Caribbean Emergency Registry System

Mobile and Web Application Development II
SWEN 3004

Ashray Soares	190910	Shane Okukenu	190902
Jason Charles	190906	Tevin Taylor	190901
Joshua Alkins	190908	Ron Neo Alexis	190904

Introduction

Problem

- As of January 30th 2020 the World Health Organization declared the Covid-19 outbreak a public health emergency of international concern.

- Barbados is now in need of a way to find their nationals and check on their status & well being, as well as gain contact with medical professionals with ties to the country.

- The Barbados Ministry of Foreign Affairs requested a solution this problem.

Problem Definition

There is a necessity for an efficient method for the Barbados Government to track citizens travelling abroad, as well as contact citizens and diaspora abroad in the event of an emergency or to provide opportunities.

Solution

- A Barbados Citizen Registry Website.
- The system should allow Barbadian citizens and diaspora to register their personal, locational and professional information with the Government.
- The information can queried by Government Administrators so the information may aid in decision making.

Assumptions and Details

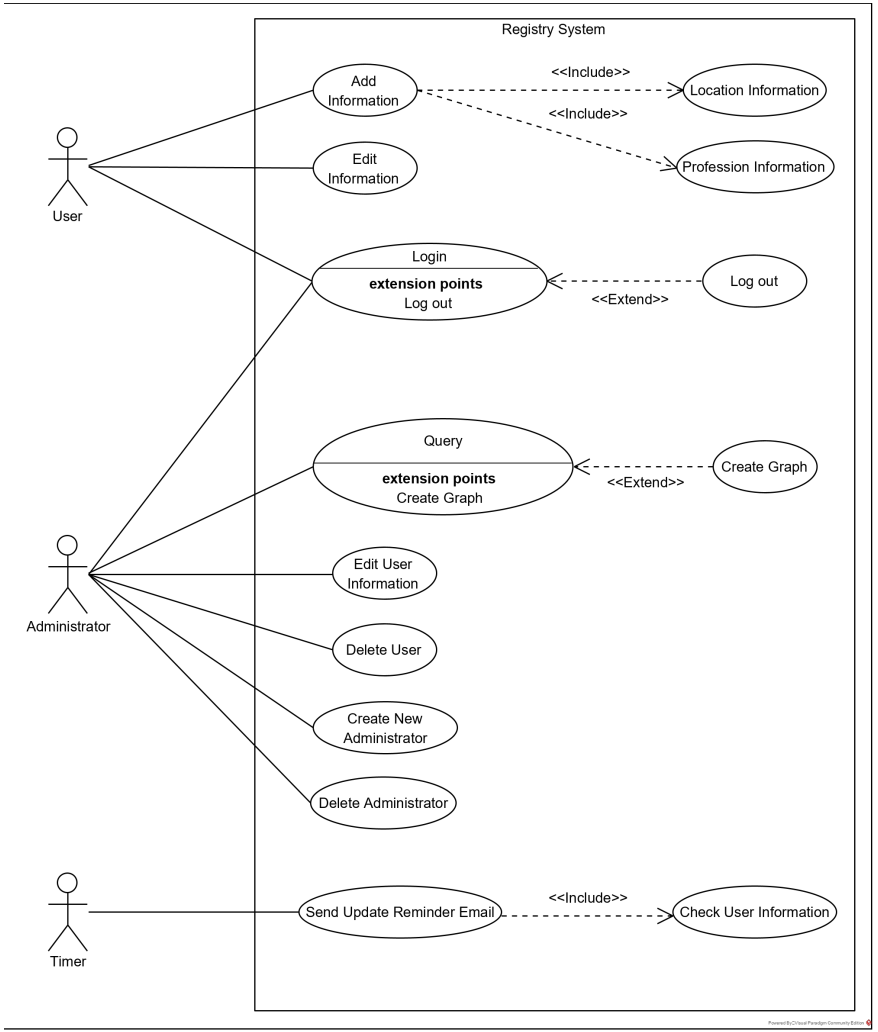
- Non-Nationals should be able to use the system
- Passports are not required in order to use the system
- I.T. Division/Admin support for website management
- Personnel available for contact support

