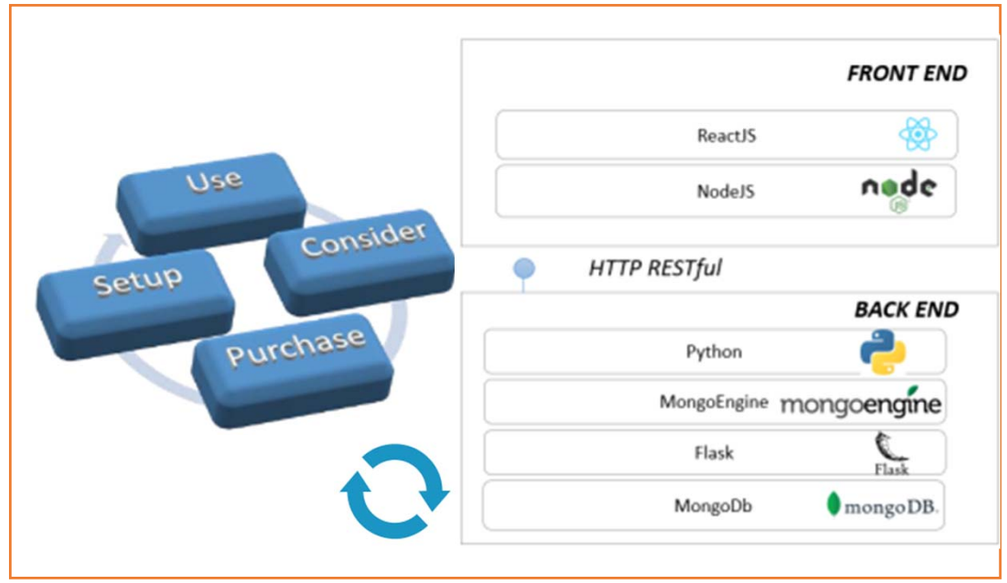
Retail Store Online| Demonstrator

Presentation



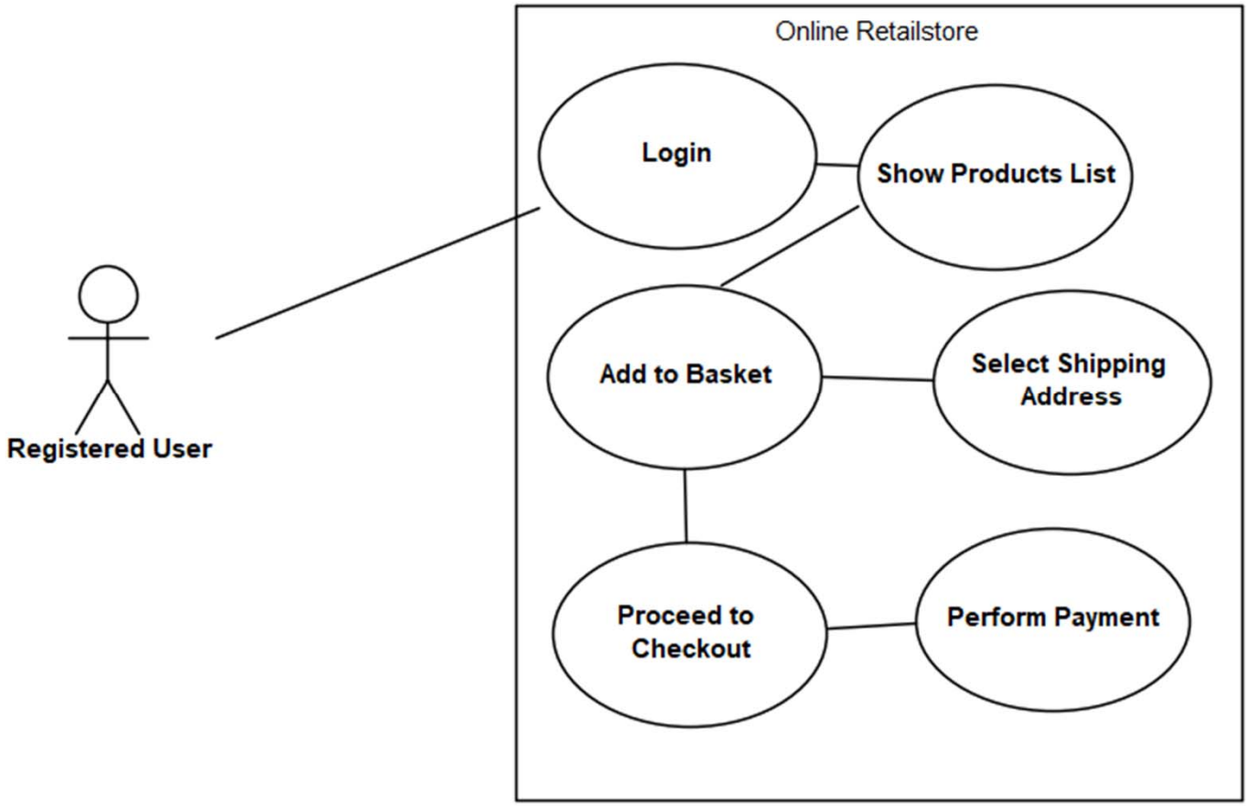
Using MongDb (Document Database)

