System Design - RecruitMe

Fall 2022 CSCC01 Project

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Front-End CRC Cards

View_profile Parent class: none Subclasses: none Responsibilities: - Users can view their profile - A user can only edit his/her profile only - - Collaborations (models): - Users -	**Landing Page** Parent class: none Subclasses: none Responsibilities: - Redirects users to login/sign up. Collaborations: - Login - Sign up -	**Recruiter Profile:** Parent class: none Subclasses: none Responsibilities: - For registered recruiters to edit their profile such as name, phone, and which company they represent via the company page Collaborations (models): - Users
Jobseeker Profile: Parent class: none Subclasses: none Responsibilities: For a registered job seeker user to be able to edit his/her profile information such as name, phone number, bio, work experiences, upload profile picture and resume. - Collaborations (models): - User	**Signup Page** Parent class: none Subclasses: none Responsibilities: For users to select a job seeker or recruiter account type and register with their email and password Collaborations (models): - Users	**Login Page** Parent class: none Subclasses: none Responsibilities: For job seekers and recruiters to log in to their profile using their email and password Collaborations (models): - Users

Back-End CRC Cards

User
Parent class: none
Subclasses: none
Responsibilities:
- Save all user information including email, password, recruiter/job-seeker status and so on
- Have abstract user information where built-in password verification can be used
- Have the ability to create profile, register and login
- Able to authenticate if user is logged in or not
 	
Collaborations:
- Sign up
- Sign up for Recruiter Profiles
- Sign up for Job-seeker Profiles
- Login
	Login:
	Parent class: none
	Subclasses: none
	Responsibilities:
	- Authenticates users who have registered themselves to access the application
	- Display an error message if authentication fails
	- The user can browse and access the application so long as they are not logged out or the session has timed-out.
	- Allows the user to reset their password
	- Provides a link to users who sign-up if they haven't registered themselves before.
	Collaborations:
	- Users
	- Signup
		Sign up:
		Parent class: none
		Subclasses: npne
		Responsibilities:
		- Require user to fill the mandatory fields for registering:
		  - email
		  - Email Address
		  - Password
		- User need to follow some rules while making a new password
		  - Not similar with personal information
		  - Passwords should be at least 8 characters.
		  - Password can't be entirely numeric
		  - Display a Welcome message after signing up.
		
		Collaborations:
		- Users

Profile for Recruiter: Parent class: User Subclasses: none Responsibilities: - Save all user information including	**Profile for Job-seeker:** Parent class: User Subclasses: none Responsibilities: - Save all user information including	**Post:** Parent class: Noe Subclasses: none Responsibilities: None Collaborations: None

name, company, age,bio,user_id, workExp,jobPosts, current Status, and profile picture Collaborations: - Users - Post	name,user_id,phoneNumber,phoneNumber, age,bio,workExperience,education,appliedPost, currStatus, profile picture, and resume Collaborations: - Users - Post	