Used Technologies

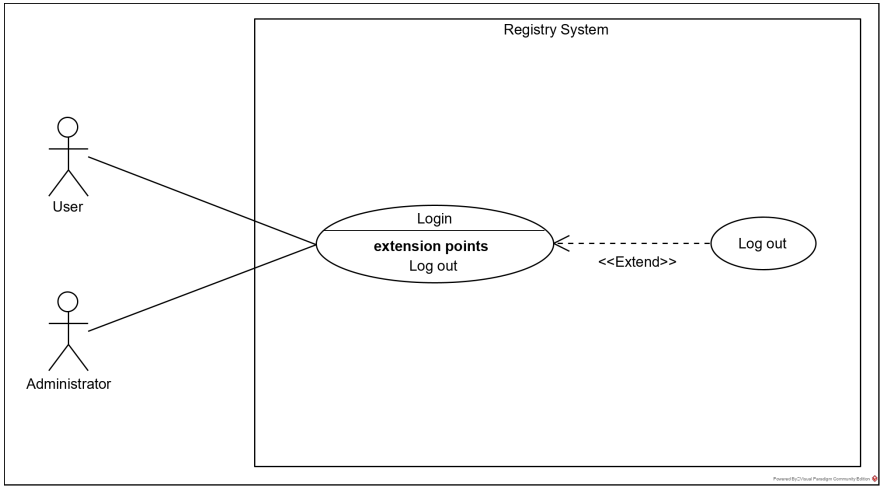
- Python Flask
  - Simple and flexible backend framework
- Web-Page Frontend
  - HTML
  - CSS
  - JavaScript
- MongoDB
  - Non-relational database
  - Allows for:
    - Easy storage of data in clusters
    - Quick retrieval of data
- PyMongo
  - Standard library used to connect Python programs and MongoDB databases
- Flask-Login
- ItsDangerous
  - Encryption
- Flask-Mail
  - Automated Email Service
- Gunicorn
  - Web Server Gateway

Requirements

Use Cases

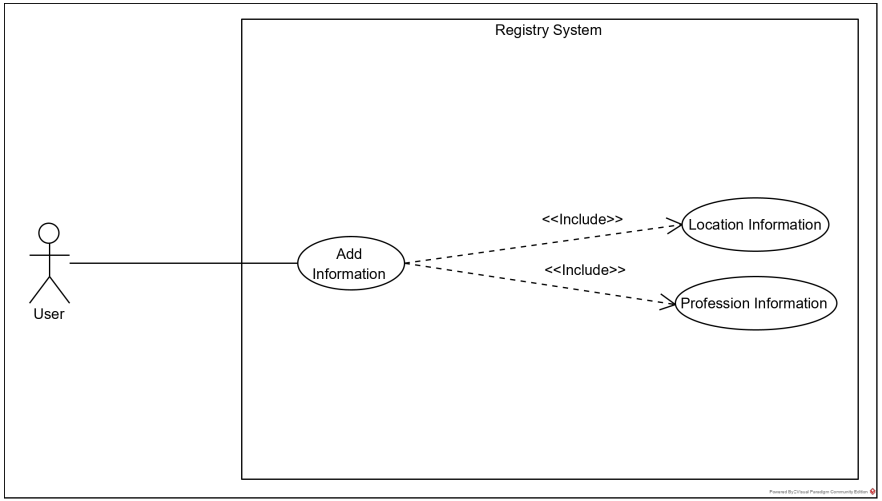

Registry System
Add Information
<<Include>>
Location Information
<<Include>>
Edit Information
Profession Information
User
Login
extension points
Log out
Log out
<<Extend>>
Query
extension points
Create Graph
Create Graph
<<Extend>>
Edit User Information
Administrator
Delete User
Create New Administrator
Delete Administrator
Send Update Reminder Email
<<Include>>
Check User Information
Timer

