

Software Design Document

MyRecipe webApp



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Software Design Document

1. System Architecture

1.1 Overview

We are using Spring Boot 2.2, Azure Cosmos DB for MongoDB API, React 16.8, Bootstrap 3, Java as a programming tool, WebRCT(API), and libraries such as, Messaging libraries(JMS), Logging libraries, Unit-testing libraries, JSON parsing libraries. We will be using Spring Boot Framework on the backend and follow the MVC(Model View Controller) pattern.

The front end of our website will be purely built on React 16.8. React supports many core features which will be of great use for our website, such as component-based approach, backward compatibility, flexibility. At this point, we have a clear picture of the components we need for our website, and using React will allow us to design the UI components with a minimal effort as it follows a component-based approach. React also provides backward compatibility and flexibility which we believe our website will greatly benefit from. We have decided to use the latest version of React since many useful APIs are included such as Hooks. It is highly likely that we use the newly included APIs in React. In addition to React, we are using Bootstrap for the front end of our website for styling the pages. As Bootstrap has excellent documentation, it will save our time on styling the front-end. We will be using Bootstrap 3 in order for us to be able to use Glyphicon library.

The back end of our website will use Spring Boot 2.2 and Microsoft Azure Cosmos MongoDB. We decided to use Spring Boot because it is auto configured and does not need any manual configuration. It also manages Rest points easily. Similarly, MongoDB is simple to install and implement. It also provides high performance and automatic scaling. The libraries we decided to use may change later in the process, depending on the implementation of our code.

1.2 Components and interfaces

Major React Components for the frontend

App - root component

Home - extends from app and is parent for the following components

searchBar - it allows user to search for a meal either by meal name or ingredient it contains- (through ingredients filter). It will also have auto-complete list

NavBar - It has logo(link to home), search bar and some important buttons like- Login, Logout, profile, addRecipe

Categories: it has the meal categories including the following
meal type:- it could be either breakfast, lunch, dinner or supper
dish type:- starter, main dish, sweets, salad, fruits, juice
diet and health:- healthy foods, diet based dishes
world Cuisine:- it has cultural foods from different countries

ContactUs - is footer that has a contact information including aboutUs, social media links, phone number, email address and some other info

Recipe- it lets the user add their own recipes

addRecipe:

Categories: lets the user add a recipe to a specific category by providing an option where the user can select from list of categories

Ingredients: this has a list of ingredients where the user can add or remove from the recipe that they are adding. It has division under it to make it easier for the user to quickly select the ingredients. Some of the divisions are dairy, meat, vegetables, fruits, spices, seasonings etc...

descriptionForm: It contains meal name, description box, steps and an option to upload images for each steps, uploadVideo button to upload video and submit button to complete the form and register the recipe

editRecipe: edit recipe
favoriteRecipe: like a recipe
deleteRecipe: delete added recipe

profile - this refers to the personal pages of a specific user

myRecipes - it has the recipes that are uploaded by the user so far with their ratings shown as a star

myCategories: inherited from Recipe component to let the user filter their recipes by different categories

editRecipe: it helps edit the recipe that the user added

myReviews: it has lists of reviews given to each recipes with their ratings

myFavorites: it will have the list of favorite recipes that the user liked or added as favorite

Account:

Login - lets the user login with their google account

Logout - lets the user logout from their account

Followers - lets the user see his/her followers and also the user can click on a block button to block the users following him/her

Following - let the user look at the list of the people that he/she is following.

editProfile- lets the user change password, username, or aboutMe description including their profile picture

Notification- it tracks news feeds and notifications and lets the user look at the list of notifications he/she has.

Settings: allows the user to deactivate their account or delete their account

chatBox - root component

Title- contains the user name

messagesList- it contains the list of messages the people chatted

sendMessageForm- this refers to the text box where the user types the message

We will have one index.html file where it is used to link to the generated JS components, and has that one single parent node for the React content to attach itself to.