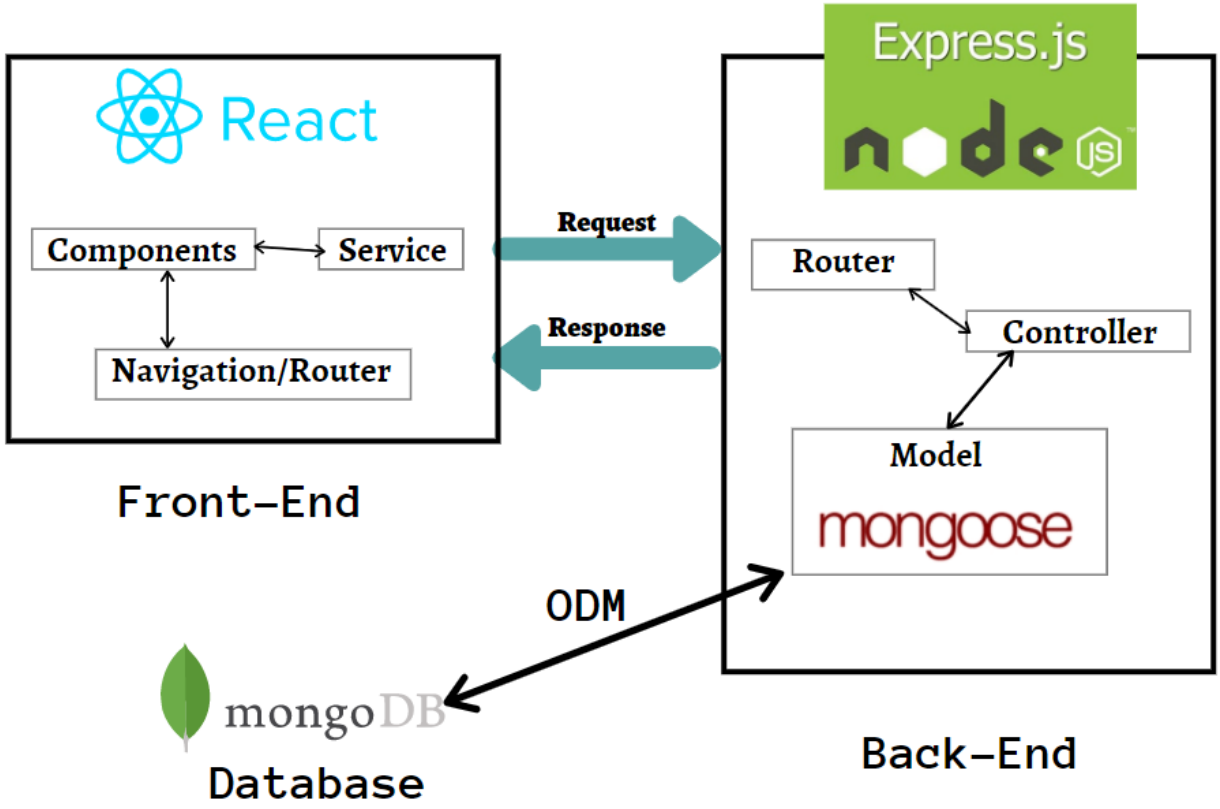
Description of System Interaction with Environment

The user must have a working browser with internet access on any technological device. Through the browser, the user is able to access the site and can login or sign up using a valid email and password. Upon logging in or signing up successfully, the user can browse and access the application so long as they are not logged out or the session has timed-out. Every user will have a profile where their profile name, and other basic info can be added or changed at will. If the user is uploading any data from their device (i.e for profile pictures or uploading documents), access to their system file storage will be required.

To run the web application locally, the steps are as follows: clone the Git repo to your device and run “sh firstinstall.sh” to install all dependencies and then run “sh runapp.sh” to start the web app. The sh script takes care of the installation and activation. The default port for accessing the frontend by which the app can be accessed is http://localhost:3000

Description of Architecture of the System

The software architecture model being used is the three-tiered architecture , where we are specifically using the MERN Stack. MERN stands for MongoDB, Express, React, Node, after the four key technologies that make up the stack: React(.js) makeup the top (client-side /frontend) , Express and Node make up the middle (application/server) tier, and MongoDB makes up the bottom(Database) tier. System Decomposition explains the relationship better below. The software architecture diagram below details the interaction of varying components in the system.



System Decomposition

The MERN architecture allows us to easily construct a three-tier architecture (front end, back end, database) .

The top tier of the MERN stack is React.js, the declarative JavaScript framework for creating dynamic client-side applications in HTML. React lets you build up complex interfaces through simple components, connect them to data on your back-end server, and render them as HTML.

The next level down is the Express.js server-side framework, running inside a Node.js server. Express.js bills itself as a “fast, unopinionated, minimalist web framework for Node.js,” and that is indeed exactly what it is. Express.js has powerful models for URL routing (matching an incoming URL with a server function), and handling HTTP requests and responses.

The next level down is the MongoDB database tier.MongoDB works extremely well with Node.js, and makes storing, manipulating, and representing JSON data at every tier of your application incredibly easy. For cloud-native applications, MongoDB Atlas makes it even easier, by giving you an auto-scaling MongoDB cluster on the cloud provider of your choice, as easy as a few button clicks.

There are several error prevention schemas in place, and a few are described in further detail: Errors during login and registration where common passwords are prevented from being used, as well as checking for valid email and password during each process. Username is also cross checked with the database to avoid creating duplicate usernames.