Agenda

Overview| Architecture| Getting Started -API | ReactJS | Summary

Source: All Icons courtesy: https://thenounproject.com/

Overview| Use case/Context



First set of Features

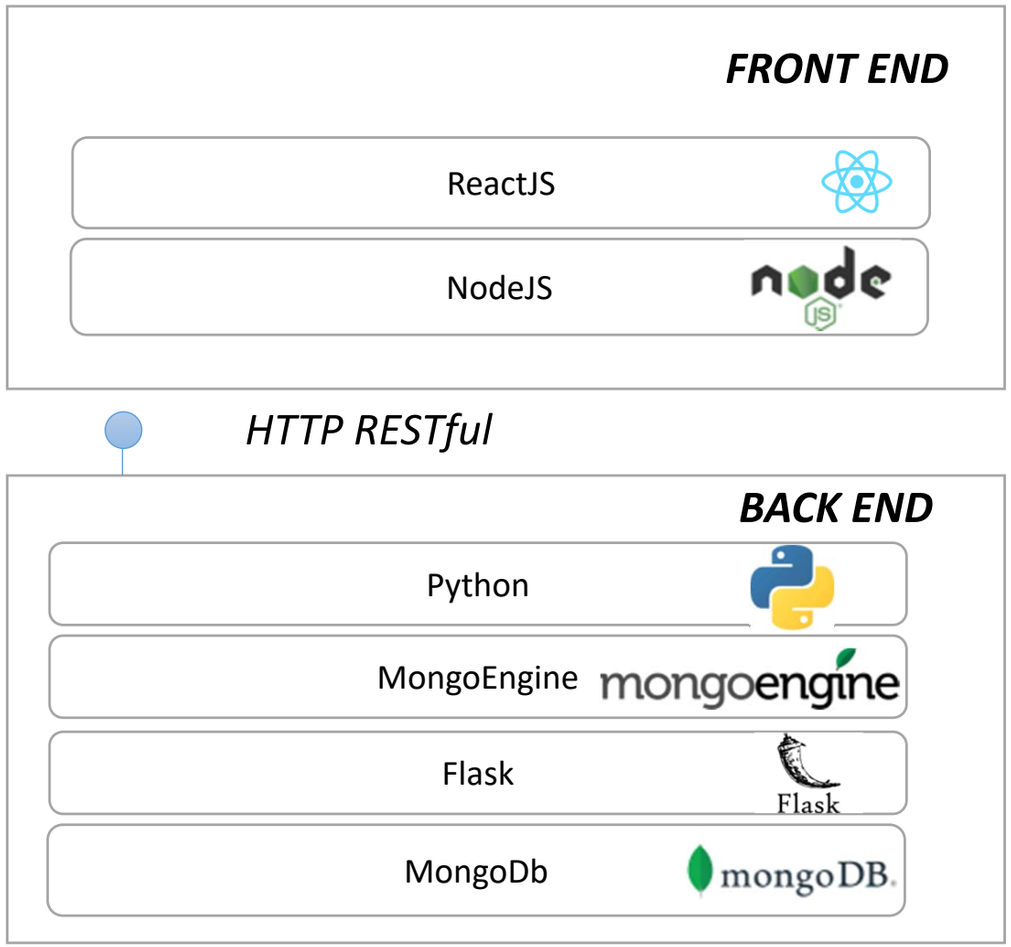
1. *User should be able to **login and see a list of products**, select from there, select one of the defined addresses and do payment and see the order in order list.*
2. *Delivery happens separate as Shipped by the Seller and once Delivered it is updated in the System.*

Assumptions:

User information including Address, Product Types, Products List are available. Everything available in Products List is available in Store in infinite numbers (Not checking availability at the moment).

Payment is dummy interface. Inventory and price history is not handled now. Price is fixed at the moment.

Overview| Architecture



The Front End is built using ReactJS

Service/API Testing is done using Postman

The Services/Back End is built using Python with Flask microframework serving HTTP RESTful services.

Object Document Mapping MongoEngine with MongoDb http://mongoengine.org/

Architecture| Back End

```
#route returning Products list
@cross_origin(**api_v2_cors_config)
def getProductsList():
    product = ProductController()
    return product.getAllProducts()
```

Routes

ProductController

- + __init__(var)
- + getAllProducts(var)
- + getAllProductsByType(var, var)
- + obj_dict(var, var)

Controllers

db.Document
Customer

- + address_line1: var = db.StringField(...
- + address_line2: var = db.StringField(...
- + city: var = db.StringField(...
- + country: var = db.StringField(...
- + email: var = db.StringField(...
- + firstname: var = db.StringField(...
- + id: var = db.IntField(pri...
- + lastname: var = db.StringField(...
- + meta: var = {'collection': ...
- + paymenttype_id: var = db.IntField()
- + phone: var = db.StringField(...
- + profile: var = db.StringField(...

db.Document
PaymentType

- + code: var = db.IntField()
- + description: var = db.StringField(...
- + id: var = db.IntField(pri...
- + meta: var = {'collection': ...
- + name: var = db.StringField(...

