Project Development Phase
Works Done on Each Sprints

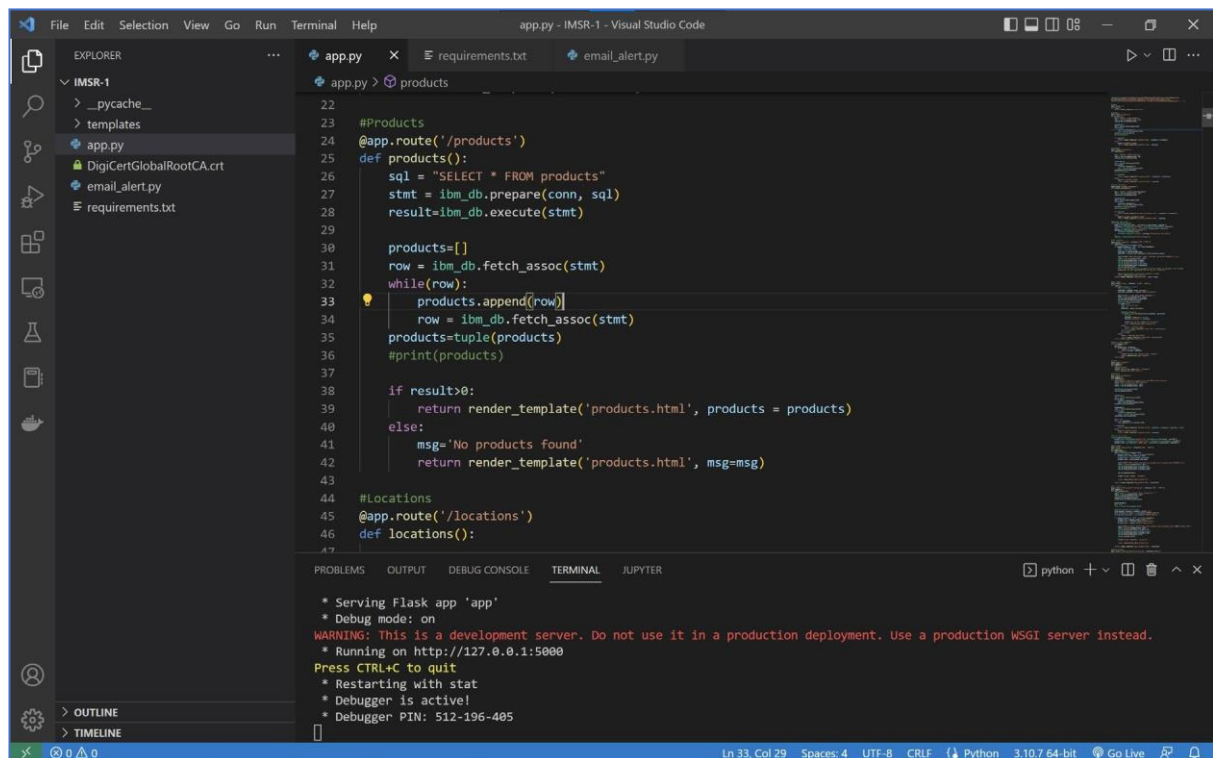| Date	14.11.2022
Team ID	PNT2022TMID01394
Project Name	Inventory Management System for Retailers

Introduction:

1. Sprint 1 – Backend
2. Sprint 2 – Frontend
3. Sprint 3 – IBM Cloud Integration + Integration of SendGrid
4. Sprint 4 – Deploying the application using Docker and Kubernetes

Sprint 1 – Backend:

All the routes to each page and APIs are created.

