DEVOPS TECHNICAL TEST

This test is for the technical stage of the interview process for DevOps Engineers at Opayo.

Expected time to complete and submission details -

Time to complete: ETA 4-8 hours
Submit the results via a password protected zip file to applications@opayo.io.

If you have any further questions, please get in touch.

SCENARIO

Here at Opayo we are always looking at ways to improve our core automation tools and reporting dashboard's. We love to test and simulate as much as we can.

Given a Relational Database Schema or NoSQL collection consisting of -

Table Name - transaction
Id *string* – primary key (please think about the randomness of this)
Date *int* – timestamp of payment in unix ms
Currency *string* – the currency type used i.e. £
Amount *float* - amount of the transaction i.e. 133.7
Vendor *string* – the vendor name for the transaction
CardType *string/ENUM* – the payment type i.e. Visa, Mastercard
CardNumber *string* – the card number of the requestor
Address *string* – the address of the requestor
CountryOrigin *string* – the country of transaction origin in CountryCode ie UK, US

Requirement 1

Write a REST service with the Python framework of your choice connecting to a mysql/mongodb database. We should be able to query this service to obtain the following information -

1. Transactions made in the last *n* days, where *n* is provided by the requestor.
2. The number of transactions made in the last *n* days where CardType is *xyz*, where *n* and *xyz* are provided by the requestor.
3. A list of all the transactions made in the last *n* days where the CountryOrigin is *xyz*, where *n* and *xyz* are provided by the requestor.
4. A list of all transactions made in the last *n* days where the Amount is between *abc* and *xyz*, where *n*, *abc* and *xyz* are provided by the requestor.

Requirement 2

Author a script or startup code that will randomly generate and populate ~20000 transactions into a mysql/mongodb database. This script or startup code should use a yaml configuration file to point to the mysql/mongodb database hostip:port and provide auth creds to the database. The script should take a command line argument of how many transactions it should generate.

Requirement 3

Consider the REST service you have constructed in requirement 1 being the foundation of a larger project that needs to be deployed into AWS; Provide details of how you would deploy this into multiple environments (Dev, QA, Pre-production and Production) and how this would be updated and maintained. What else should be considered as part of the deployment into AWS?

Please consider the following for all requirements -

- Configuration of the API service and database population script
- Where possible write tests to validate your code.
- Please state any assumptions you make with added comments along with design decisions you make.
- The code should contain a readme file, which explains how to run the service and the generator.