

PegB Python Developer

Technical Assessment Test

1.0 Problem Statement

Pinchi Inc is a leading supplier of groceries. As a result of the COVID-19 pandemic, the company has decided to venture into e-commerce in order to effectively serve its customers. In order to realize this dream, the company has come up with below business requirements that will be used to implement a robust and scalable system.

2.0 Business requirements

Users

The system will be by two types of users - internal staff and external customers. Internal staff will be assigned to departments where a user belongs to only one department.

Onboarding

Customers will be expected to do self-registration using their email address. Upon receipt of a registration request, a verification email will be sent to the provided email address for the customer to complete the registration process.

Products

Products will be maintained (create, update and delete) based on product categories e.g frozen foods, fresh produce. Each product category belongs to a specific (one) department. A product should have among other attributes price and name. Staff will be allowed to update, add or remove products that only belong to their department.

Customer categorization

Customers will be categorized based on the number (configurable) of successful orders made (see below)

Bronze: 0-20

Silver: 21-49

Gold: 50 and above

Discounts

The company will periodically offer discounts on selected products. The discounts will be maintained as a percentage value based on the combination of customer category and product category.

Shopping cart

Any customer (registered or unregistered) should be able to view products, add products to the shopping cart and remove products from the shopping cart.

Order

The system should allow only registered customers to place an order (checkout) based on the product items inside the shopping cart. It is expected that the payment order will take into consideration discounts if any. A customer should also be able to fetch their order history.

3.0 Tasks

Day 1

Using the widely accepted design patterns, implement Backend RESTful APIs using python to be consumed by the front-end clients such as Mobile-app and Web-app based on the provided business requirements. You may use any lightweight Database Management system of your choice. The backend should also include logic that will automatically move customers from one category to another category depending on the number of orders placed.

Day 2

Implement a simple client (web based or desktop application) that can be used to consume APIs developed in day 1 above. The web client can be used to Login, Add products, configure discounts

4.0 Implementation notes

Please take into consideration the following requirements for each of the tasks;

- Include software versioning control (git)
- Provide proper documentation for the development task - this is to ensure better collaboration and code maintenance
- Provide deployment instructions and release notes which can be used by the devops team to deploy the project.
- Dockerize the application in preparation for production deployment.
- Optionally provide a demo video showcasing a step-by-step verbal explanation of the work done in each of the tasks.