LOGIN



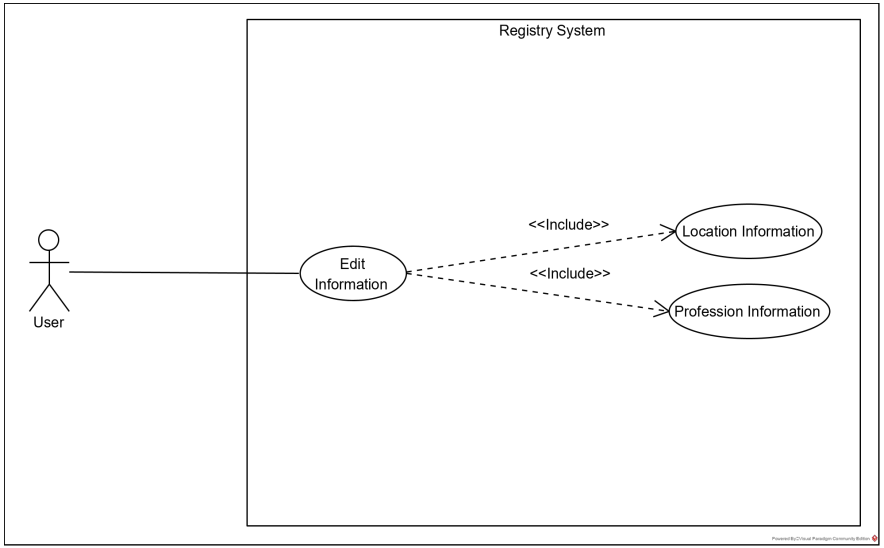
Users who are normal users and administrators are able to log into the website to retrieve, update or edit information.

ADD INFORMATION



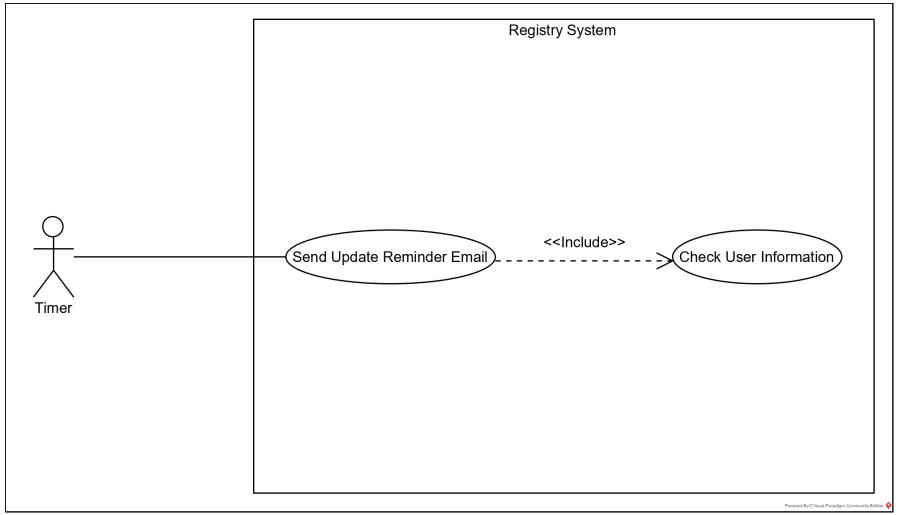
Users are able to add required information to be saved to the database which will be collected via forms.

EDIT INFORMATION



Users are able to edit and update previously entered data.

SEND UPDATE REMINDER EMAIL



Reminder emails will be sent periodically to user to remind them and update their information if needs be.