db.Document
ProductType

db.Document
Product

db.Document
User

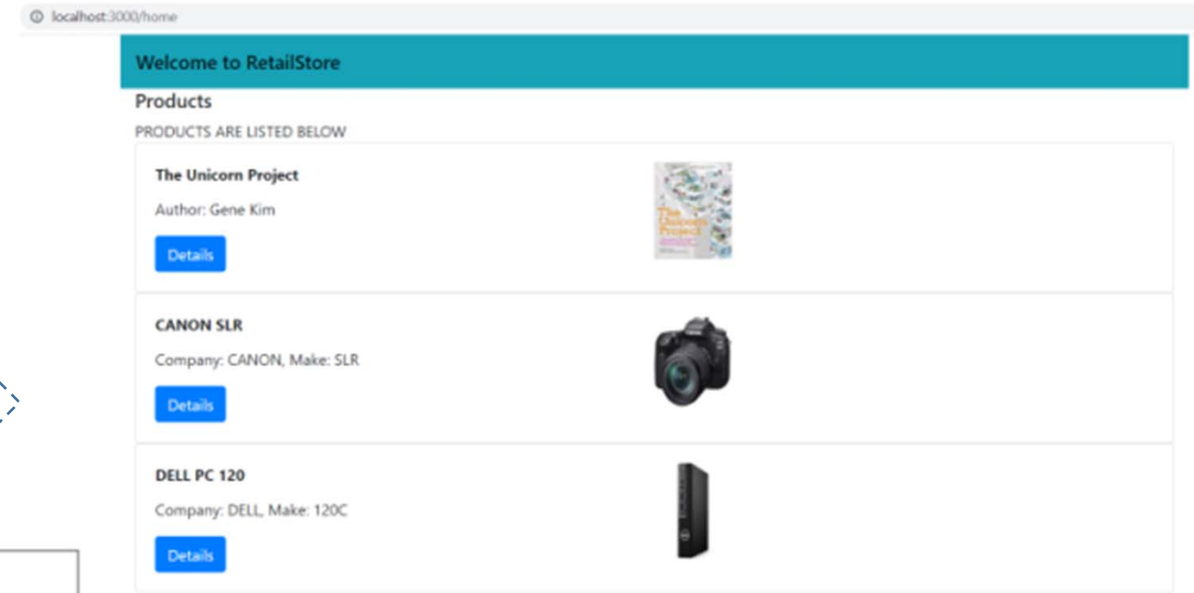
Model

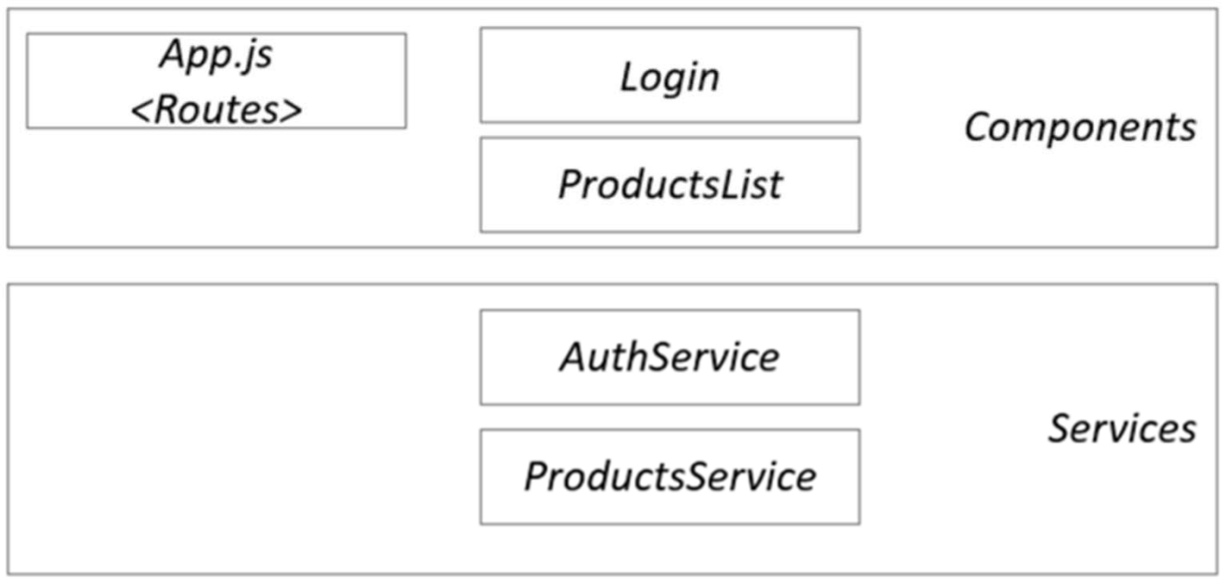
Routes define the service endpoints. They are linked to a URL in manage.py using add_url_rule app.add_url_rule('/api/producttypes', view_func=routes.getProductTypesList)

Controllers expose the methods which can be exposed as service end points. They are invoked from route.

Model holds Object Document Mapping to Database. These are made serializable to JSON using @dataclass attribute and defining the attributes (like id:int in ProductType)

