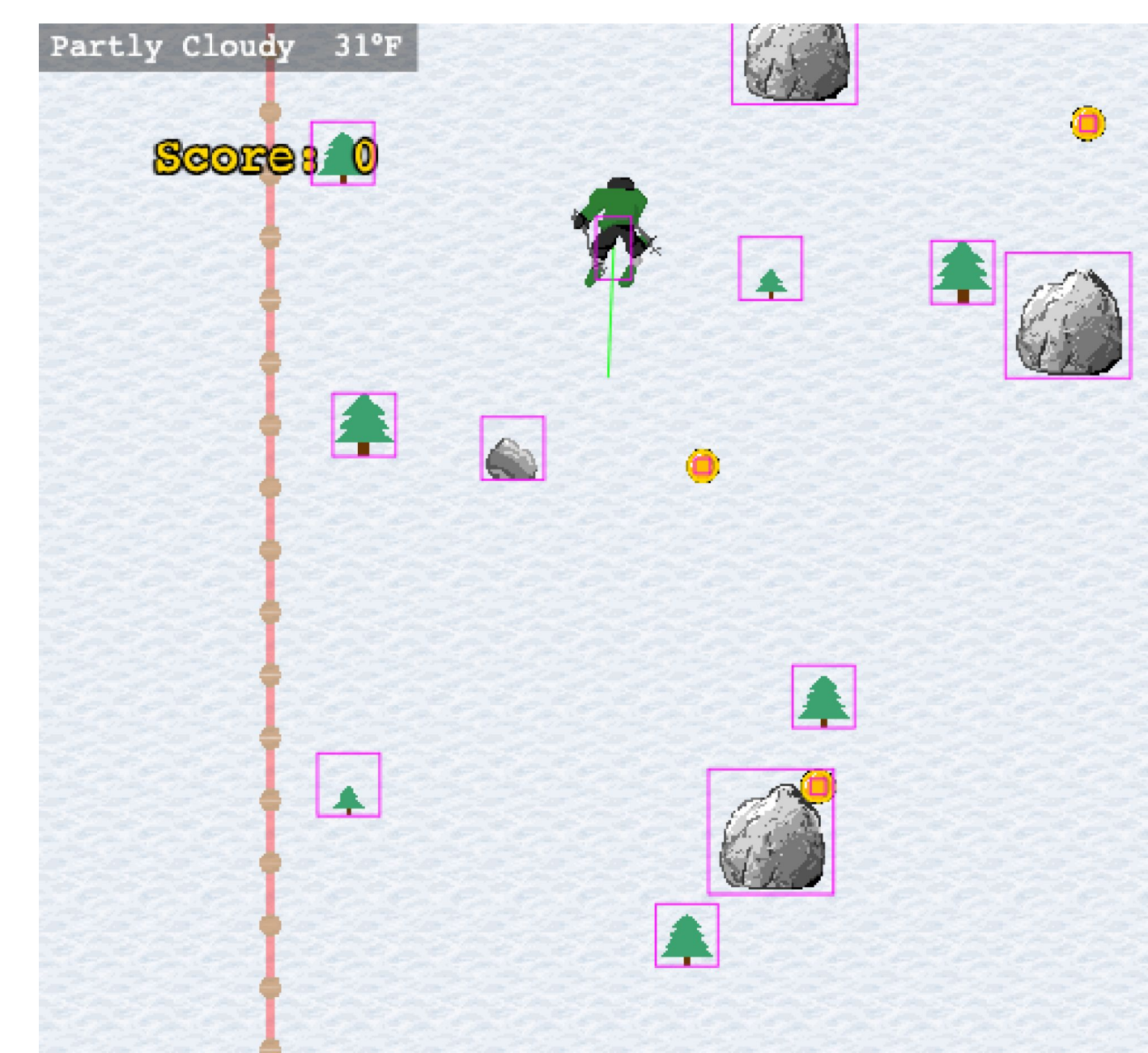