Design Decisions

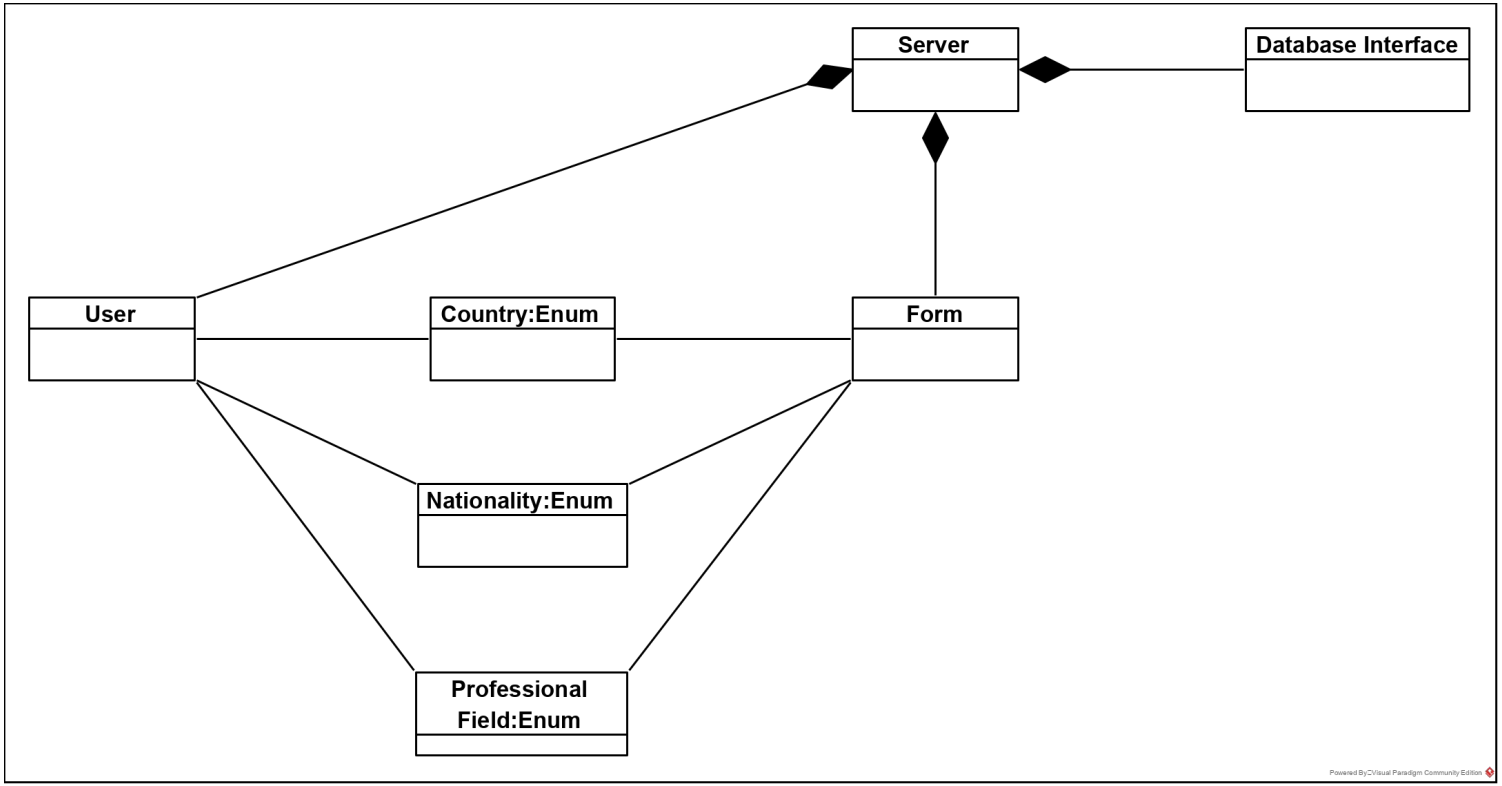
Design Decision	Rational
Root Administrator	● A single hard coded administrator ● Allows for the creation of new administrators ● Ensures one account is always accessible.
Graph Queries	Easy conversion of data into a more human readable format.
Administrators Editing User Information	Allows administrators to assist users with correcting or adding information
Sending Update Reminders via Email	Help ensure stored data is up-to-date.