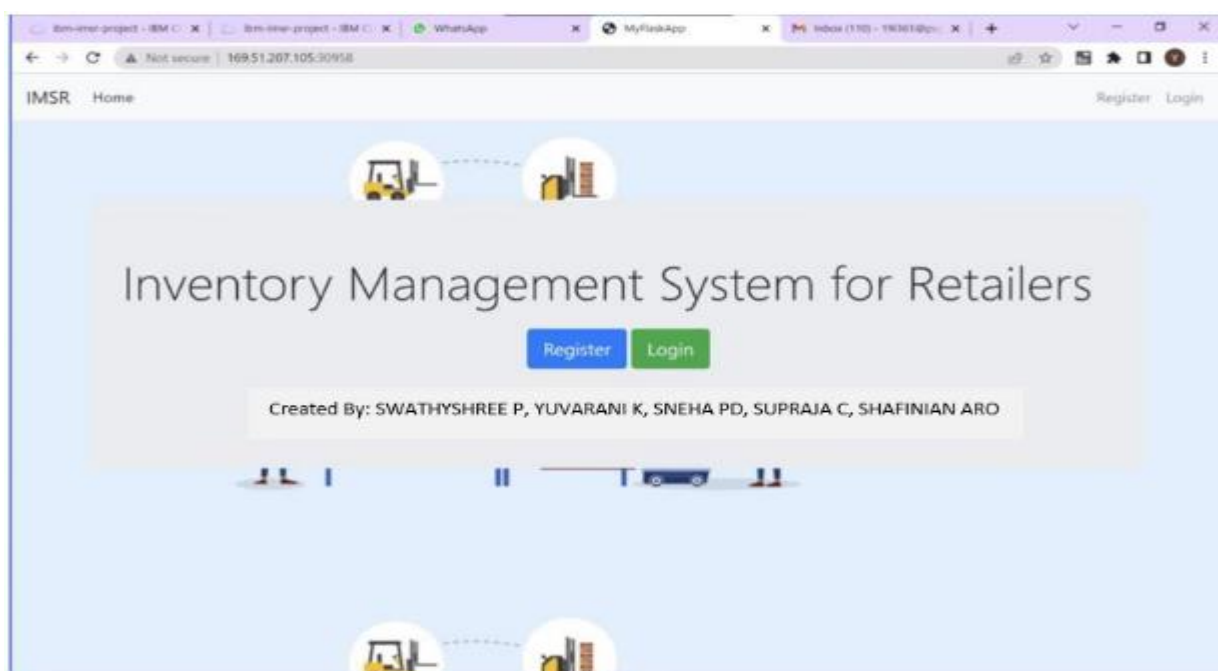Example: (For Products page)

Sprint 2 – Frontend:

The frontend is written using HTML, CSS (using Bootstrap) and JavaScript for all the pages to which the routes created in Sprint 1.

