Project Title: Developing Integration Pattern using Kafka(Publisher-Subscriber)

Organizations have to monitor stock level of products continuously ,and immediately apply for reordering of stock in case of stock depletion in inventory. This is more so important in case of organizations that are in medical field and deal with life saving drugs as delay in availability of critical drugs and medicines can endanger life. Hence a system is needed where reordering of depleting stock of medicines can be automated through a messaging system .For example ,if stock for a particular life saving drug like Remdesivir goes down in pandemic ,a reordering process should kick in automatically

Problem Description

1.A microservice for entering details of medicine stock and viewing details of medicine stock should be available

2.Each medicine should be allotted a minimum stock maintenance quantity

3.If a medicine goes below minimum stock quantity a reorder event should be triggered and entry for reordering should be made automatically

Expectation

Microservices - also known as the microservice architecture - is an architectural style that structures an application as a collection of services that are Highly maintainable and testable ,Loosely coupled ,Independently deployable and Organized around business capabilities These microservices need to be integrated together using an integration pattern. There are different types of integration pattern like Broadcast or Aggregation Pattern

A System should be developed with Kafka in between to manage messaging between different microservices

The said system should monitor the existing quantities of medicine periodically and trigger a reordering event for medicine for which quantity has gone below minimum level

Solution

User Stories

1.An authentication module has to be created for User and Administrator separately

2.Administrator should be able to make entries for medicines and minimum quantity to be maintained should be taken for each medicine

3.A microservice should be created from which information regarding medicine stocks can be retrieved

4.A module should be created that scans through records from microservices and gets details of medicines whose stock is below minimum quantity

5.A module should be created to trigger an event to send message to reorder for medicines that are below minimum stock. An entry should be made for reordering in database

6.Client should receive notification of reordering made

7.Entry for reordering should be done using a microservice on client side

8.Administrator should receive notification of complete process

9.Administrator should be allowed to cancel any reordering

10.A module should be created to monitor reordering event triggered for different modules

11.A report has to be generated for medicines that has been reordered

12 A microservice should be created to check and display if reordered medicine has been received

13.A reorder successful message should be received by Administrator

14.User should be able to see the list of medicines through a microservice

15.He should be allowed to select and order a medicine. If the said medicine is low in stock a reorder event should be triggered

16.User should get notification of reordering of medicine ,and request to wait until stock is received

17.User should get a notification that his medicine is now available

18.User should be allowed to create a list of critical medicine on his side ,and allow it to be monitored. If the stock for medicine goes down ,a reorder event can be triggered

19 A payment system can be provided to user to make payment through card or cash

20 A microservice should be created that can display list of hospitals and stores that can critical medicines and a request can be sent to these hospitals and stores for medicine in case of emergency when critical drugs are not available