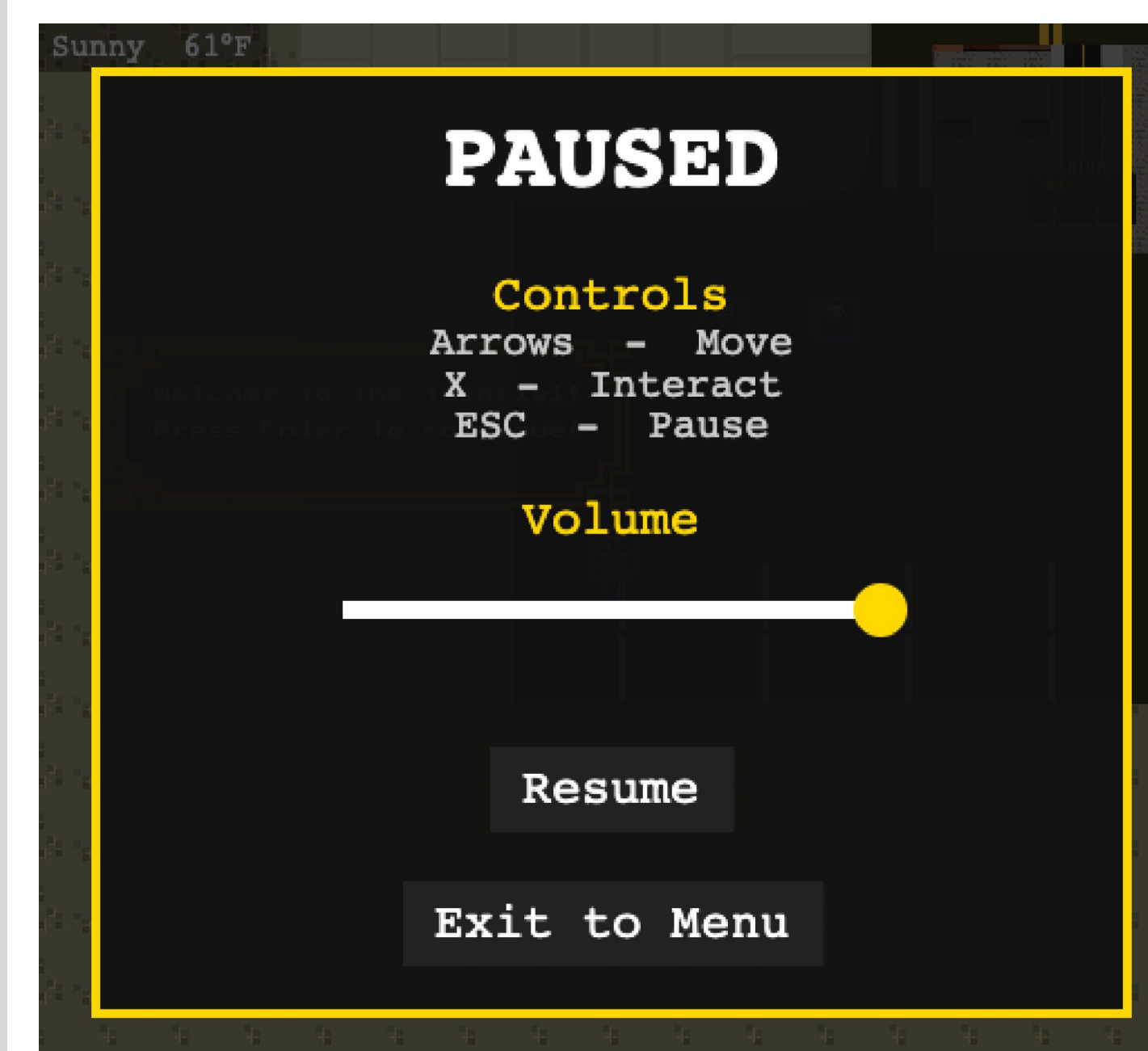