Non-Functional Requirements

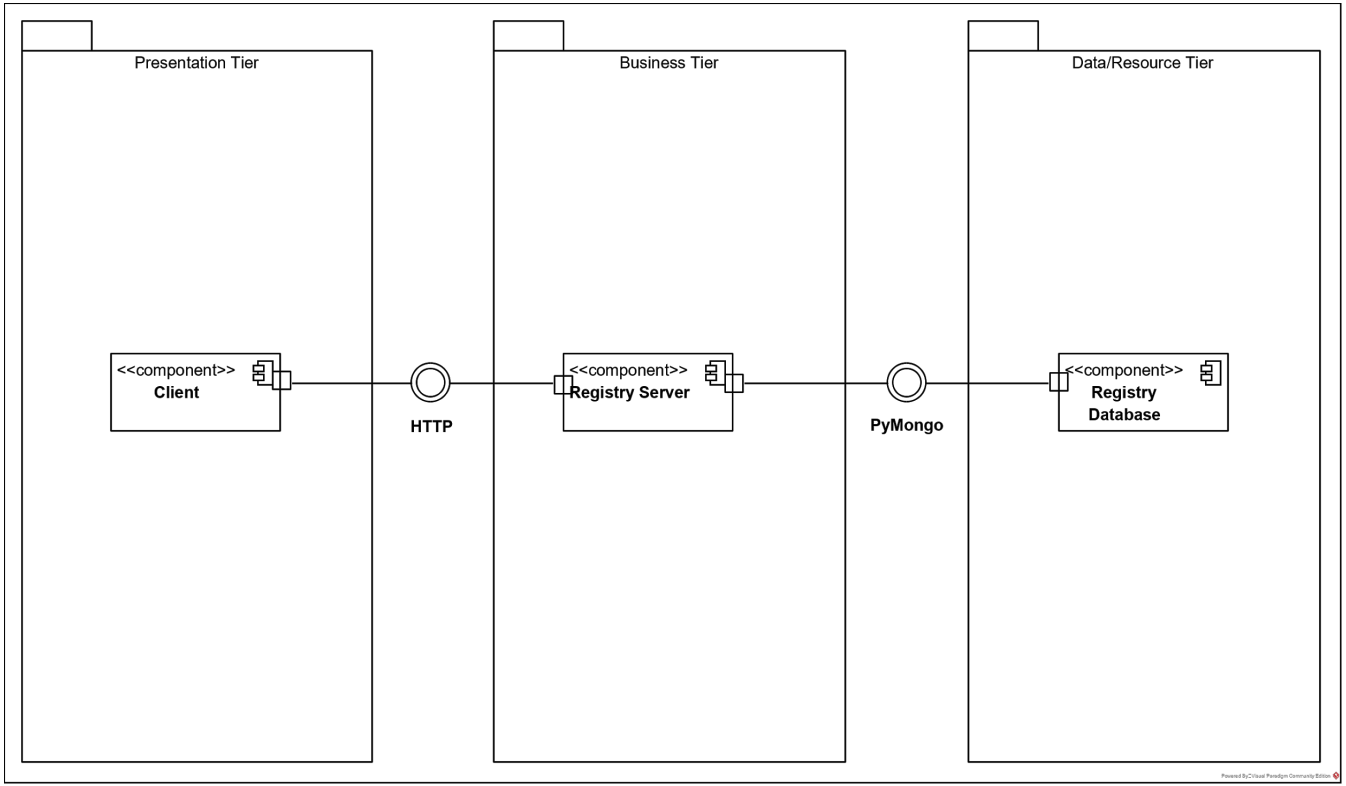
- Security
  - Sensitive personal information
  - Password encryption
  - Data encryption
- Peak Load
  - 10 M concurrent users
  - Barbados population of 290,000
  - Jamaica population of 2.9 M
- Accessibility
  - The system must be easily accessible from devices with internet connectivity
  - The system must be accessible for 90% of the year, with the remaining 10% for maintenance
- Responsiveness
  - User should be able to load each page of the website within 5 seconds given an average internet connecting.