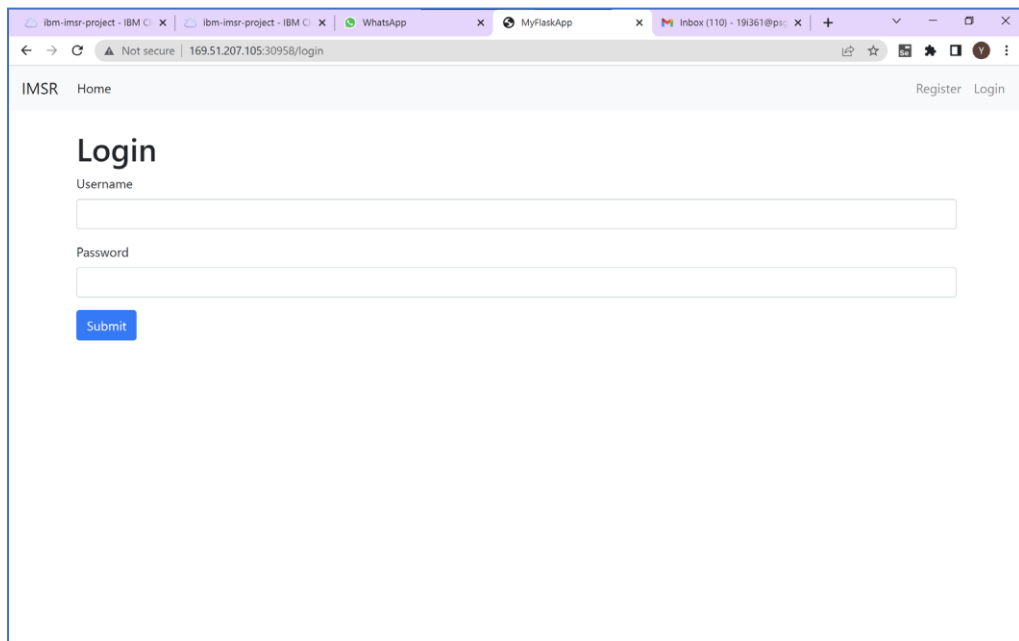For Example: (The Hierarchy of different pages and the code for login page)
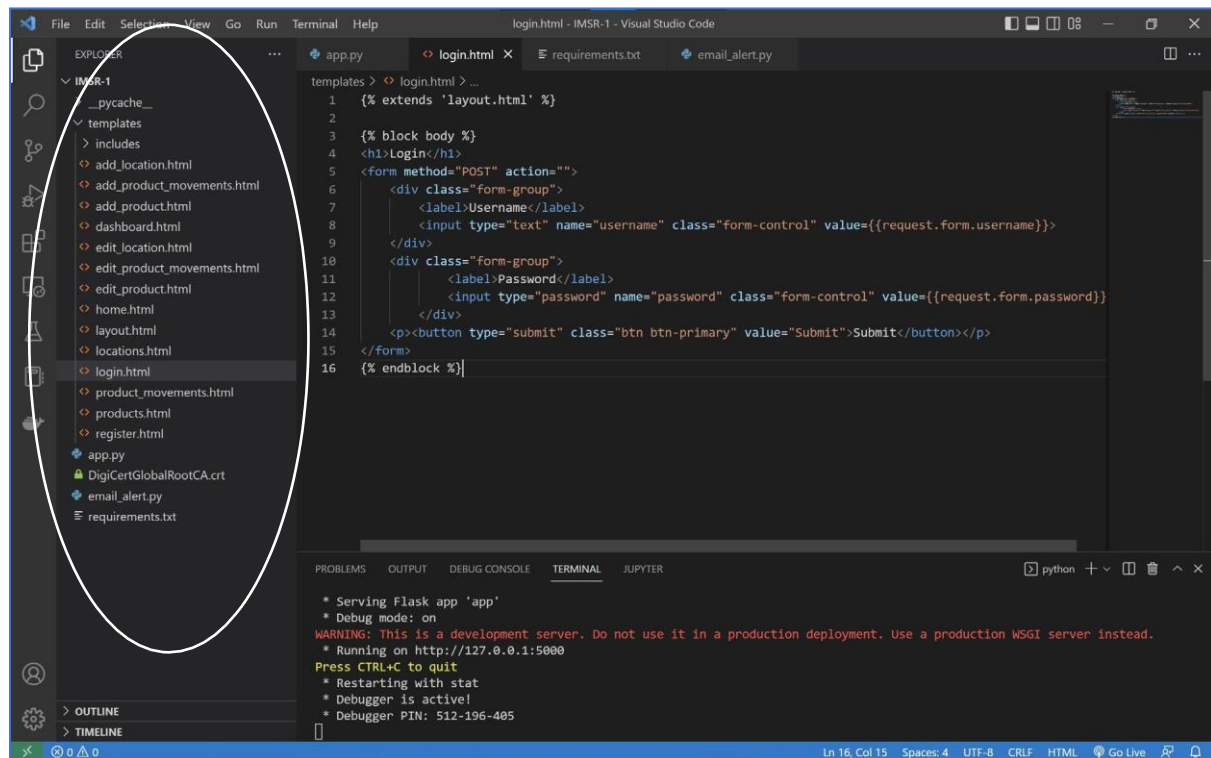
Sample FrontEnd Pages:

Home Page:

Login Page:

Register Page:

Products Page:
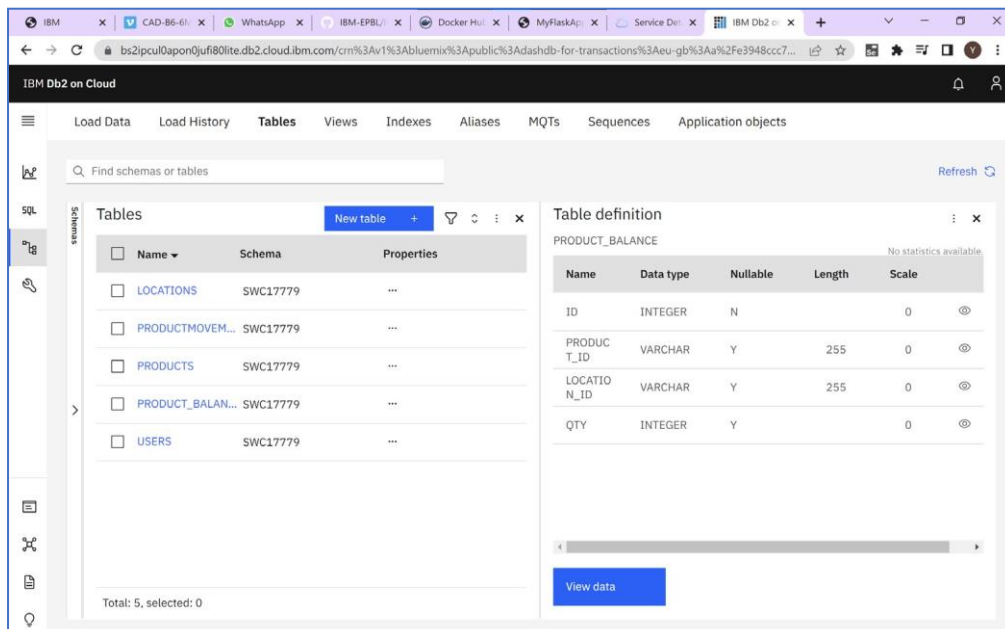

Product Movements Page:

Sprint 3 - IBM Cloud Integration + Integration of SendGrid:
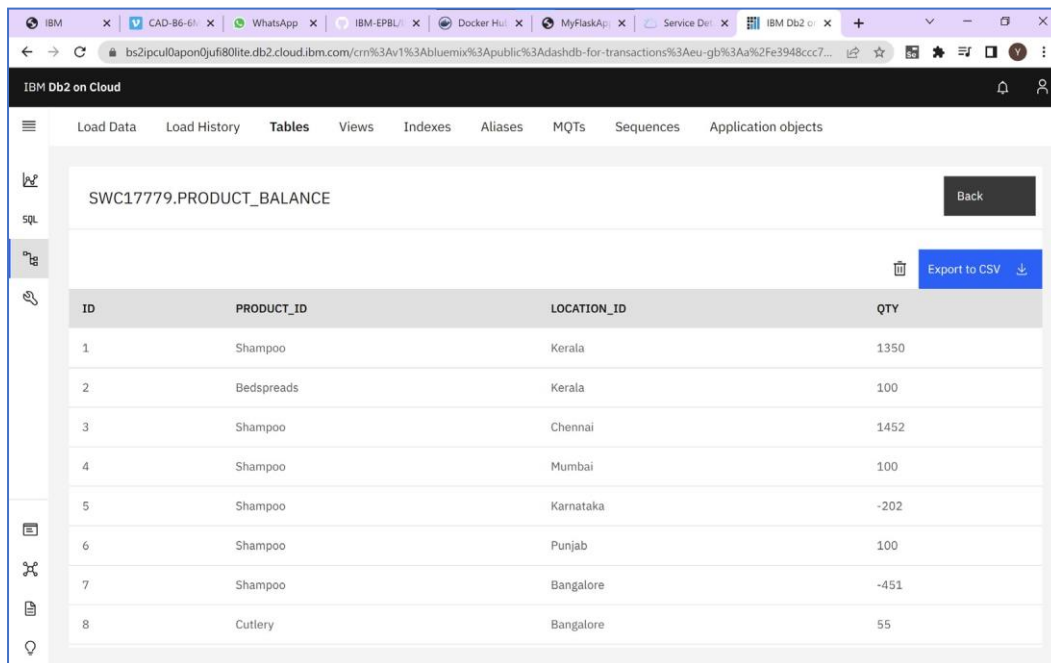
IBM Cloud Integration:

5 tables created for our project:
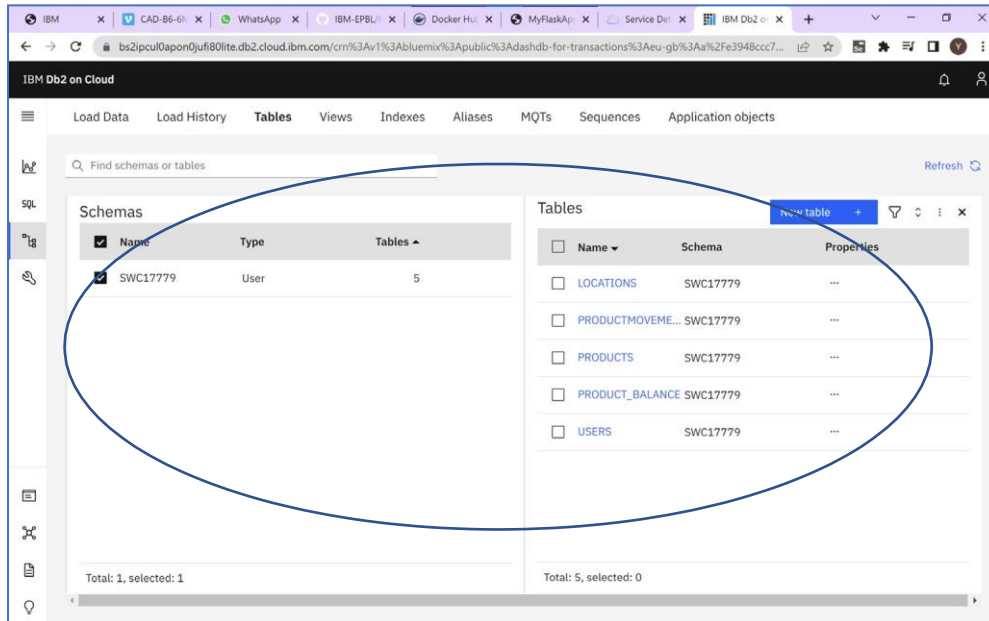
Schema of the particular table (For Example: Product_Balance)

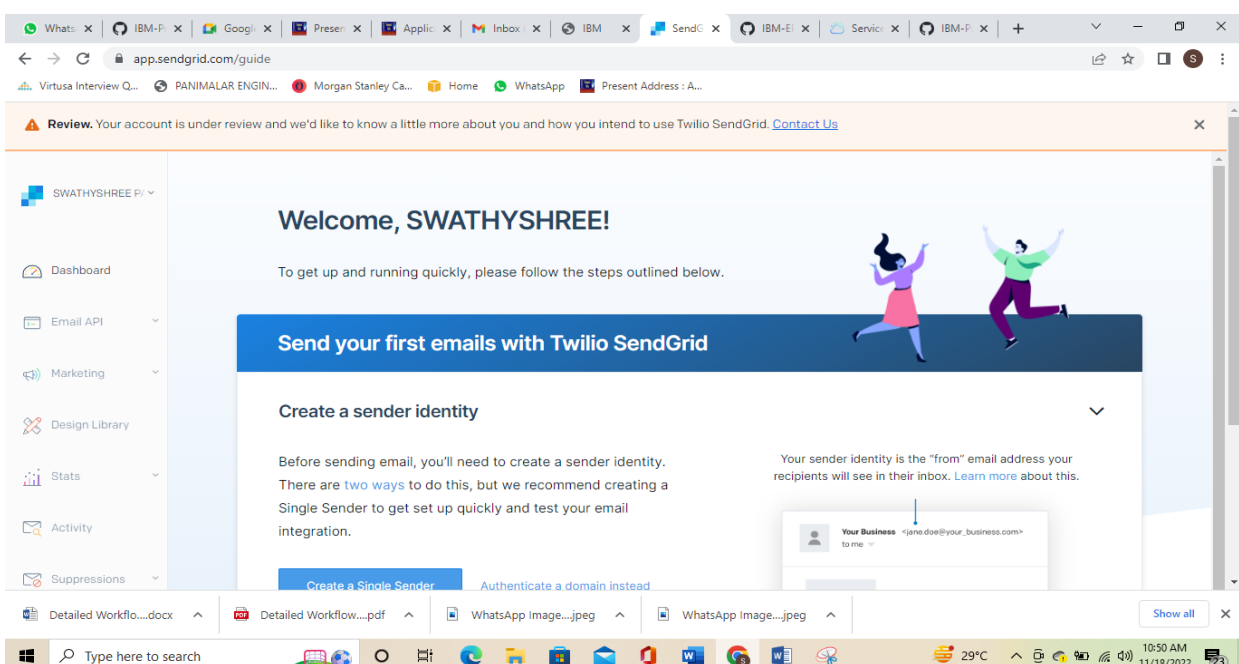Data of a particular table (For Example: Product_Balance)

Code for Connection of IBM Database,

```
conn=ibm_db.connect("DATABASE=bludb;HOSTNAME=55fbc997-9266-4331-afd3-
888b05e734c0.bs2io90l08kqb1od8lcg.databases.appdomain.cloud;PORT=;SECURITY=SSL
;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=;PWD=;",'','')
```

Note: DigiCertGlobalRootCA.crt should be downloaded and configured within the project folder.