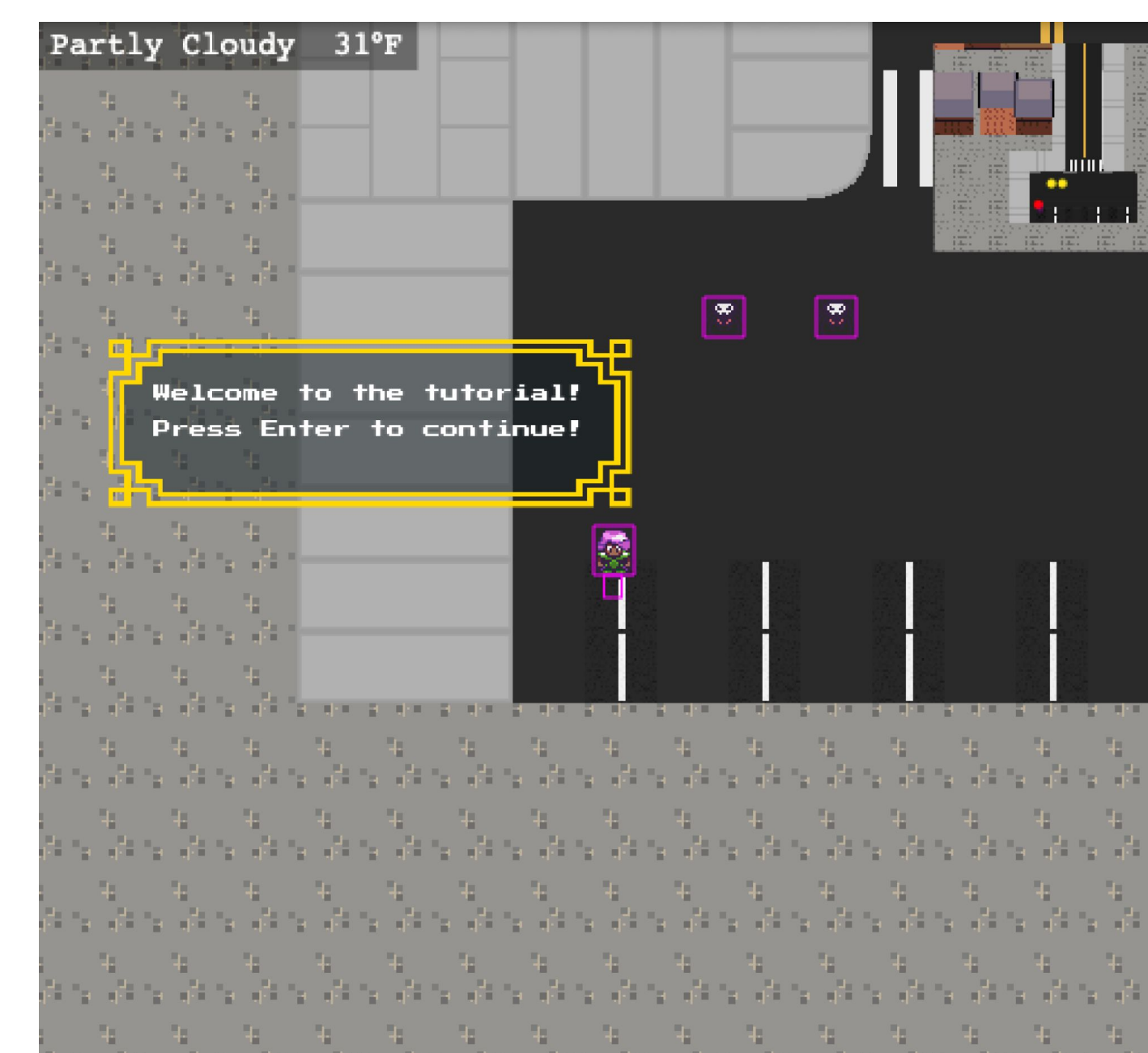