Architecture| Front End



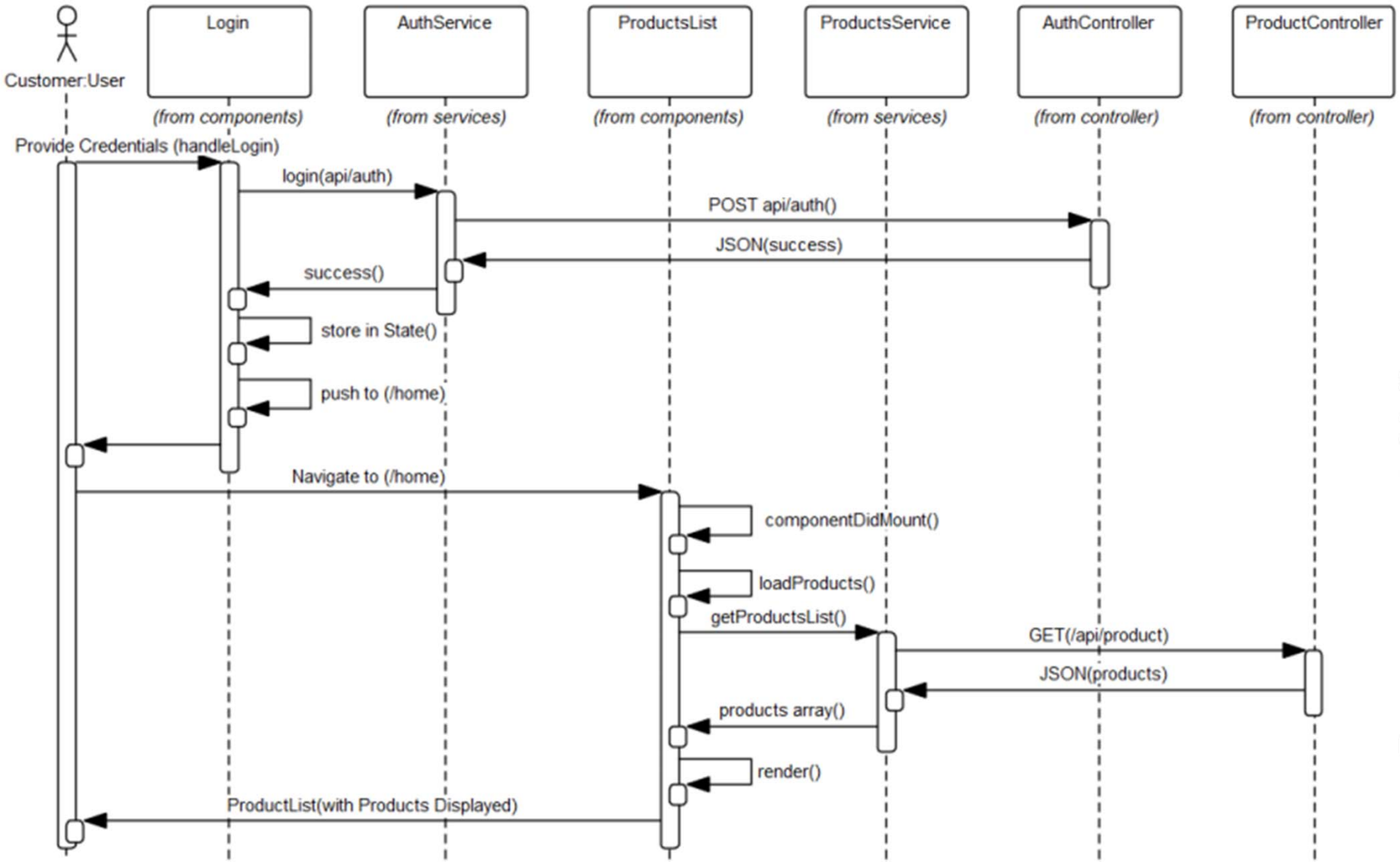


Components are the way react organizes elements –Login, ProductsList are examples. They are defined as routes in App.js

Services make call to APIs and return response

Architecture – Layered View

Architecture| Interactions



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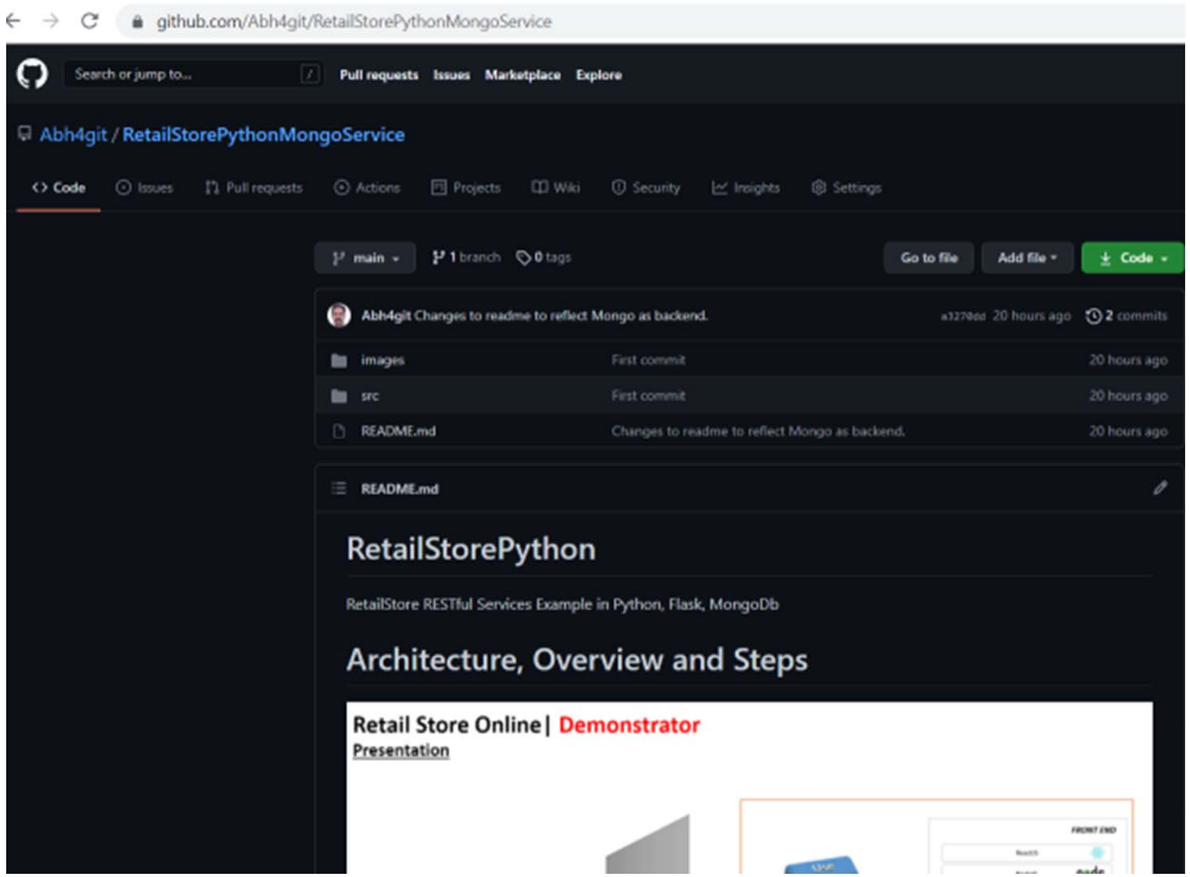
Architecture – Sequence Diagram