Detailed description for object oriented classes

(1) Recipe

- Attributes

Name	Type	Description
ID	String	The ID value will be the key that defines a single recipe.
LikeCount	Int	The number of likes that the recipe received
MealType	String	Is a category that describes the type of the meal which could be breakfast, lunch, dinner or supper
DietAndHealth	String	It is another category of a meal that contains specific type of meals that are healthy and diet specific
WorldCuisine	String	This category refers to cultural foods from different parts of the world
MealName	String	Refers to the name of the meal that is entered when the Recipe is added to the database
Description	String	Refers to the description entered by the user when the recipe is created and is added to the database
favoritedBy	ArrayList<User>	This contains a list of users that liked or added this recipe to their favorite list.

b,RecipeRepository: An interface to store,edit,and delete a recipe.

Name	Parameters	Return values	Description
delete	Recipe	void	Deletes Recipe from the Database
save	Recipe	void	Saves Recipe to the Database
find	recipeId	Recipe	Fetches Recipe with the given ID
update	recipeId	Recipe	Updates the Recipe

(2) GeneralUser<Interface>

- Methods

Name	Type	Description
getID	String	Describes the user's Id
getName	String	Has user's username
getProfilePic	Image	Has user's profile image which is an Image object
receiveNotification	Notification	Updates the user with new information regarding the user's account.

(3) AdminUser

- Attributes

Name	Type	Description
ID	String	Describes the user's Id
name	String	Has user's username
profilePic	Image	Has user's profile image which is an Image object

(4) User

- Attributes

Name	Type	Description
ID	String	Describes the user's Id
name	String	Has user's username
profilePic	Image	Has user's profile image which is an Image object
aboutMe	String	Describes user's 'about me' information
userStatus	AccountStatus	Shows the account status either deactivated or normal
Followers	ArrayList<User>	Has a list of users who are following the user
Following	ArrayList<User>	Has a list of users whom the user follow

BlockedByUsers	ArrayList<User>	Has a list of users who are blocked by the user
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b, The User Repository - An interface for the interaction with the user model and performing database.

Name	Parameters	Return values	Description
delete	user	void	Deletes user from the Database
save	user	void	Saves user to the Database
find	userId	User	Fetches user with the given ID
update	userId	User	Updates the user

(5) Message

- Attributes

Name	Type	Description
ID	String	ID value that uniquely identifies the message object.
sender	User	the user by whom the message is sent
receiver	User	the user to whom the message is sent
messageText	String	has the message text to be sent to the receiver
readBoolean	Boolean	shows if the message is read by the receiver or not
image	Image	has the image to be sent to the receiver

- **The Message Repository**

Name	Parameters	Return	Description
editMessage	User	void	is used to edit the text message to user after the message being sent
deleteMessage	User	void	is used to delete a text message which is already sent
sendMessage	User	void	used to send a message to the receiver

(6) Notification

- Attributes

Name	Type	Description
ID	String	An id that uniquely identifies a notification object
notificationText	String	The attribute holds the notification text description
readBoolean	Boolean	This boolean would help to track notifications that are already read and the ones that are not visited yet

(7) Comment

- Attributes

Name	Type	Description
ID	String	The comment id helps to uniquely identify comments
likesCount	Int	The number of likes that the comment received
recipe	Recipe	Refers to the recipe that the comment is given toHas all the recipes the user has posted on page
commentLikedBy	User	The user comment like the comment from other user

-The Comment Repository

Name	Parameters	Return	Description
addComment	-	void	addComment adds the user's comment given to a specific recipe
deleteComment	-	void	Delete method is used to delete a text comment which is already sent
editComment	-	void	editComment method is used to edit the text Comment to user after the comment is posted

8) Review

- Attributes

Name	Type	Description
ID	String	The Id would uniquely identify the review object
recipe	Recipe	This is the recipe that is being reviewed or rated
reviewGiven	Int	This could track the reviews that the recipe received

9) Image

- Attributes

Name	Type	Description
ID	String	The id uniquely identifies the image object
imgCap	String	This has a caption of the image