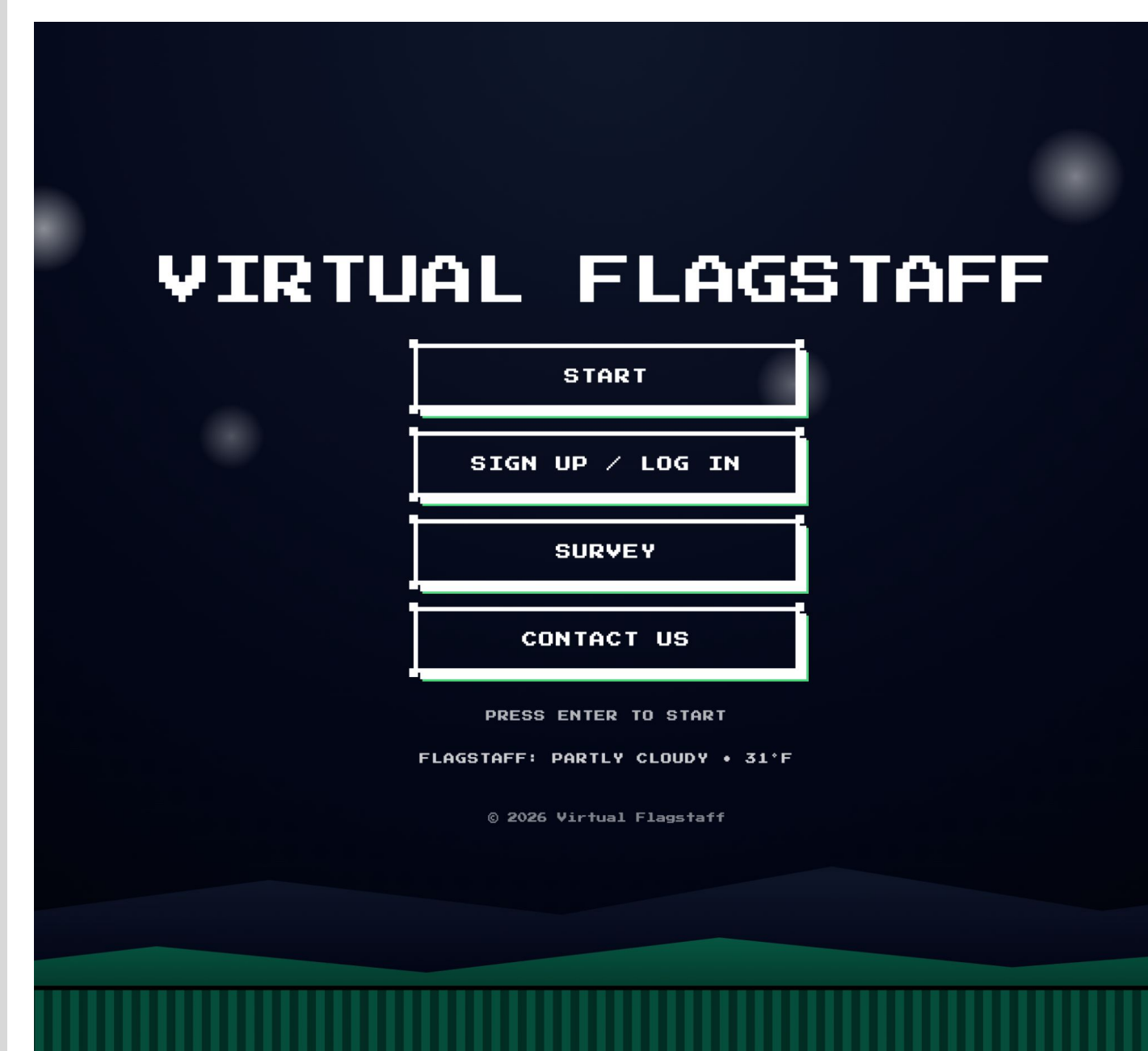
### Map/Navigation