Design

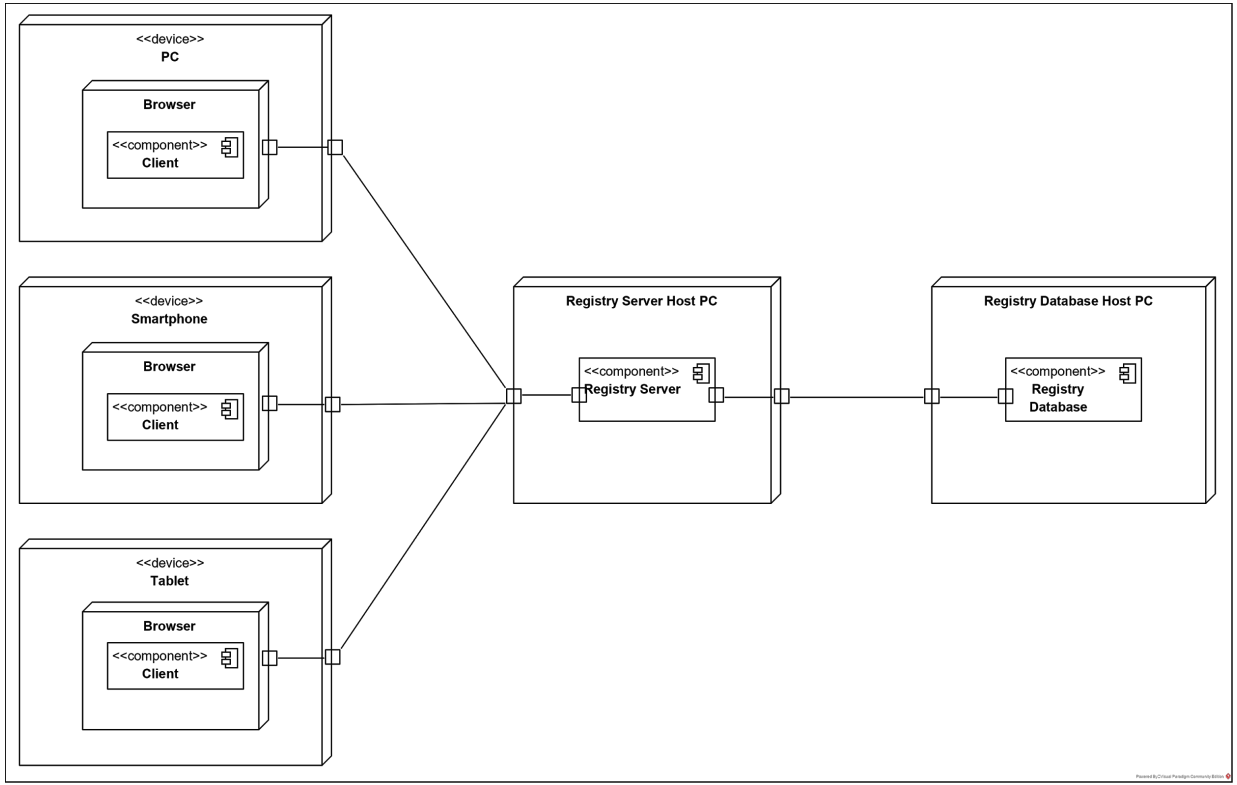
Class Diagram



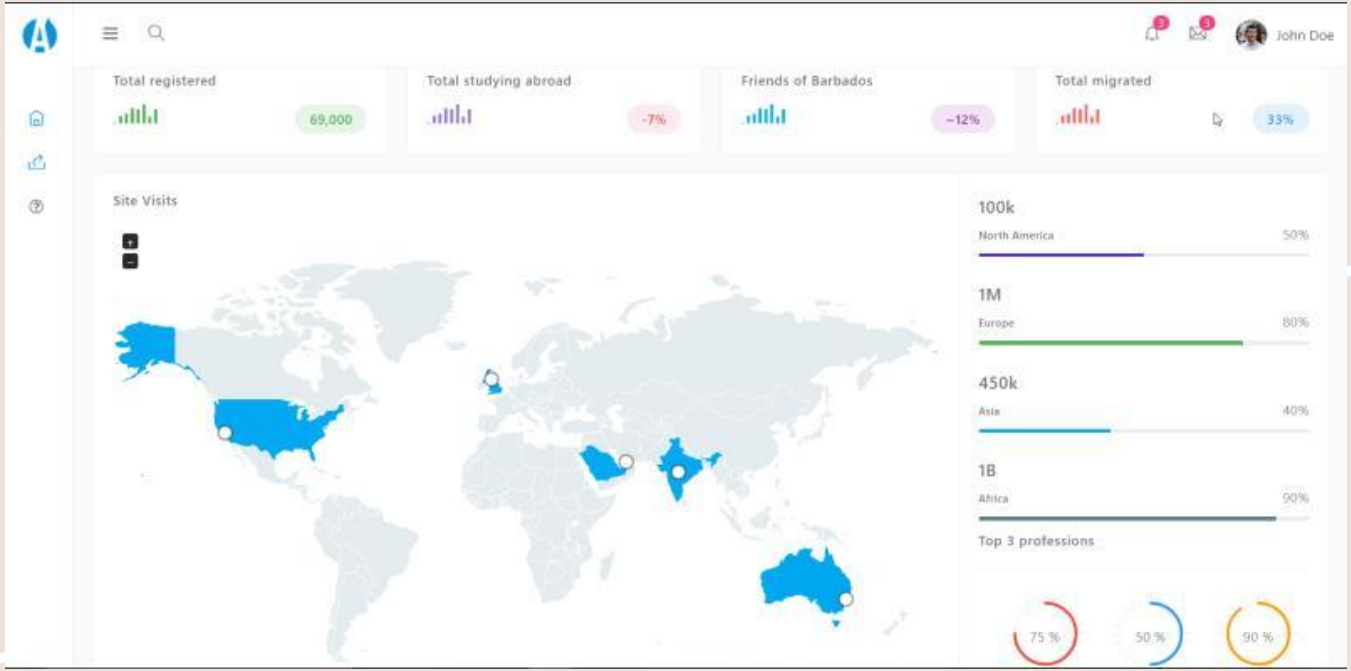
Component Diagram

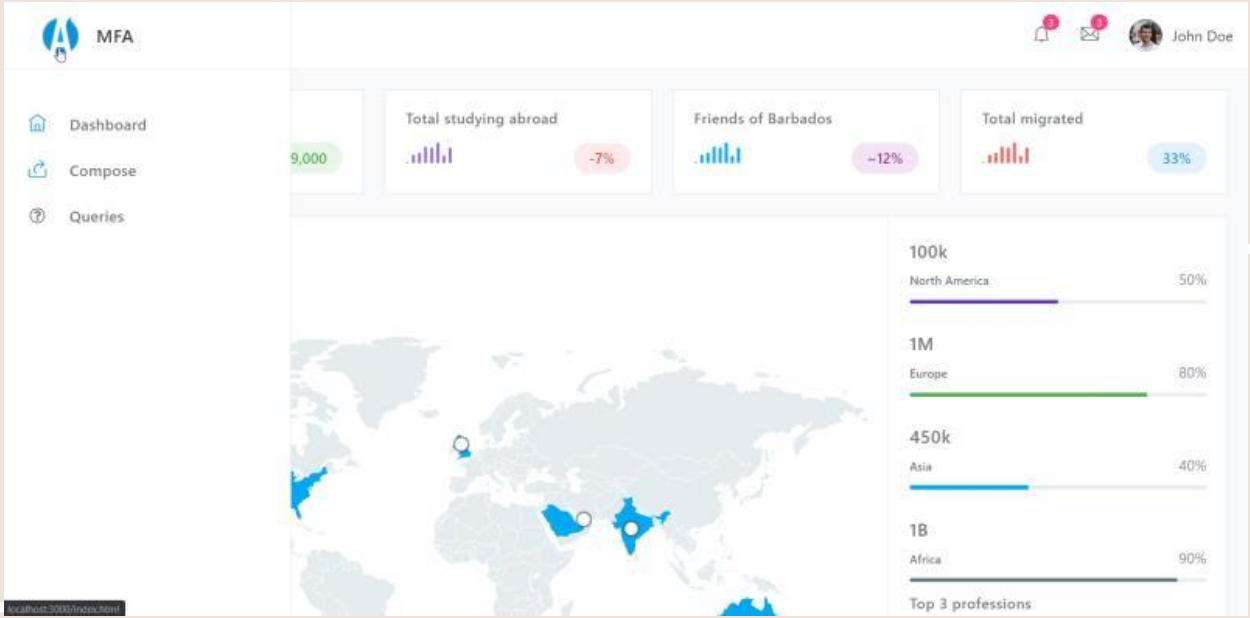


Deployment Diagram



Demonstration


John Doe
Total registered
69,000
Total studying abroad
-7%
Friends of Barbados
-12%
Total migrated
33%
Site Visits
100k
North America
50%
1M
Europe
80%
450k
Asia
40%
1B
Africa
90%
Top 3 professions
75 %
50 %
90 %


MFA
John Doe
Dashboard
Compose
Queries
9,000
Total studying abroad
-7%
Friends of Barbados
-12%
Total migrated
33%
100k
North America
50%
1M
Europe
80%
450k
Asia
40%
1B
Africa
90%
Top 3 professions

Questions?