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| Module Code: PUSL3111 | Module Name: API Software Development | |
| Coursework Title: Sri Lanka Bureau of Foreign Employment (SLBFE) - REST API Web and Mobile Applications | | |
| Deadline Date: Wednesday, 11 May 2022, 11:30 AM | | Member of staff responsible for coursework: Dr. Rasika Ranaweera |
| Programme: BSc (Hons) Software Engineering | | |
| Please note that University Academic Regulations are available under Rules and Regulations on the University website [www.plymouth.ac.uk/studenthandbook](http://www.plymouth.ac.uk/studenthandbook). | | |
| Group work: please list all names of all participants formally associated with this work and state whether the work was undertaken alone or as part of a team. Please note you may be required to identify individual responsibility for component parts.  **Group No - 21**  10707385 - V P N Sulakshika **(Group Leader)**  10707241 - H S Kaushalya  10707417 – H J K I Wijerama  10707129 – K L D Anupama  10707372 - P D S Sigera  10707291 – S S N S Nevins  ***We confirm that we have read and understood the Plymouth University regulations relating to Assessment Offences and that we are aware of the possible penalties for any breach of these regulations. We confirm that this is the independent work of the group.***  Signed on behalf of the group: | | |
| Individual assignment: ***I confirm that I have read and understood the Plymouth University regulations relating to Assessment Offences and that I am aware of the possible penalties for any breach of these regulations. I confirm that this is my own independent work.***  Signed : | | |
| Use of translation software: failure to declare that translation software or a similar writing aid has been used will be treated as an assessment offence.  I \*have used/not used translation software.  If used, please state name of software………………………………………………………………… | | |
| **Overall mark \_\_\_\_\_% Assessors Initials \_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_** | | |

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## Appendix

Sri Lanka Bureau of Foreign Employment (SLBFE) - REST API Web and Mobile Applications

## Introduction

## **API Documentation**

### List of APIs

1. /Auth/GetAdmin

* The SLBFE staff (Admin) can login to the system with details including the UserName, and the Password.

1. /Auth/SignUp/Create

* Citizens and Officers can register themselves with details including a national ID, name, age, address, profession, email, affiliation, password, and qualification.

1. /Auth/SignIn

* Citizens and Officers can login to the system with details including an email, affiliation, and password.

1. /Auth/ReadCitizenInformation

* The Bureau Officers must be able to see information provided by the job seekers.

1. /Auth/CitizenInformationByNIC/Get/{nic}

* Officers should be able to access any citizen’s information by their national id.

1. /Auth/CitizenInformationByQualification/Get/{qualification}

* Company officers should be able to find candidates based on qualifications.

1. /Auth/UpdateCitizenInformation/UpdateQualification/{nic}

* Job seekers should be able to update their qualifications by NIC.

1. /Auth/UploadCitizenDocuments

* Job seekers should be able to upload certificates.

1. /Auth/DeleteCitizen/Delete/{userId}

* The SLBFE staff can deactivate an individual’s account if the citizen is deceased.

1. /Auth/ReadComplaints

* The Bureau Officers should be able to see the content.

1. /Auth/CreateComplaint

* Any citizen can make a complaint.

1. /Auth/UpdateComplaintInformation/Update/{complaintId}

* The Bureau Officers should be able to reply accordingly.

### Screenshots

### Code Screenshots

Admin Sign-In

* The below two screenshots represent the Admin Sign-In.

A screenshot of a computer

Description automatically generated with medium confidence

Text

Description automatically generated

Citizen and Officer Sign-Up

* The below two screenshots represent the Citizen and Officer Sign-Up.

Text

Description automatically generated

Text

Description automatically generated

Citizen and Officer Sign-In

* The below two screenshots represent the Citizen and Officer Sign-In.

Text

Description automatically generated

Text

Description automatically generated

Get List of Citizen Information

* The below two screenshots represent the List of Citizen Information.

Text

Description automatically generated

Text

Description automatically generated

Get Citizen Information By NIC

* The below two screenshots represent the Citizen Information by their NIC.

Text

Description automatically generated

Text

Description automatically generated

Get List of Citizen Information By Qualification

* The below two screenshots represent the List of Citizen Information by their Qualification.

A screenshot of a computer

Description automatically generated with medium confidence

Text

Description automatically generated

Update Qualification By NIC

* The below two screenshots represent the Update Citizen Qualification by their NIC.

Text

Description automatically generated

Text

Description automatically generated

Upload Citizen Documents

* The below screenshot represent the Upload Citizen Documents.

Text

Description automatically generated

Delete Citizen Account by UserId

* The below two screenshots represent the Delete Citizen Account by UserId.

A screenshot of a computer

Description automatically generated

Text

Description automatically generated

Read Complaints

* The below two screenshots represent the List of Citizen’s Complaints.

Text

Description automatically generated

Text

Description automatically generated

Create a Complaint

* The below two screenshots represent the create a Complaint.

Text

Description automatically generated

Text

Description automatically generated

Reply for a Complaint

* The below two screenshots represent the Reply to the Citizen’s Complaints.