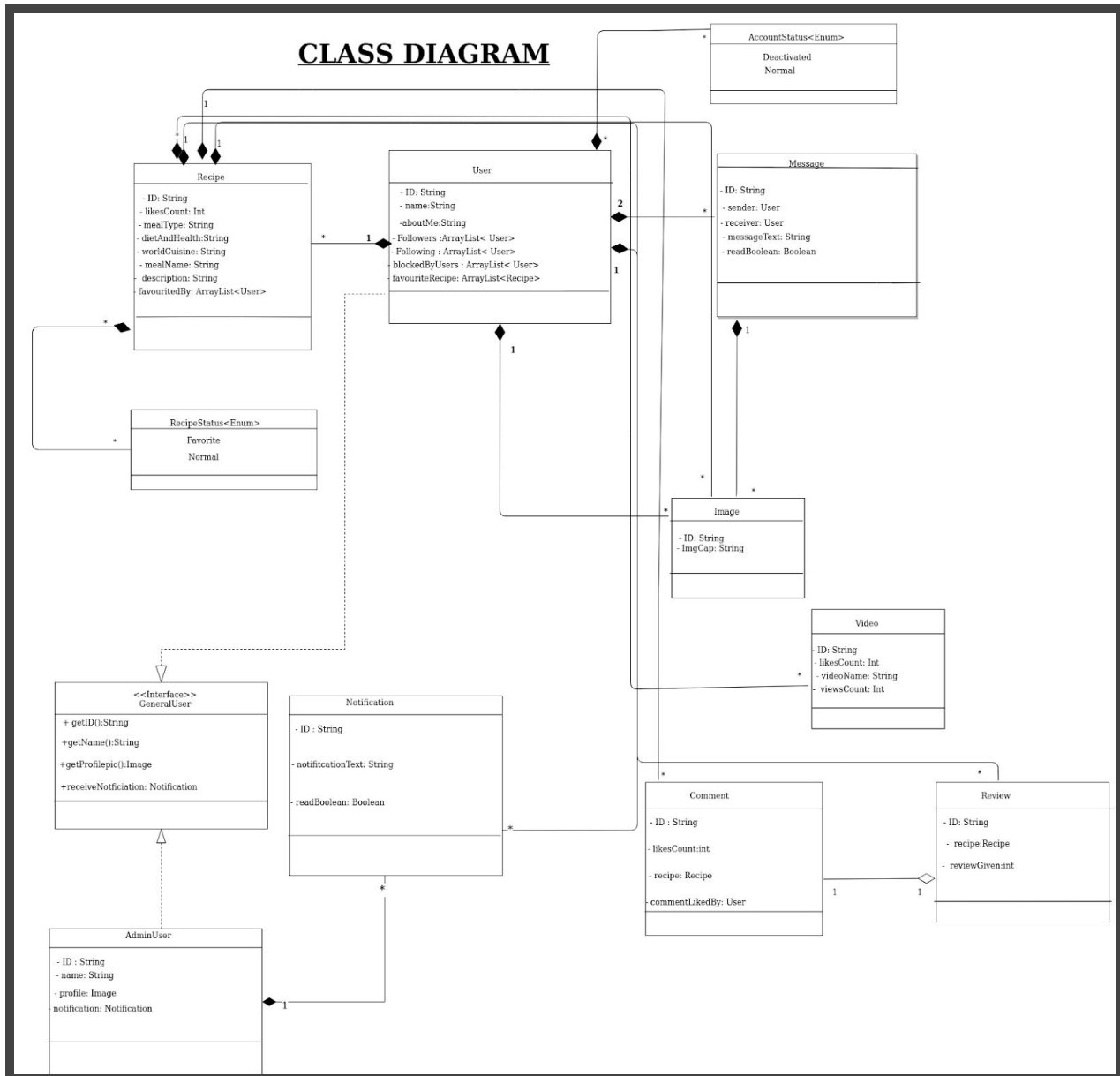
10) Video

- Attributes

Name	Type	Description
ID	String	The ID value will be the key that defines a user
likesCount	String	The number of like that the video received
videoName	String	The user input of the videoName from the User use case
videoCount	Int	The number of videoCount that the video received