SendGrid Integration:

Creation of SendGrid account:

Code for email alert:

Email Received on Shortage of materials at particular warehouse or Main Inventory:
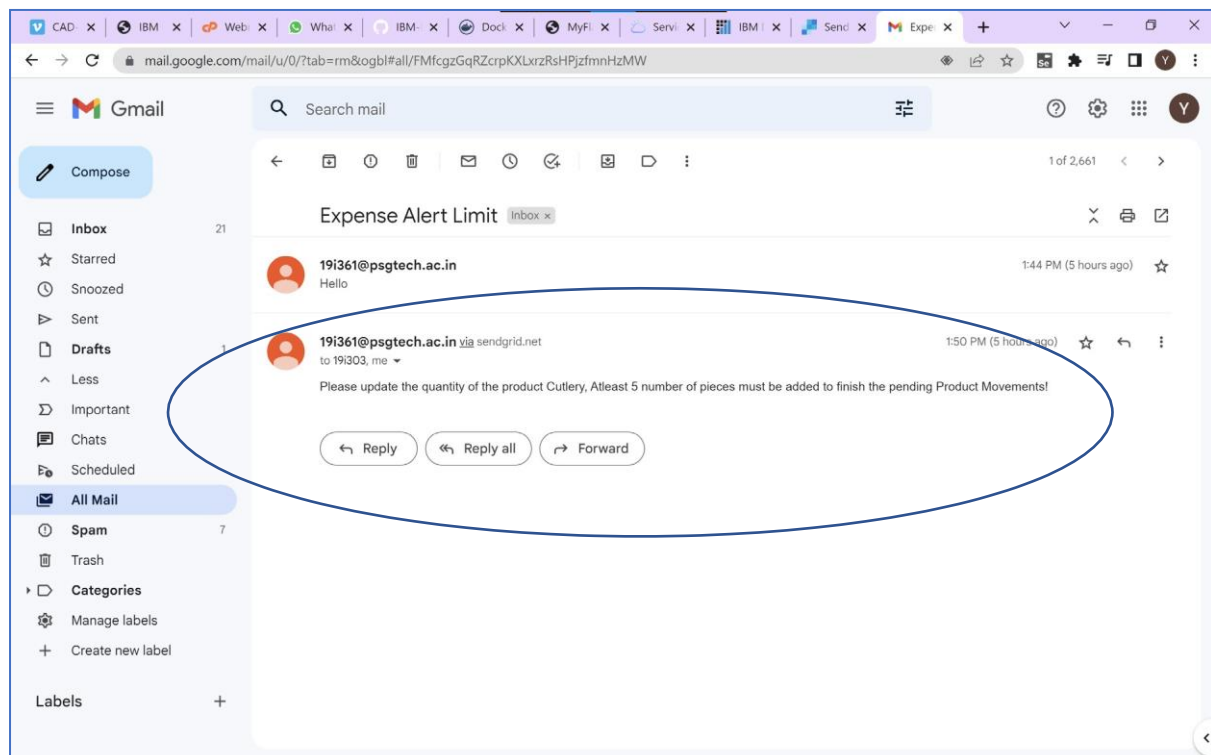
Sprint 4 (Deploying the application using Docker and Kubernetes):

Note: Make sure to create a Dockerfile in the project folder.

Login into DockerHub in Project Folder using command prompt. This connects local docker desktop to cloud docker hub.