Getting Started| Back End

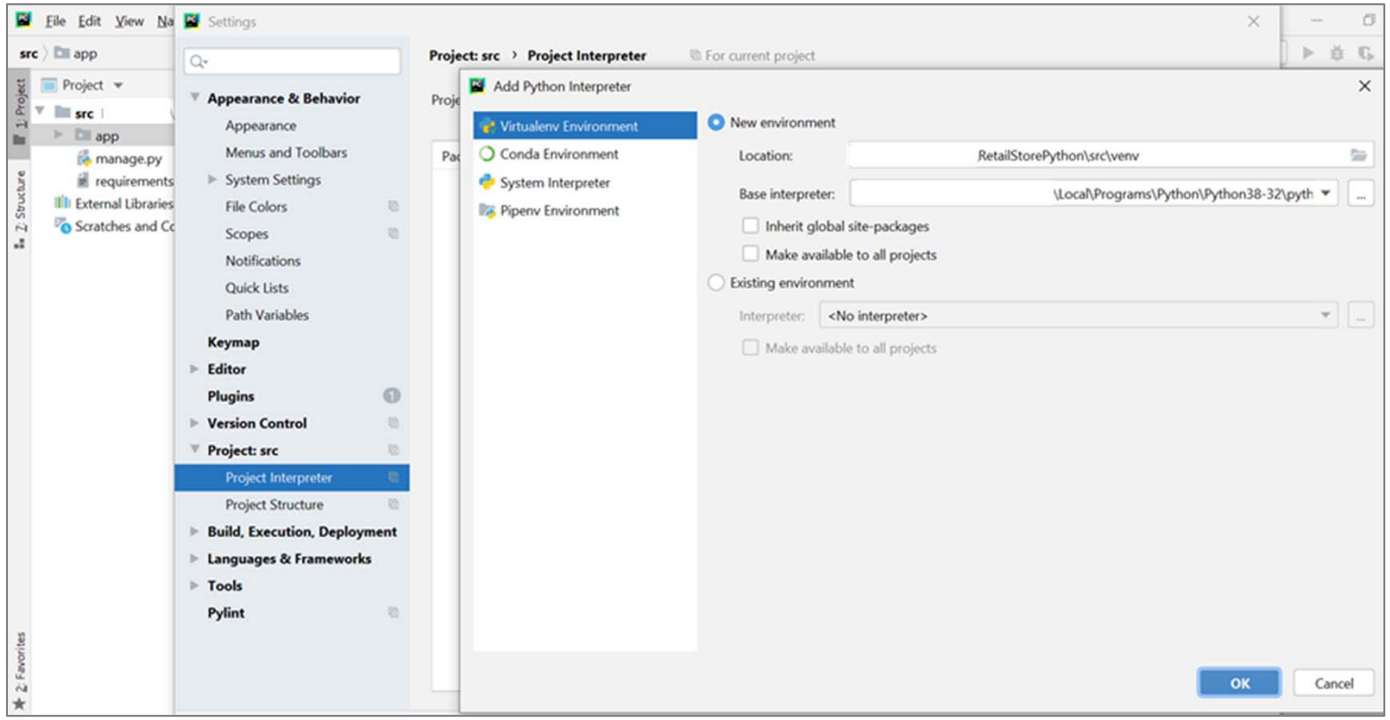


GitHub URL:

https://github.com/Abh4git/RetailStorePythonMongoService

GitHub Repo for Back End

Getting Started| Back End



1. *Open PyCharm in src folder and setup Interpreter and select Virtual Environment*

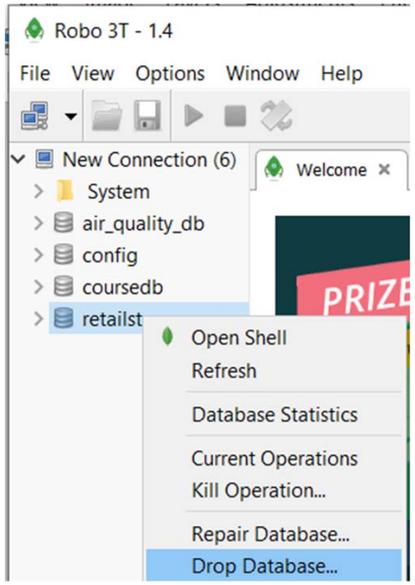
2. *Pip install as shown below:*

```
src>pip install -r requirements.txt
```