1.3 UML Class Diagram

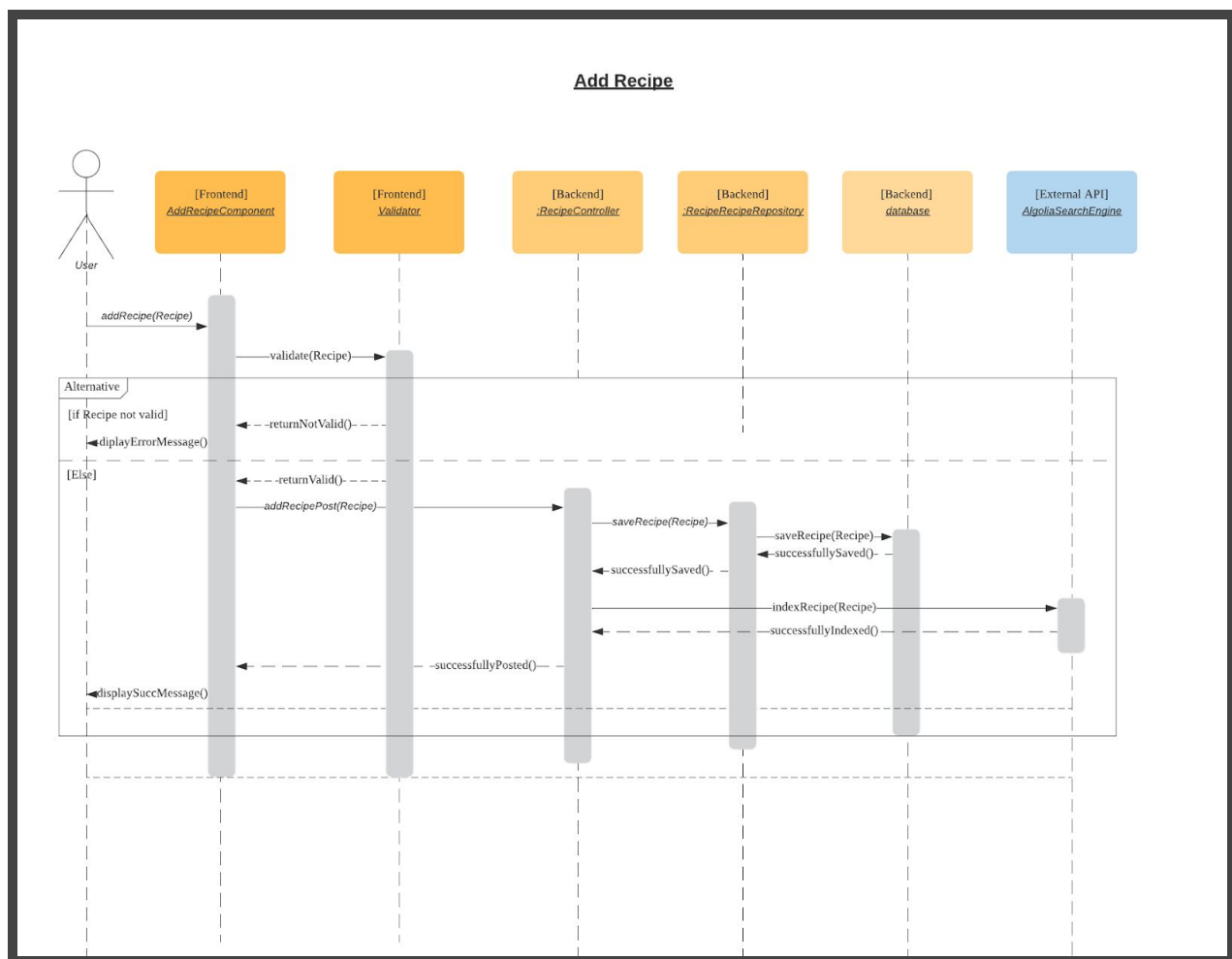
https://app.diagrams.net/#G1r1xh5914B5bmROgwju_OvgGK0r-5If2y



1.4 UML Sequence Diagrams

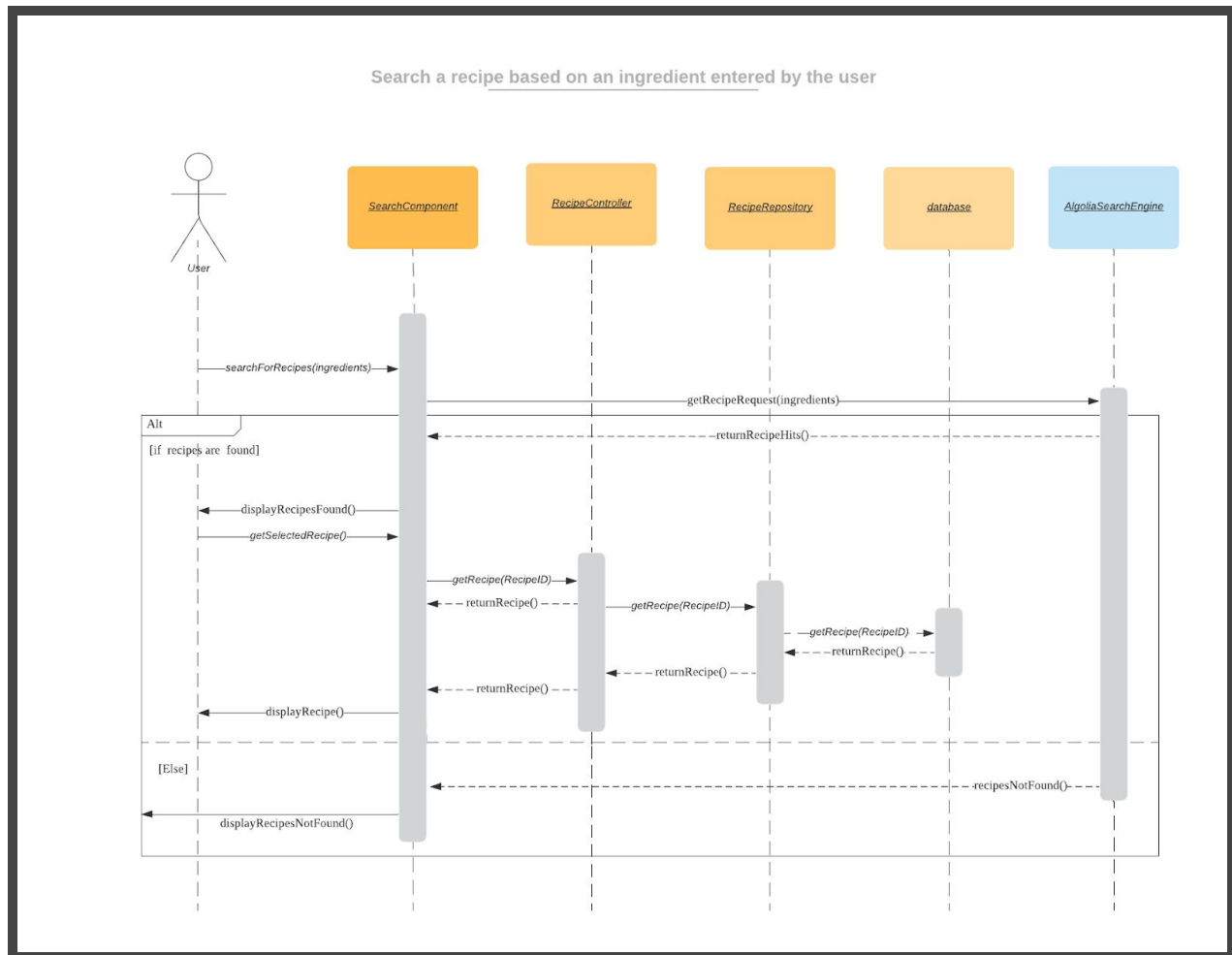
1.4.1 ADD Recipe

https://www.lucidchart.com/documents/edit/daa98cb7-cfb7-4c9d-8ab7-2d4912b9c1ca/0_0



1.4.2 Search a recipe based on an ingredient entered by the user

https://www.lucidchart.com/documents/edit/ef294250-de7b-4e97-9052-439695208515/0_0



1.5 Deployment:

We will be using Microsoft Azure for the full development of our application. For this, we will be using the Azure Cosmos DB for MongoDB API as our database. In addition, both the backend spring boot application and the react front end of our application will be deployed to Microsoft Azure.

1.6 Alternatives:

We will be using MongoDB for our database with MySQL as a second option. Similarly, We plan to use Google Auth for signing in(authentication and verification). However, depending upon the users' experience, we might include account creation features rather than simply using Google Auth.

2. Schedule

<https://trello.com/b/OUJ2p6AO/schedule>

