**Services Used**

1. **Discovery Service (Default Port:8761)**

This service is used for service discovery. Netflix Eureka is used for service discovery. This is used to discover services.

1. **Login Service (Default Port:8040)**

This service is used to perform authentication. The authentication is set on api gateway so we do not have to do authentication for each service separately. Login service contains the user data to perform authentication and give authorization.

1. **Admin Service (Default Port:8041)**

This service is used to perform admin operations. This service can only be accessed by the user having role as ADMIN. Admin can add/delete data from inventory.

The add operation is done using RabbitMQ because adding item in inventory can be asynchronous as if the data is added after some time then also it will not impact anything.

The delete operation is done using RestTemplate as deleting item from inventory should be synchronous as user should get information of item out of stock as soon as we delete any item so that he does not add that item in cart or order the same.

1. **Inventory Service (Default Port:8044)**

This service is used to store Item data. It has its separate database/file and any service which requires item data or want to modify item data the send a request to inventory service.

1. **Customer Service (Default Port:8042)**

This service is used to perform customer operations. This service can only be accessed by user having role as CUSTOMER. Customer can search for an item, add/remove an item from the cart, checkout/do payment/create order.

All the operations of customer are done using RestTemplate as all customer operations should be synchronous as he should get response of each operations immediately.

1. **Cart Service (Default Port:8045)**

This service is used to perform cart operations. It is used to add/remove item to/from cart, do checkout.

All the operations in Cart Service are done using RestTemplate as all the cart operations are needs to be synchronous.

Cart Service has its own database/file in which item is added/removed.

If user adds same item multiple time then quantity of item is increased.

The item status is set as “In Cart” in this service.

1. **Order Service (Default Port:8046)**

This service is used to make payment and create order for a customer.

All operations in this service are done using RestTemplate as all the cart operations are needs to be synchronous.

Order Service has its own database/file in which it stores ordered item for a customer.

The item status is set as “Ordered” in this service and can be changed to delivered or undelivered as action performed by delivery person.

1. **Delivery Service (Default Port:8047)**

This service is used to perform operations by delivery operations. This service can only be accessed by user having role as DELIVERY. Delivery person can set status as delivered or undelivered and view order of a customer.

Setting status as delivered is done using RabbitMQ as this action can be asynchronous. Customer does not require to get delivered status as soon as item is delivered.

Setting status as undelivered is done using RestTemplate as Customer needs to get the response synchronously as he may be waiting for the order to be reached and due to some reason it cannot be delivered so he can ask for customer support or reorder. If it is asynchronous, it also decreases customer satisfaction.

Viewing the order details of a customer is done using RestTemplate as it needs to be synchronous.

1. **API-Gateway Service (Default Port:9999)**

This service is used as API-Gateway. It is used to perform authentication at one place, loading services using one url, etc.

1. **Common Service**

This service is used to store common entities used in multiple entities for mapping.

**Flow Diagram of Services**

A close up of a map

Description automatically generated