3. *Set FLASK_APP environment variable like below*
src> **set FLASK_APP=manage.py** *(In Linux use export)*

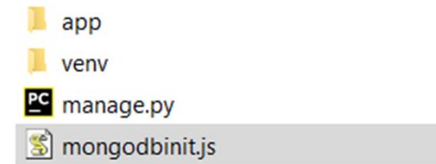
Back End running

Getting Started| Back End - Database



1. *If the database already exists, drop it*

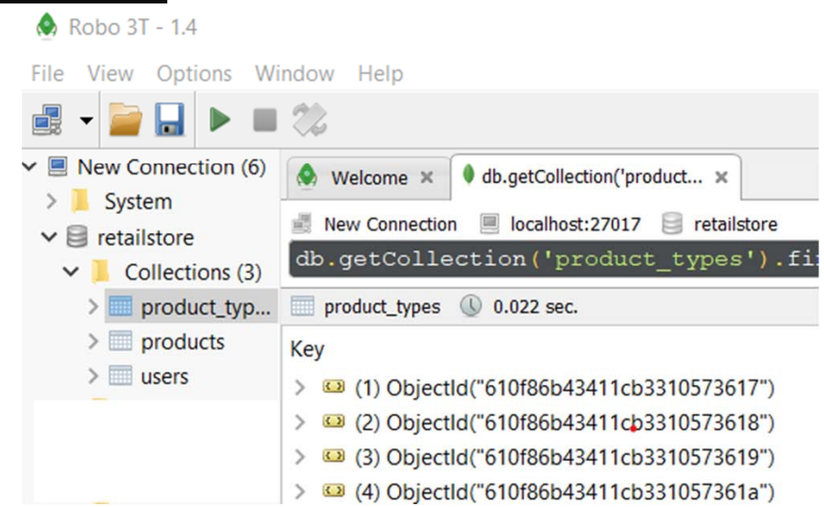
2. *Execute the script in src folder*



mongo localhost:27017 mongodbinit.js

```
D:\GitHub\PythonMongoService\src>mongo localhost:27017 mongodbinit.js
MongoDB shell version v4.4.6
connecting to: mongodb://localhost:27017/test?compressors=disabled&gssapiServiceName
Implicit session: session { "id" : UUID("47e4cdb8-6ab1-4602-83bc-d7ef754b4e0a") }
MongoDB server version: 4.4.6
```

