

# CSCC01 eBeauty System Design Document

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July 2, 2022

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## CRC Cards

### Frontend Classes

Class: /frontend/src/index.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Used to render the app by combining all the components inside App.js into one final web app.</li></ul>	<ul style="list-style-type: none"><li>App.js</li></ul>

Class: /frontend/src/App.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Manages the components of the app as a root component.</li><li>Used to render the app.</li></ul>	<ul style="list-style-type: none"><li>/src/index.js</li></ul>

Class: /frontend/src/store.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>A store that combines all the reducers in one root reducer</li></ul>	<ul style="list-style-type: none"><li>index.js</li></ul>

## Action

Class: /frontend/src/actions/taskProviderAction.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>• An action file contains two method to list all task providers from backend</li><li>• Fetch data from backend to frontend</li><li>• Dispatch when needed</li></ul>	<ul style="list-style-type: none"><li>• /components/SearchPage.js</li></ul>

## Components

Class: /frontend/src/components/AddressForm.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>• Used to connect to create a form to handle user input for addresses.</li></ul>	<ul style="list-style-type: none"><li>• N/A</li></ul>

Class: /frontend/src/components/AddressPage.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>• Allows users to enter a new address or change address.</li></ul>	<ul style="list-style-type: none"><li>• MapContainer.js</li><li>• Footer.js</li><li>• AddressForm.js</li></ul>

Class: /frontend/src/components/Animation.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>• animate the image inside findJon page</li></ul>	<ul style="list-style-type: none"><li>• findJob.js</li></ul>

Class: / frontend/src/components/FindJob.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>• Allows service providers to view the job page and access to their register page.</li></ul>	<ul style="list-style-type: none"><li>• /components/Animation.js</li></ul>

Class: / frontend/src/components/Footer.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>being footer of all pages</li> </ul>	<ul style="list-style-type: none"> <li>server.js</li> </ul>

Class: / frontend/src/components/Loader.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>A Loader when processing the data from DB, users will see a spinner.</li> </ul>	<ul style="list-style-type: none"> <li>/components/SearchPage.js</li> <li>Could be used to other js files as well</li> </ul>

Class: / frontend/src/pages/Login.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows users to login to their accounts.</li> <li>Receives user credential inputs for verification.</li> </ul>	<ul style="list-style-type: none"> <li>/css/Login.css</li> </ul>

Class: /frontend/src/components/MapContainer.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Used to connect to google map API and display a map.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/Message.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>A message alter if errors appears</li> </ul>	<ul style="list-style-type: none"> <li>/components/SearchPage.js</li> </ul>

Class: /frontend/src/components/Navbar.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows users to have access to homepage, register the different purpose's accounts and login</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/NotFound.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Used to redirect users back to the homepage when they encounter invalid URLs.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/Paginator.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>A pagination when too many data loaded in search page, users can navigate different page to see the results</li> </ul>	<ul style="list-style-type: none"> <li>/components/SearchPage.js</li> </ul>

Class: / frontend/src/components/ProfileProvider.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows service providers to edit their profile data.</li> <li>Allows service providers to edit their account information.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/ProviderCard.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>List of task providers that show up in the search page when users search strings</li> </ul>	<ul style="list-style-type: none"> <li>/components/SearchPage.js</li> </ul>

Class: /frontend/src/components/ScrollToTop.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>A helper class which resets the position of the client by setting the position of the viewer's location of the page to top after switching pages.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/SearchBox.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>This is the search bar from search result page</li> <li>Used to type strings</li> </ul>	<ul style="list-style-type: none"> <li>/components/SearchPage.js</li> </ul>

Class: / frontend/src/components/SearchPage.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Displays a search result page after users provide search input</li> <li>Allows users to search again and use filters with different attributes</li> </ul>	<ul style="list-style-type: none"> <li>/components/ServiceDropdown.js</li> <li>/components/ViewProfileProvider.js</li> </ul>

Class: / frontend/src/components/ServiceDropdown.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows users to specify the service they are searching for.</li> </ul>	<ul style="list-style-type: none"> <li>/components/SearchPage.js</li> </ul>

Class: /frontend/src/pages/SignUp.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows users to sign up/create new accounts for the app.</li> </ul>	<ul style="list-style-type: none"> <li>/css/SignUp.css</li> </ul>

Class: / frontend/src/components/SignUpProvider.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows service providers to fill in their information and register to the app as a first step.</li> <li>Collect basic information about service providers.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/SignUpProviderTwo.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows service providers to view the job page and access their registration page as a second step.</li> <li>Collects additional information about service providers.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/SignUpProviderThree.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows service providers to upload their profile image and access their registration page as a third step.</li> <li>Collects additional information about service providers.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: / frontend/src/components/ViewProfileProvider.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows users to view the profiles of service providers.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/Home.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Displays general information about the app.</li> <li>Provides a quick search option.</li> <li>Attracts potential users to sign up to the app.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Class: /frontend/src/components/Review.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Allows users to enter reviews with star ratings to their service providers</li> </ul>	<ul style="list-style-type: none"> <li>App.js</li> </ul>

