**Tribe F (Devnetics)**

**Solution Document (Github Aggregator)**

Requirement:

* API in AWS Environment
* User Authentication using AWS secrets manager
* Data to be written on the RD SQL Server
* Version control

Approach:

* A Python Project to send server requests and fetch data from an external API. Will be done using external modules (requests, pyGithub)
* After all the data fetched from the API, we trim the data as per the client’s needs and then display it using an inbuilt Python GUI module named Tkinter
* Once displayed the log will be pushed into a Relational Database ( SQL)

### Python and Tkinter

The tech stack that will be used for creating the product is Python language and the Tkinter GUI library.

Tkinter is a Python binding to the Tk GUI toolkit. It is the standard Python interface to the Tk GUI toolkit and is Python's standard GUI. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

#### Advantages of Tkinter

* Layered approach

The layered approach used in designing Tkinter gives Tkinter all of the advantages of the TK library.

* Accessibility

Learning Tkinter is very intuitive, and therefore quick and painless. The Tkinter implementation hides the detailed and complicated calls in simple, intuitive methods. This is a continuation of the Python way of thinking since the language excels at quickly building prototypes.

#### Drawbacks of Tkinter

* The multi-layered approach taken in designing Tkinter can have some disadvantages as far as execution speed is concerned. While this could constitute a problem with older, slower machines, most modern computers are fast enough so as to cope with the extra processing in a reasonable time. When speed is critical, proper care must be taken so as to write code that is as efficient as possible.

Database Operations :

The Database Operator maintains the database(s) by processing related records, providing information to others as needed and managing data integrity. The database is a relational database that contains information regarding students enrolled in any of the offered programs, agent and school contacts, financial transactions and required District and/or Ministry of Education documentation.

Importance of a Database Operator:

1. Maintains the database(s) by processing, tracking and verifying confidential information and documentation including all information on existing and potential students, student placements, agents, host families/parents/guardians, withdrawals and collected fees.
2. Ensures data integrity through accurate data entry, establishing data management procedures, regularly backing up data, maintaining security access, reconciling information through the use of reports, researching anomalies and making adjustments as necessary

Deployment

Deployment is the mechanism through which applications, modules, updates, and patches are delivered from developers to users. The methods used by developers to build, test and deploy new code will impact how fast a product can respond to changes in customer preferences or requirements and the quality of each change. Software deployment is one of the most important aspects of the software development process.

* How AWS will be used for authentication and deployment ?

Stage 1 : Once the code is developed and well tested, we create a key pair which will be used to access the virtual machine by the client. Next using the code deploy console we create and launch a virtual machine for portability

Stage 2 : Next we name our virtual machine, and review the services required for it.

Stage 3 : We create a user group for the organization and name the users each with a different user id for better security

Stage 4 : We create a service role for the admin and finally deploy the app.

* Overview Diagram