No errors, then database, tables and data should be created

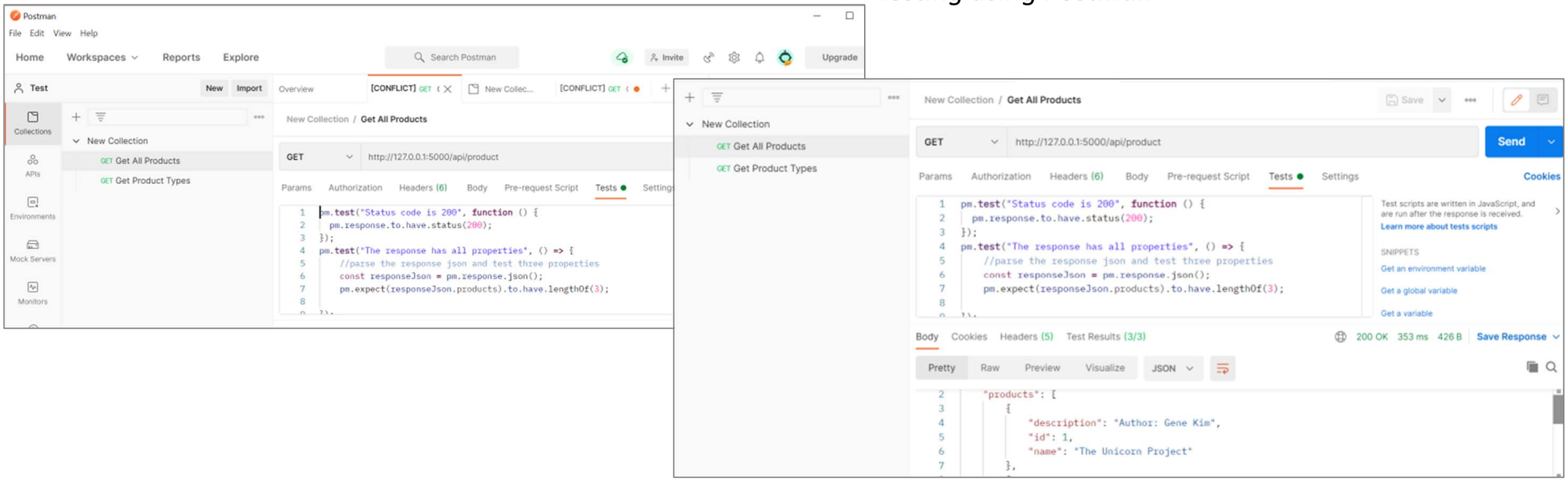


Getting Started| Running Back End and Testing it

```
(venv) D:\Abhilash\GitHub\RetailStorePython\src>flask run
 * Serving Flask app "manage.py"
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deployment.
   Use a production WSGI server instead.
 * Debug mode: off
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

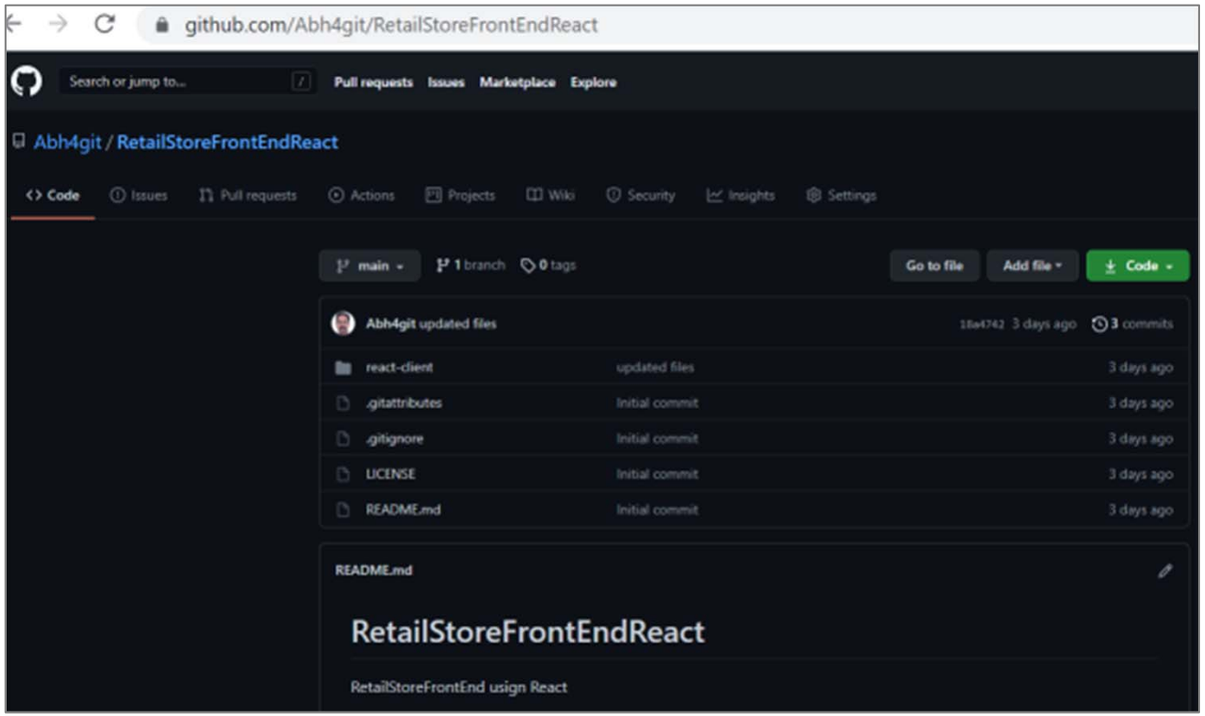
1. *Start execution from terminal src>* ***flask run***

Testing using Postman



The Test results show if the service is running fine.

Getting Started| Front End