Building an image for our project,

Create a valid Deployment.yaml file,

```
PS C:\Users\yaswa\Downloads\IBM\IMSR-1> kubectl apply -f deployment.yaml
deployment.apps/ibmimsr created
PS C:\Users\yaswa\Downloads\IBM\IMSR-1>
```
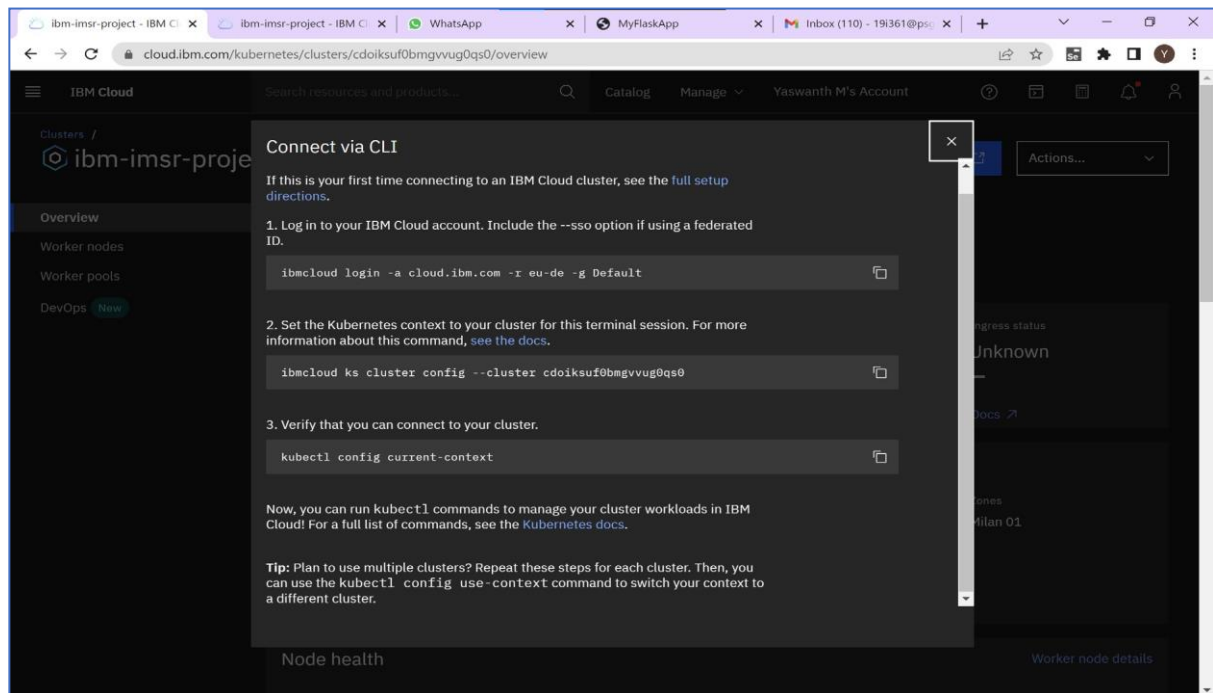
Create a namespace in IBM Container registry:
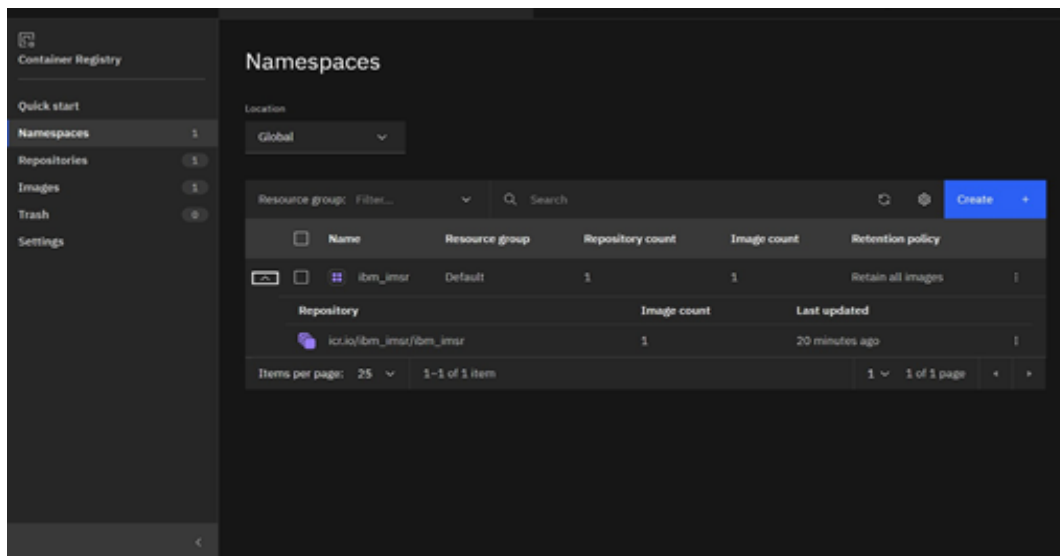
Pushing the project into IBM container Registry:

Note: Create a Kubernetes Cluster in IBM Cloud and wait for the work node to get fully deployed.