## Helper Classes

Class: /frontend/src/helper/Alerting.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>A helper class to replace alert(). looks more formal and user-friendly</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

## Reducer

Class: /frontend/src/reducers/taskproviderReducer.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>Request reducer for all task providers</li> <li>Request reducer for a task provider detail</li> </ul>	<ul style="list-style-type: none"> <li>store.js</li> </ul>

## Backend Classes

### Models

Class: /backend/models/customerModel.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines MongoDB schema for Customer DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/customerController.js</li></ul>

Class: /backend/models/postModel.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines MongoDB schema for Post DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/postController.js</li></ul>

Class: /backend/models/providerModel.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines MongoDB schema for Provider DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/providerController.js</li></ul>

Class: /backend/models/reviewModel.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines MongoDB schema for Review DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/reviewController.js</li></ul>

Class: /backend/models/serviceModel.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines MongoDB schema for Service DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li></ul>

Class: /backend/models/taskproviderModel.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines MongoDB schema for TaskProvider DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li></ul>



## Routes

Class: /backend/routes/customerRoute.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines endpoints for Customer DB</li><li>Connects controllers through router</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/customerController.js</li></ul>

Class: /backend/routes/imageRoute.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines endpoints for image DB</li><li>does the connection of database on it's own</li><li>post image, get image, and delete image from DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li></ul>

Class: /backend/routes/postRoute.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines endpoints for Post DB</li><li>Connects controllers through router</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/postController.js</li></ul>

Class: /backend/routes/providerRoute.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines endpoints for Provider DB</li><li>Connects controllers through router</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/providerController.js</li></ul>

Class: /backend/routes/reviewRoute.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines endpoints for Review DB</li><li>Connects controllers through router</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/reviewController.js</li></ul>

Class: /backend/routes/taskproviderRoute.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Defines endpoints for TaskProvider DB</li><li>Connects controllers through router</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/controllers/taskproviderRoute.js</li></ul>

## Controllers

Class: /backend/controllers/customerController.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Registers a new customer by creating a new entry and updating it in Customer DB</li><li>Allows customers log into the app by checking their login credentials with credentials stored in Customer DB</li><li>Retrieves a single customer or entire customers data from DB</li><li>Deletes a customer entry from DB</li><li>Updates attributes of customer entry in DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/models/customerModel.js</li></ul>

Class: /backend/controllers/postController.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Manages post entries of the app</li><li>Retrieves post entries from DB</li><li>Creates/Inserts a new post entry into DB</li><li>Deletes a post entry from DB</li><li>Updates a post entry in DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/models/postModel.js</li></ul>

Class: /backend/controllers/providerController.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Registers a new service provider by creating a new entry and updating it in Customer DB</li><li>Allows service providers log into the app by checking their login credentials with credentials stored in Customer DB</li><li>Retrieves a single provider or entire providers data from DB</li><li>Deletes a provider entry from DB</li><li>Updates attributes of provider entry in DB</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/models/providerModel.js</li></ul>

Class: /backend/controllers/reviewController.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>• Manages review entries of the app</li> <li>• Retrieves review entries from DB</li> <li>• Creates/Inserts a new review into DB</li> <li>• Deletes a review entry from DB</li> <li>• Updates a review entry in DB</li> </ul>	<ul style="list-style-type: none"> <li>• Server.js</li> <li>• /models/reviewModel.js</li> </ul>

Class: /backend/controllers/taskproviderController.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>• Retrieves task providers for search feature</li> <li>• Retrieves a task provider by id</li> </ul>	<ul style="list-style-type: none"> <li>• Server.js</li> </ul>

## Middleware

Class: /backend/middleware/authMiddleware.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Checks authentication for access</li></ul>	<ul style="list-style-type: none"><li>Server.js</li><li>/models/providerModel.js</li></ul>

Class: /backend/middleware/errorMiddleware.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>Handles NotFound and DB query errors</li></ul>	<ul style="list-style-type: none"><li>Server.js</li></ul>

Class: /backend/middleware/upload.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>create a bucket for uploading images. (GRIDFS)</li></ul>	<ul style="list-style-type: none"><li>/routes/imageRoute.js</li></ul>

## config

Class: /backend/config/db.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>connect server to database, need .env to provide connection url</li></ul>	<ul style="list-style-type: none"><li>server.js</li><li>seeder.js</li></ul>

## data

Class: /backend/data/profile.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>sample data of profile database</li></ul>	<ul style="list-style-type: none"><li>seeder.js</li></ul>

Class: /backend/data/service.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"><li>sample data of profile database</li></ul>	<ul style="list-style-type: none"><li>seeder.js</li></ul>