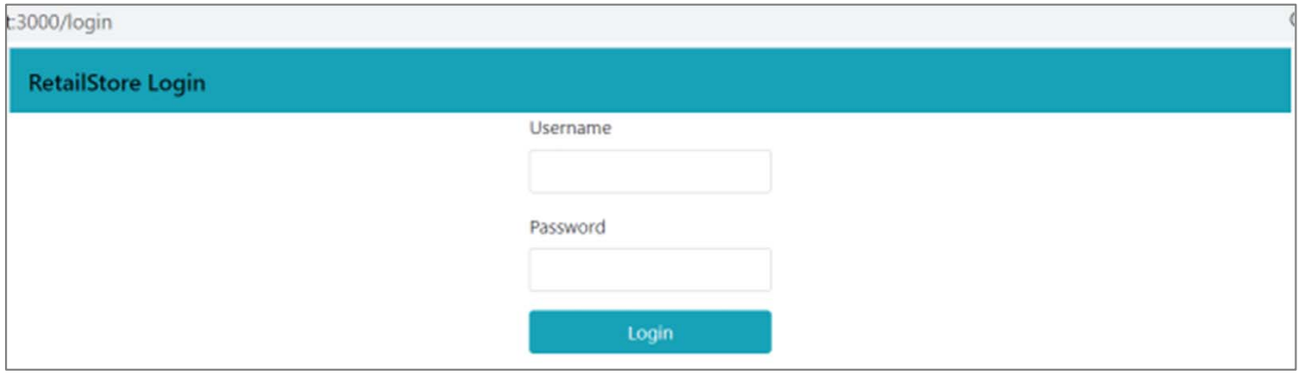


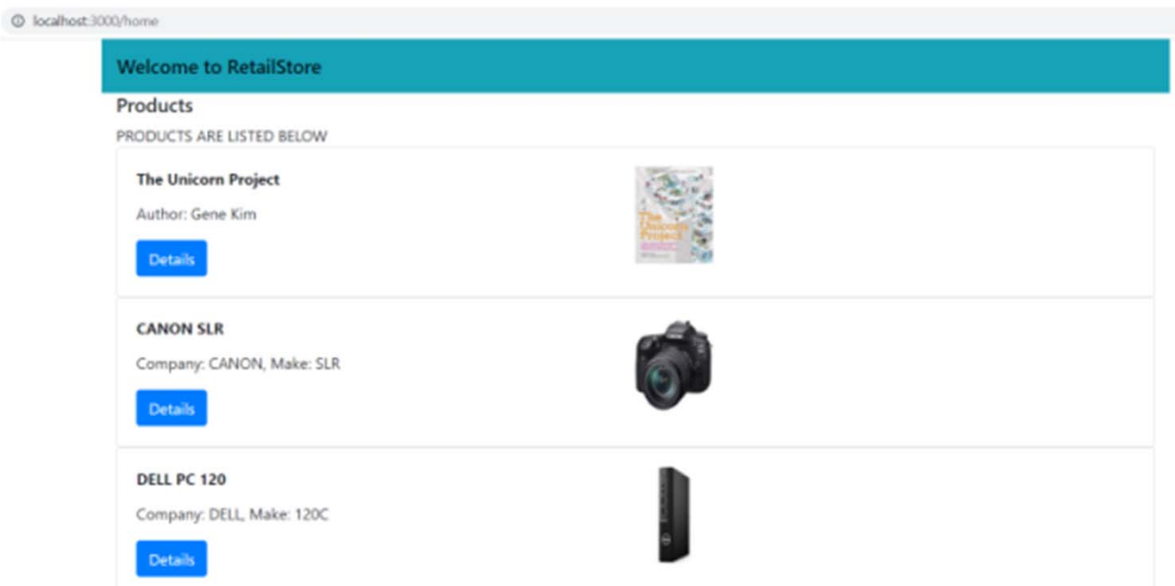
GitHub URL:

https://github.com/Abh4git/RetailStoreFrontEndReact

GitHub Repo –Front End

Getting Started| Front End



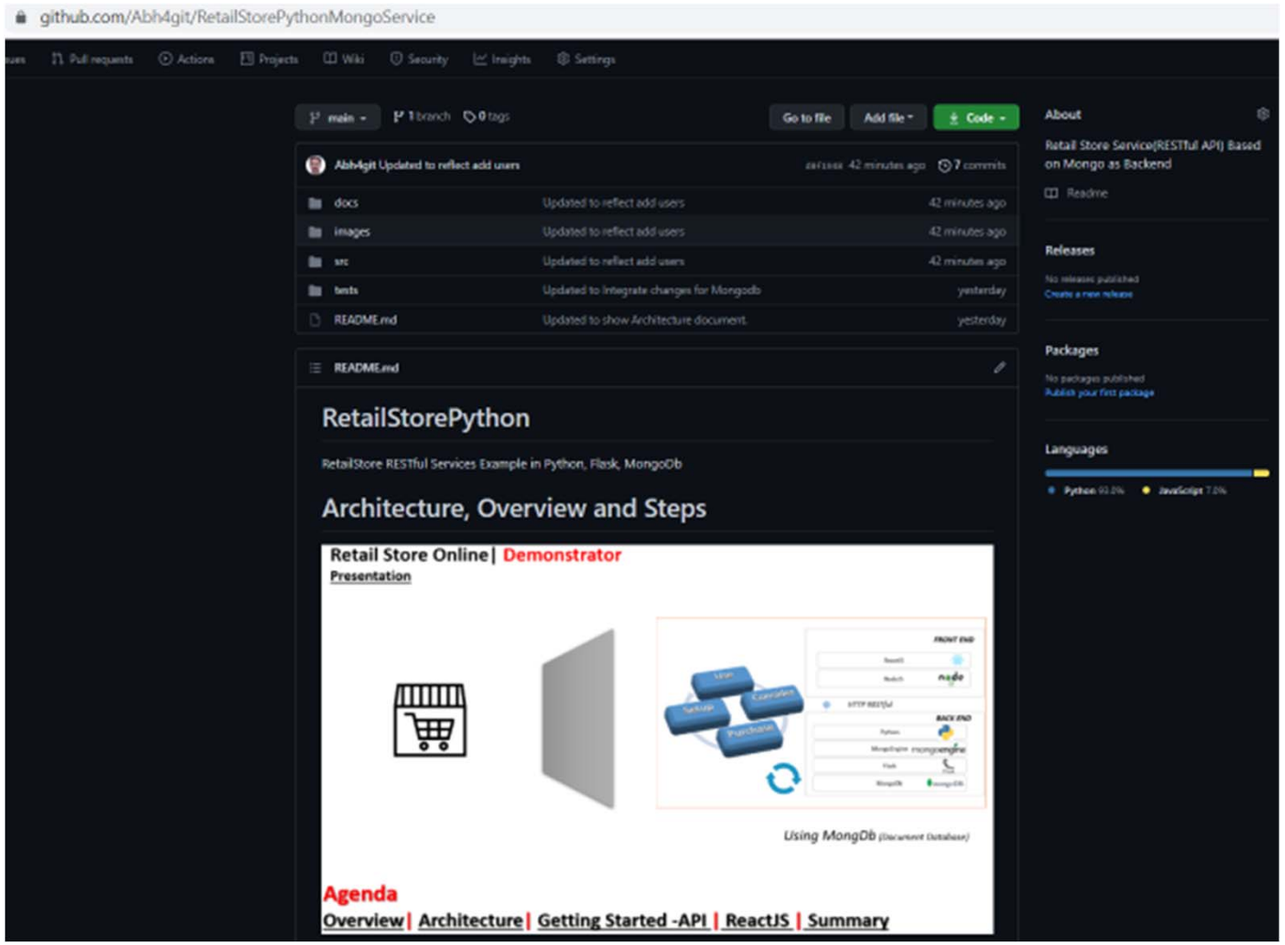


Pre-requisite: NodeJs need to be installed:

1. Install dependencies
src> ***npm install***
2. Start program
src> ***npm start***

Executing the Front End

Summary| Architecture, Design and Getting it running



1. *Back End using Python, Flask, MongoEngine and MongoDb*
2. *Front End using NodeJS, ReactJS*
3. *Testing using Postman*
4. *Step by step approach explained.*

Thank you!