Text

Description automatically generated

Text

Description automatically generated

### Run-Time Screenshots

* The JSON output is displayed in the Swagger and the XML output is displayed with Postman.
* The integrated application is given to the users in which all the APIs are able to be controlled from the frontend.

#### Web APPLICATION

Citizen & Officer => Sign-Up Page

Graphical user interface, application

Description automatically generated

Figure 1 - Run-Time: Citizen & Officer Sign-Up Page

Graphical user interface, application

Description automatically generated

Figure 2 - Citizen & Officer: Sign-Up with JSON result

Graphical user interface, text, application, email

Description automatically generated

Figure 3 - Citizen & Officer: Sign-Up with XML result

Citizen & Officer => Sign-In Page

Graphical user interface, application

Description automatically generated

Figure 4 - Run-Time: Citizen & Officer Sign-In Page

Graphical user interface, application

Description automatically generated

Figure 5 - Citizen & Officer: Sign-In with JSON result

Graphical user interface, text, application, email

Description automatically generated

Figure 6 - Citizen & Officer: Sign-In with XML result

Admin Sign-In Page

Graphical user interface

Description automatically generated

Figure 7 - Run-Time: Admin Sign-In Page

Graphical user interface, application

Description automatically generated

Figure 8 - Admin Sign-In with JSON result

Graphical user interface, application

Description automatically generated

Figure 9 - Admin Sign-In with XML result

Admin Home Page

Graphical user interface

Description automatically generated with medium confidence

Figure 16 - Admin Home Page

Graphical user interface, text, application

Description automatically generated

Figure 17 - List of Citizen Information with JSON result

Graphical user interface, text, application

Description automatically generated

Figure 18 - List of Citizen Information with XML result

Graphical user interface, application

Description automatically generated

Figure 10 - Get Citizen Information by NIC with JSON result

Graphical user interface, text, application, email

Description automatically generated

Figure 11 - Get Citizen Information by NIC with XML result

Graphical user interface, application

Description automatically generated

Figure 12 - Get Citizen Information by Qualification with JSON result

Graphical user interface, text, application, email

Description automatically generated

Figure 13 - Get Citizen Information by Qualification with XML result

Graphical user interface, application

Description automatically generated

Figure 14 - Update Citizen Qualification with JSON result

Graphical user interface, text, application, Teams

Description automatically generated

Figure 15 - Update Citizen Qualification with XML result

## **Tools and Technologies**

### Platform - Web Platform

* When developing the backend of this application we chose ASP .Net web API since this is the backend technology that we are most familiar with and given the limited time frame this let us develop the application faster and easier while resolving the bugs and errors much faster than if we used some other technology.
* The APIs related to the application are deployed and run-on Swagger. The APIs have been tested on Swagger before releasing to the public.

Graphical user interface, text, application

Description automatically generated

* For the frontend development of the web application, we utilized ReactJS since it is a versatile framework that enable us to develop responsive interfaces.

### Platform – Mobile Platform

Discuss why you have selected your platform and how you have tested your APIs before releasing to public. & Database

## **Individual Contribution**

### 10707385 - V P N Sulakshika (Group Leader)

I was responsible for implementing the complete backend of the application with all the API configurations. This consists of the ‘get admin’ which is capable of retrieving the admin profile when logging into the system, ‘create’ is capable of creating the citizen and officer profiles, ‘Sign-In is responsible for retrieving the citizen and officer profiles when logging into the system, ‘read citizen information’ is an API which enables the admin and officers to read the details of the citizens, ’Citizen Information by NIC’ capable of retrieving the details of particular citizens by providing the NIC number of that citizen, ‘Citizen Information by Qualification’ enables the officers to read the details of the citizens with regards to their qualifications. The officers are able to find candidates based on the qualifications with this API. ‘Update Qualification’ enables the citizens to update their qualification after the creation of their profile. ‘Upload Citizen Documents’ enables the citizens to upload their documents to the systems, ‘Delete Citizen’ can be used by the admin to disable the accounts of the citizens, ‘Create Complaint’ enables the citizens to generate and submit complaints, ‘Read Complaints’ enables the officers and citizens to view the complaints posted by the citizens. ‘Update Complaint Information’ enables the offers to reply to the complaints posted by the citizens.

As for the frontend development, I was responsible for developing the citizen Sign-In page, officer Sign-In page, citizen signup page, officer signup page for the roles of the citizen and the officers. I was also responsible for developing the Sign-In page for the admin, the list of citizens the admin could view, and the citizen delete function for the admin.

Graphical user interface, application

Description automatically generated Graphical user interface, application

Description automatically generated Graphical user interface

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### 10707241 - H S Kaushalya

### 10707417 – H J K I Wijerama

### 10707129 – K L D Anupama

### 10707372 - P D S Sigera

### 10707291 – S S N S Nevins

## Certificates

### 10707385 - V P N Sulakshika

Text

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### 10707241 - H S Kaushalya

### 10707417 – H J K I Wijerama

### 10707129 – K L D Anupama

### 10707372 - P D S Sigera

### 10707291 – S S N S Nevins

## Risks and Outcomes

## Summary

## Conclusion

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