Class: /backend/data/taskprovider.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>sample data of taskprovider database</li> </ul>	<ul style="list-style-type: none"> <li>seeder.js</li> </ul>

Backend (Inside backend folder directly)

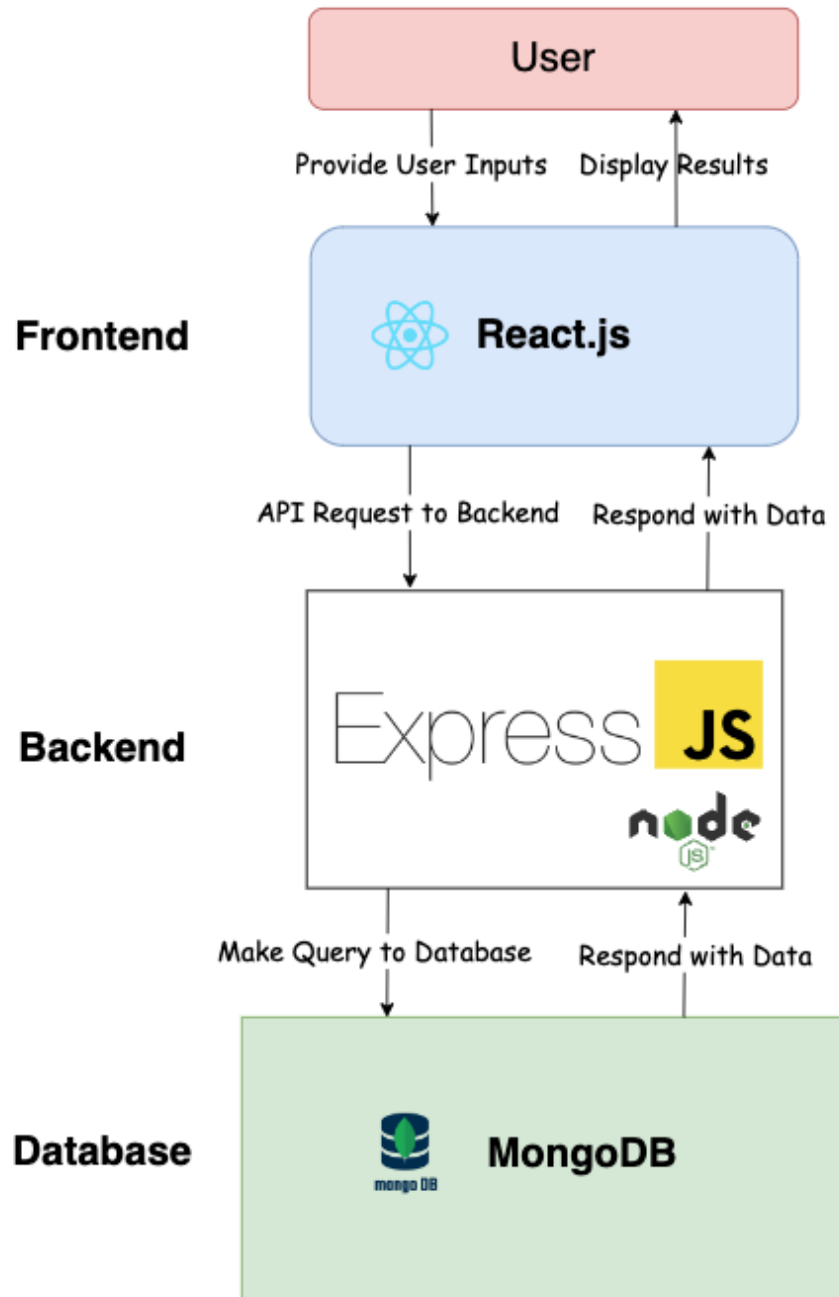
Class: /backend/server.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>settle express, defines endpoints and manages API methods.</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> </ul>

Class: /backend/seeder.js	
Responsibilities	Collaborators
<ul style="list-style-type: none"> <li>load/delete sample to database</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> </ul>

# System Architecture Design

## MERN Stack

Our web application follows a 3-tier architecture which is composed of frontend, backend, and database using JavaScript and JSON. React.js is responsible for the frontend operations of the app while Express.js and Node.js perform server-side operations. To store the data from the app, we use MongoDB, a document-oriented NoSQL database. This 3-tier architecture is also known as MERN stack which is an abbreviated form of **M**ongoDB, **E**xpress, **R**eact, and **N**ode.



## System Flow Decomposition

Users first interact with the UI components of React.js in the web browser. They can browse the different pages of the app and provide inputs for different operations such as login/register, search, comments, or reviews. Since the web page is served by Express.js running on Node.js, whenever users provide inputs, the server-side applications can collect them and send them to the MongoDB database. Also, whenever users request data from the database, Express.js is responsible for retrieving the data from the database through querying.