Then, Login into Kubernetes Cluster using the following commands,

Expose your application using the following command and check for the port number using the next command.

Then, Check for the public IP address in your IBM Kubernetes Cluster under Worker Node:

Thus we have the Public IP address and the Nodeport.

Now just type in this format - <Public_IP>:<NodePort>

For our Inventory management system application it is, **169.51.207.105:30958**

Type this in the browser and click enter to access the deployed application:
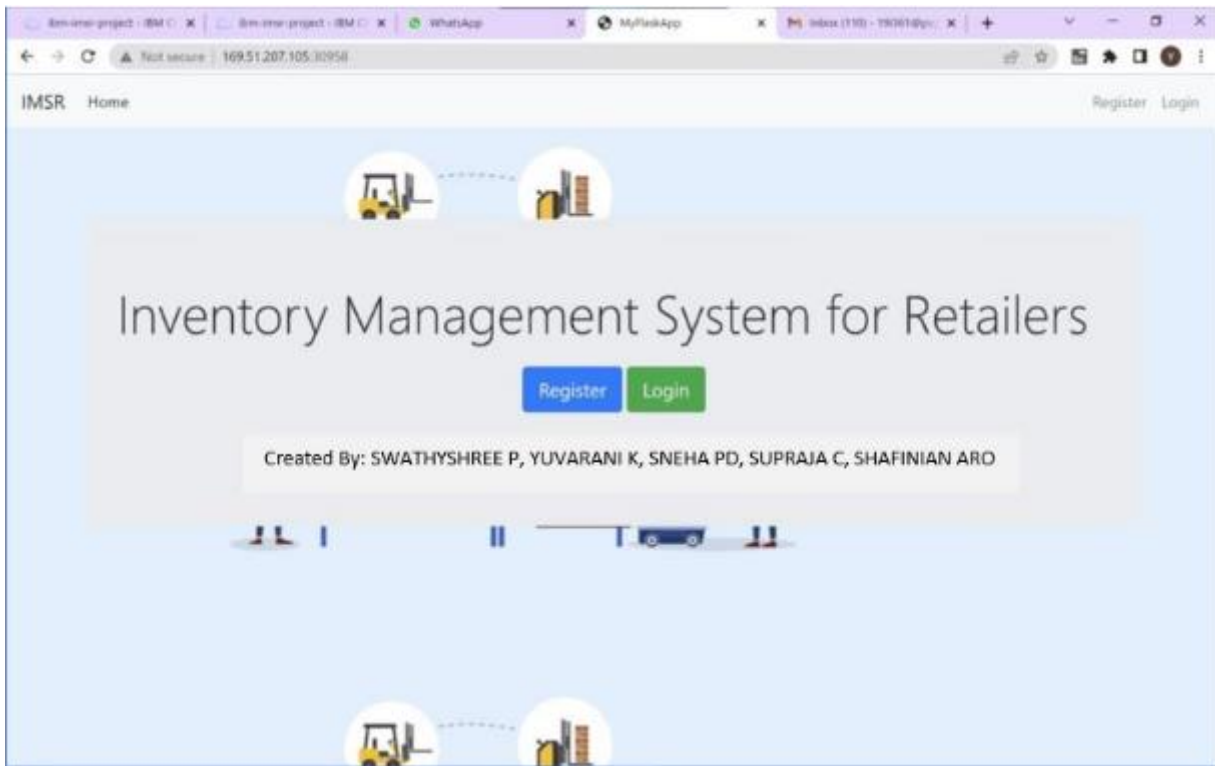
Result:

Thus In this way We developed a "Inventory management System for Retailers" using Python, Sendgrid and IBM Cloud Services (IBM DB2, IBM Container registry, IBM Kubernetes).

For queries,

Contact – 19i361@psgtech.ac.in or swathyshree2002@gmail.com or 19i303@psgtech.ac.in

Thank You!