

# Developer Guide:

## **BeachCS**

### **Group 5**

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# Project Overview

BeachCS is an interactive web application that acts as a student's educational guide containing relevant information regarding all aspects of the Computer Science/Computer Engineering field of study.

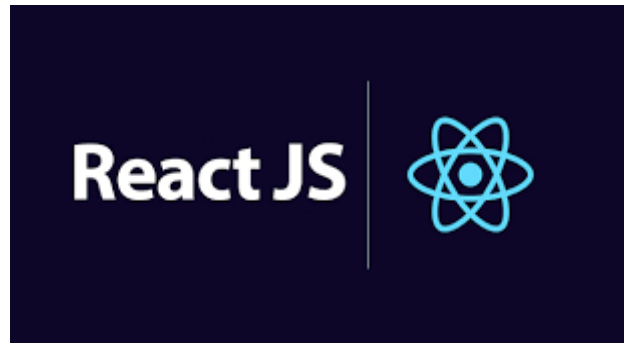
As it stands, a student studying CECS at California State University Long Beach has numerous resources at their disposal to answer any questions they may have on a wide range of topics. These topics may include but are not limited to: lists of required courses needed to graduate, a degree roadmap to help students map out their path to graduation, and courses currently being offered at the university. The problem that arises with this is that all of this information is scattered throughout different places on the web, making it both difficult and time-consuming for students to find what they are looking for.

BeachCS aims to fix this problem by providing students with a user-friendly guide that contains all of the information they need in one place to have a successful career as a CECS student at CSU Long Beach. The Wiki will be constantly updated, providing students with real-time updates on course availability, degree requirements, job fairs, tutoring services, and whatever else a student may need to succeed in this field.

Ultimately, what we hope to achieve in developing BeachCS is to create an application that gathers all of the (supplementary) information a CECS student at CSULB needs to have a successful career both in and out of college.

# Project Components

The project is currently deployed at the web address: <https://BeachCS.wiki>. **Node.js** is used as the JavaScript runtime to execute the program. **Express.js** is used to create the client-server communication aspect of the web application. **React.js** is the main framework of the application.



The frontend of the application mainly utilizes **React libraries**, **HTML elements**, and **CSS styling definitions** to make up the user interface. The frontend allows the user to navigate through the application and send requests to the backend.



The backend of the application consists of databases we created via **MySQL**. We utilized **AWS RDS** to create a database instance in the cloud to host the databases the front end will fetch data from.



Our web application is fully deployed through Amazon Web Services. We created an elastic cloud server instance on **AWS EC2** to host the front-end and back-end of our web application. The server instance deploys the front-end continuously and fetches data from our **AWS RDS** instance when the back-end needs to be accessed.



We purchased the domain, <https://beachcs.wiki/>, through **GoDaddy**. When the domain is entered in the browser's URL, the page is forwarded to the elastic IP address that our **EC2** server runs on and the web application is displayed.



# Documentation Resources

This section provides links to documentation that outline the scope and features of the BeachCS. Click the document title to be redirected to the appropriate document.

## [Class Definitions Documentation](#)

- Overview of the objects present within the program

## [Project Features Documentation](#)

- Summary of features that will be present within the application

## [Requirement Specification Documentation](#)

- Outlines requirements to be satisfied through the application.
- Includes models for the functional plan of the project, as well as goals, use cases, and enumeration of stakeholders

## [Project Design Documentation](#)

- Lists behavior and architecture specifications used in the project.
- Serves as reference for technologies used and their definitions as well as activity diagrams for features and the site map

# Setting Up Project Tools



## Node.js

1. Download Node.js, choosing the version that fits your system
  - a. System Information should be accessible for any Operating System
  - b. <https://nodejs.org/en/download/>
2. Create React application through Node.js
3. Use preferred JS IDE to develop application pages

Detailed information on setting up Node.js can be found [here](#).