Drive exploration of Flagstaff features

### Incentives

Promote business interactivity for obtaining more clients

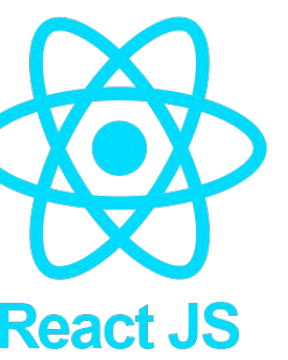
## Outcomes



## Technologies

### Frontend

- JavaScript web framework
- Responsive for user engagement



### Backend



- Python RESTful API framework
- Fast and scalable for sending real-time data

### Database

- Relational database
- Scalable and SQL capabilities for user/game data storage

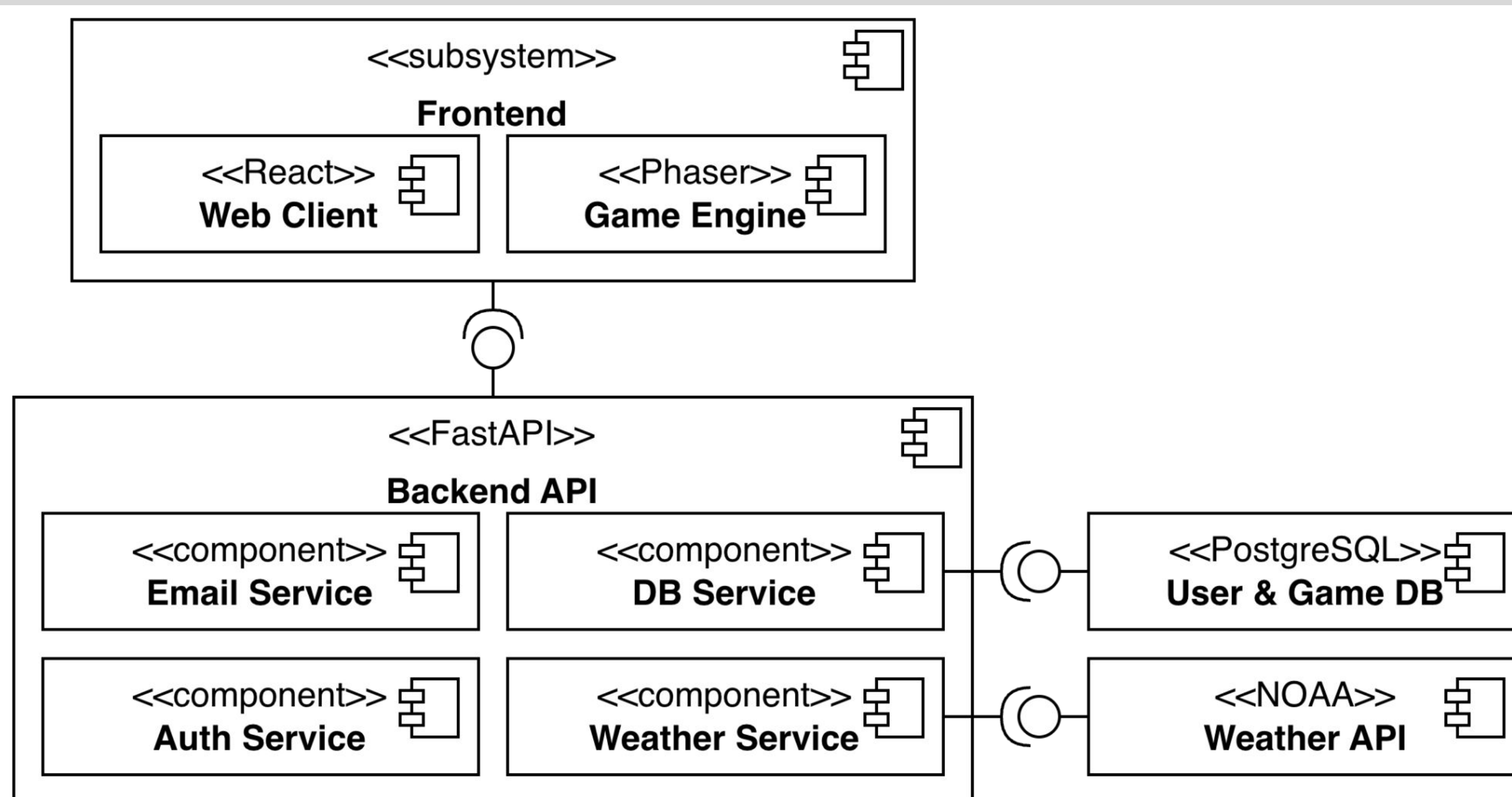


### Game Design



- JavaScript game framework
- Versatile & responsive for interactable gameplay

## Architecture



## Testing Plan

Unit and Integration tests will ensure that the project’s back-end and front-end are communicating and working as intended. Meanwhile extensive usability testing will be used to ensure our gamified experience is working and enjoyable to as many users as possible. If you’d like to help in our testing, feel free to try out the experience!

## Challenges

While building the game, we encountered many challenges as follows:

- Learning and understanding the Phaser game framework
- Integration complexities from using multiple frameworks and APIs
- Providing multiple concurrent users with a smooth experience
- Working with each other to avoid duplicating code
- Time to implement extra features

Even though we experienced many challenges throughout the process of developing Virtual Flagstaff, we did overcome them with the following:

- Early introduction of Phaser allowed the team to
- Docker containers used to reduce integration complexities
- Support concurrent users by optimizing assets and regular load testing of the system
- Prevent duplication of code by regular team meetings and a centralized Git workflow
- Focus developing core features first, seasonal quest and full downtown expansion expected for the future

## Future Work

Our client, Paddy, hopes to expand the Virtual Flagstaff experience beyond Flagstaff and apply the same concept to other cities. This would involve developing scalable systems for map creation, regional NPC dialogue, and location based content so new environments can be added efficiently. Future work will also focus on enhancing user customization, by allowing users to personalize avatars with collectable clothing and allow users to have an experience tailored to their personal needs.

## Contact Us!

Our Sponsor: [paddy@scoutingparty.com](mailto:paddy@scoutingparty.com)  
 Sponsor Website: <https://scoutingparty.com/>  
 Team Website:

