

**Advanced Java – Fall 2021**  
Assignment 2

February 11, 2022

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## 0.1 Introduction

To build a web application using MVC architecture which is backed by covid statistics data. 3 types of users are present in this application - **Regular Users**, **Admins** and **Guest users**. Different scenarios for each user has been built.

## 0.2 Overview of Implementation

### 0.2.1 Models

- **User** - The entity that contains user related information.  
`id, firstName, lastName, email, password, userType, countries`  
The `countries` field denotes the list of countries that user has selected to view the statistics of.
- **Row** - Its an intermediate model class used to hold the dataset information.
- **CovidData** - The entity which contains cumulative data for each country. Achieved by aggregating the dataset fields over country.

### 0.2.2 Controllers

- **UserController** - Maps all the request related to user information like get, update, delete to their respective views. Also contains some helper functions related to user.
  1. `/user` - POST - save new user
  2. `/users/new` - GET - maps to new user view
  3. `/edit` - PATCH - updates an user
  4. `/editUser` - GET - maps to edit users (admin) view
  5. `/users` - GET - maps list of users view
  6. `/guest` - GET - maps guest view
  7. `/main` - GET - maps regular user view
  8. `/authenticate` - POST - authenticates the user based on creds and redirect to associated view.
  9. `/addcountry` - POST - adds a new country to list of countries of the user.
  10. `/removeCountry` - DELETE - removes a country from list of countries of a user.
  11. `/users/delete/id` - DELETE - removes a user from available users. (admin)
  12. `/populate` - GET - api to populate covid data into the database after reading from dataset.
- **MainController** - Maps the home url to the homepage.
  1. `/` - Maps the home view

### 0.2.3 Views

- `index.html` - The login view
- `main.html` - view of regular users. Here regular users can view the data of the selected countries.
- `guest.html` - view for guest users. Here guest users can view the data of all the countries, they can filter out using the search bar provided.

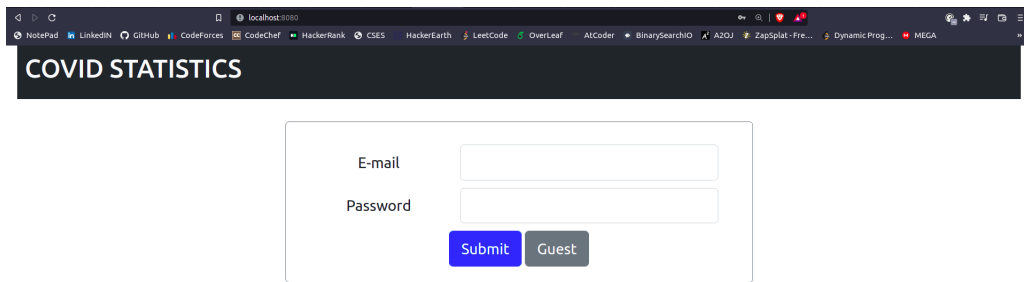


Figure 1: index.html

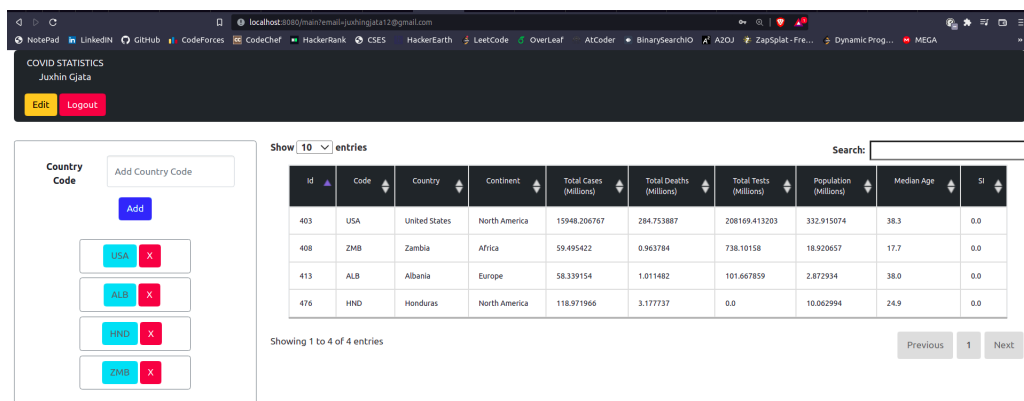


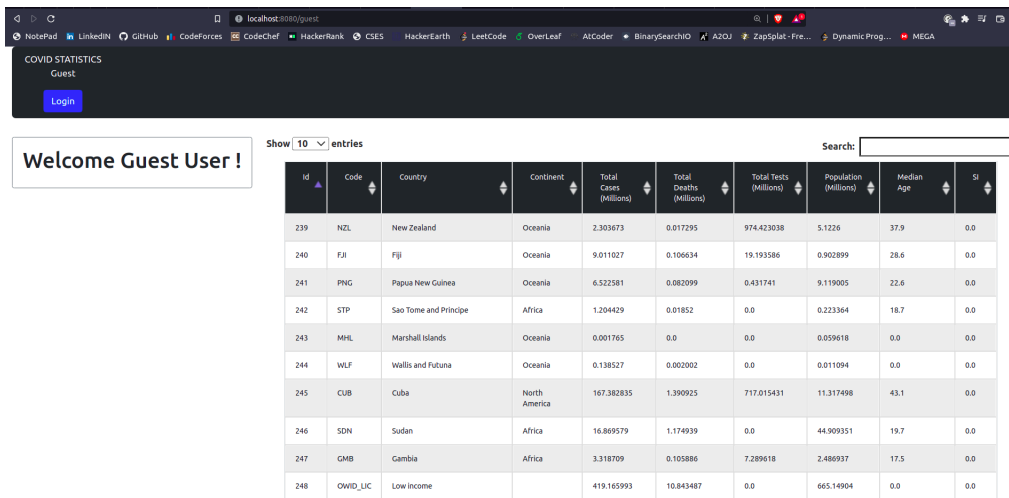
Figure 2: main.html

- `users.html` - List of users view (admin). Here admin can view the available users on the system.
- `newUserForm.html` - Add user view.
- `edituserForm.html` - Update user view.

## 0.2.4 Database

- Database used - MySQL
- Tables:

1. `users` - contains user entity information
2. `covidData` - contains covidData entity information.



COVID STATISTICS  
Guest

Login

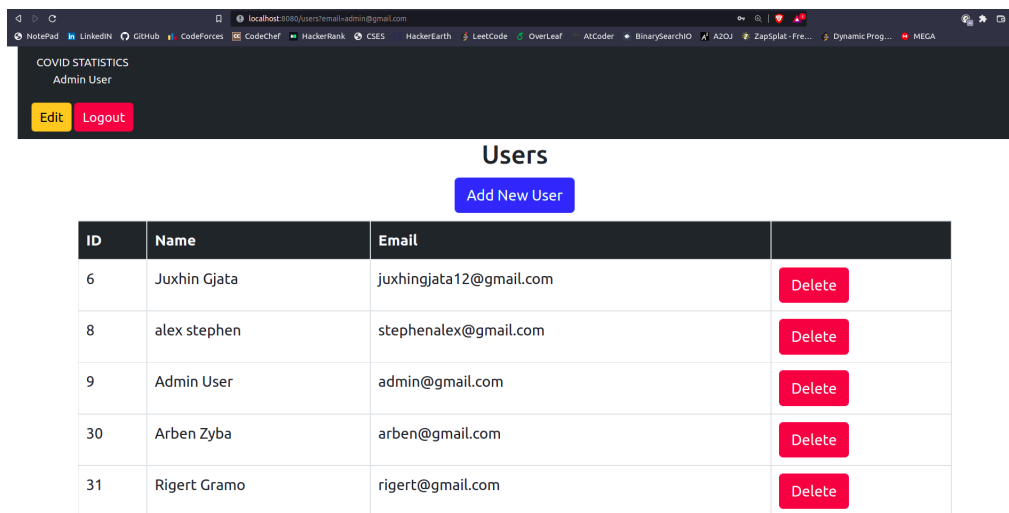
Welcome Guest User !

Show 10 entries

Search:

Id	Code	Country	Continent	Total Cases (Millions)	Total Deaths (Millions)	Total Tests (Millions)	Population (Millions)	Median Age	SI
239	NZL	New Zealand	Oceania	2.303673	0.017295	974.423038	5.1226	37.9	0.0
240	FJI	Fiji	Oceania	9.011027	0.106634	19.193586	0.902899	28.6	0.0
241	PNG	Papua New Guinea	Oceania	6.522581	0.082099	0.431741	9.119005	22.6	0.0
242	STP	Sao Tome and Principe	Africa	1.204429	0.01852	0.0	0.223364	18.7	0.0
243	MHL	Marshall Islands	Oceania	0.001765	0.0	0.0	0.059618	0.0	0.0
244	VLF	Wallis and Futuna	Oceania	0.138527	0.002002	0.0	0.011094	0.0	0.0
245	CLB	Cuba	North America	167.382835	1.390925	717.015431	11.317498	43.1	0.0
246	SDN	Sudan	Africa	16.869579	1.174939	0.0	44.909351	19.7	0.0
247	GMB	Gambia	Africa	3.318709	0.105886	7.289618	2.486937	17.5	0.0
248	OWID_LIC	Low Income		419.165993	10.843487	0.0	665.14904	0.0	0.0

Figure 3: guest.html



COVID STATISTICS  
Admin User

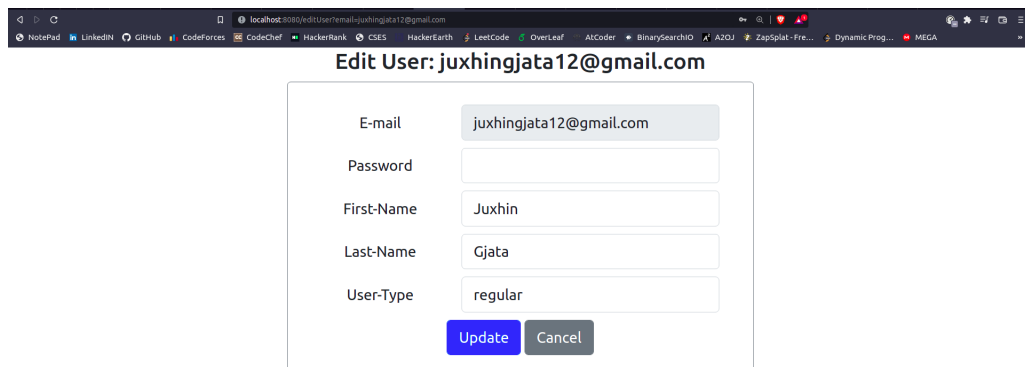
Edit Logout

Users

Add New User

ID	Name	Email	Delete
6	Juxhin Gjata	juxhingjata12@gmail.com	Delete
8	alex stephen	stephenalex@gmail.com	Delete
9	Admin User	admin@gmail.com	Delete
30	Arben Zyba	arben@gmail.com	Delete
31	Rigert Gramo	rigert@gmail.com	Delete

Figure 4: users.html



The screenshot shows a web browser window with the address bar displaying `localhost:3030/editUser?email=juxhingjata12@gmail.com`. The browser's tab bar includes links to NotePad, LinkedIn, GitHub, CodeForces, CodeChef, HackerRank, CSES, HackerEarth, LeetCode, OverLeaf, AlCoder, BinarySearchIO, ADDJ, Zapsplat - Fre..., Dynamic Prog..., and MEGA. The main content area has the title **Edit User: juxhingjata12@gmail.com**. Below the title is a form with the following fields:

E-mail	<input type="text" value="juxhingjata12@gmail.com"/>
Password	<input type="password"/>
First-Name	<input type="text" value="Juxhin"/>
Last-Name	<input type="text" value="Gjata"/>
User-Type	<input type="text" value="regular"/>

At the bottom of the form are two buttons: **Update** (in blue) and **Cancel** (in grey).

Figure 5: editUser.html