## MySQL Workbench

1. Download MySQL Workbench and set up a local database
2. Create tables and enter data for table rows
3. Create connection between JS application and local database



## GitHub Desktop

1. Create or use an existing GitHub account
  - a. <https://github.com>

2. Download GitHub Desktop, choosing the version that fits your system
  - a. System Information should be accessible for any Operating System
  - b. <https://desktop.github.com/>
3. Configure and customize GitHub Desktop to be linked to your GitHub account
  - a. Steps to connect your account: [Configuring and customizing](#)

Detailed information on setting up GitHub Desktop can be found [here](#).



## Amazon RDS

### Amazon RDS

1. Create a free instance of MySQL RDS instance on Amazon Web Services
2. Set up security groups to allow TCP, SSH, and HTTP requests from the IP addresses of the developers
3. Launch MySQL Workbench and establish a new connection to the RDS instance using developer's credentials
4. Once created, verify all developers have access to the shared cloud database and all tables, columns, etc are present.
5. Change MySQL connection variable in the backend code from local to RDS public DNS address



## Amazon EC2

### Amazon EC2

1. Download a copy of the BeachCS.pem file use as a key to access the EC2
  - a. Encrypted key stored on .pem file cannot be downloaded again from the website, so .pem file must be stored securely.



2. Download a SSH client if the machine does not already have one, such as PuTTY for Windows machines.
3. Go to “SSH” then “Auth” in the sidebar, then upload BeachCS.pem as the “Private key file for authentication”
4. Returning to the main “Session” menu, enter the host name for the instance
  - a. Host name: ec2-3-12-20-106.us-east-2.compute.amazonaws.com
  - b. Port: 22
  - c. Connection type: SSH
5. Save the configuration settings as a session, then open the SSH connection.
6. On the SSH console, after being prompted for login information, enter “ubuntu”
7. User will now be logged in to the Amazon EC2 instance

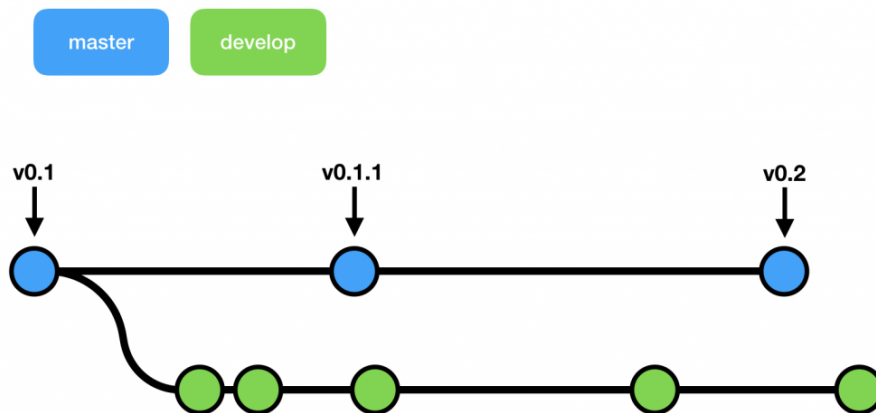
# Contributing to Project Development

For the frontend and backend code, developers will contribute to the project through the repository on GitHub. Instructions on installing and running the project will be available on the README of the repository.

**Project Repo:** [https://github.com/Shujoyl/CSULB\\_CECS\\_Wiki](https://github.com/Shujoyl/CSULB_CECS_Wiki)

## Project Workflow

Our project will utilize the “GitHub flow” method to organize project updates. Any developers who wish to contribute will create their own branch off the “master branch” to develop on, and then commit and submit a pull request to be approved by one of the core developers. Information about GitHub flow is available on this [guide](#).



No outside developers will currently be able to contribute, as our class grade most likely depends on the project being done within the team. After Spring Semester 2021, the project may become open-source and open to modification from the community.

# Developer Support

For further project support, please contact any one of us below:

Parth Chhasatiya: [parth.chhasatiya@student.csulb.edu](mailto:parth.chhasatiya@student.csulb.edu)

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