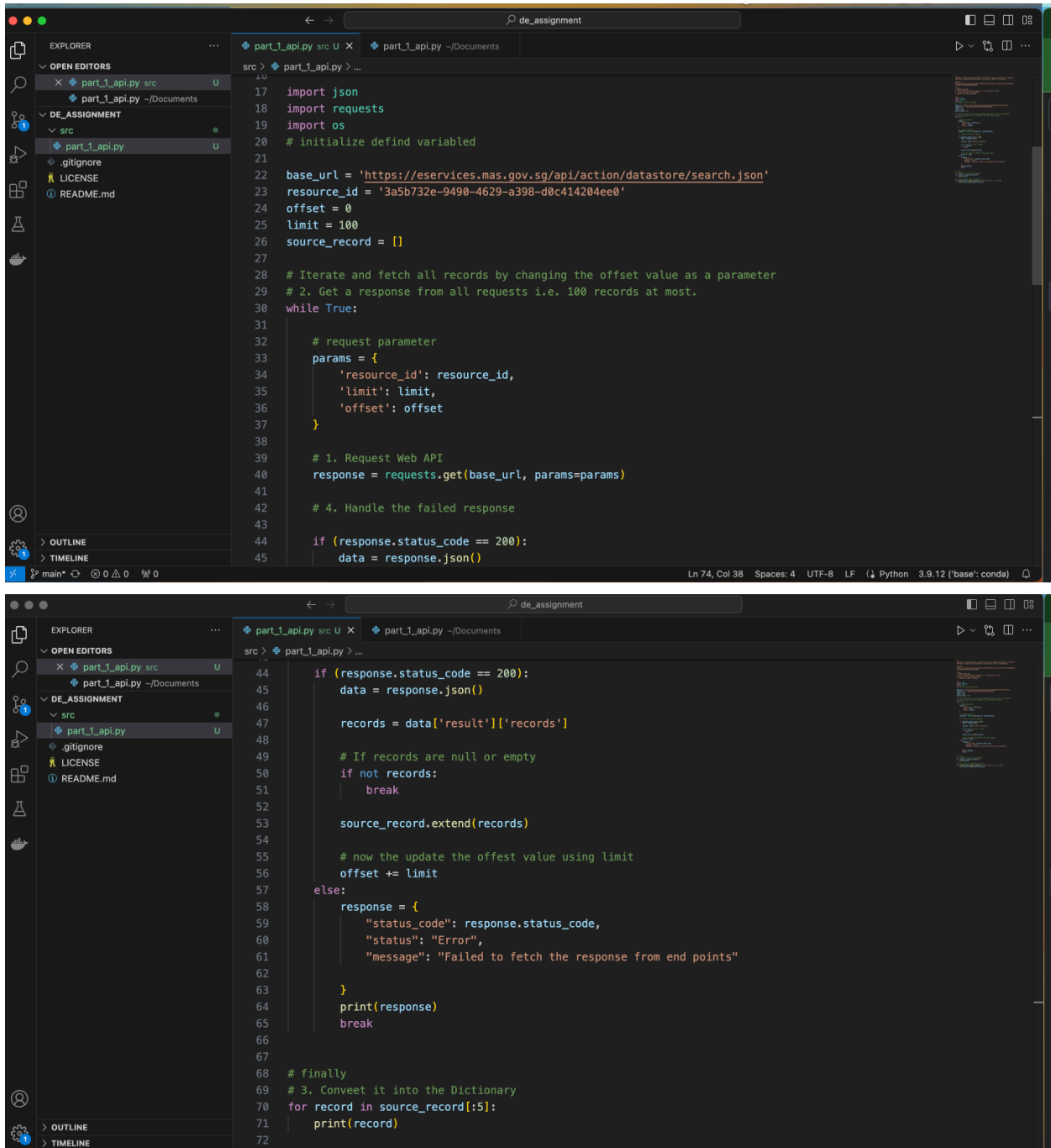


## PART 1: FETCH RECORD AND CONVERT INTO THE DICTIONARY

Project Code (GitHub): [https://github.com/ajay9889/de\\_assignment/](https://github.com/ajay9889/de_assignment/)



```
10
11
12 import json
13 import requests
14 import os
15 # initialize define variable
16
17 base_url = 'https://eservices.mas.gov.sg/api/action/datastore/search.json'
18 resource_id = '3a5b732e-9490-4629-a398-d0c414204ee0'
19 offset = 0
20 limit = 100
21 source_record = []
22
23 # Iterate and fetch all records by changing the offset value as a parameter
24 # 2. Get a response from all requests i.e. 100 records at most.
25 while True:
26
27     # request parameter
28     params = {
29         'resource_id': resource_id,
30         'limit': limit,
31         'offset': offset
32     }
33
34     # 1. Request Web API
35     response = requests.get(base_url, params=params)
36
37     # 4. Handle the failed response
38
39     if (response.status_code == 200):
40         data = response.json()
41
42         if (response.status_code == 200):
43             data = response.json()
44
45             records = data['result']['records']
46
47             # If records are null or empty
48             if not records:
49                 break
50
51             source_record.extend(records)
52
53             # now the update the offset value using limit
54             offset += limit
55         else:
56             response = {
57                 "status_code": response.status_code,
58                 "status": "Error",
59                 "message": "Failed to fetch the response from end points"
60             }
61             print(response)
62             break
63
64 # finally
65 # 3. Convert it into the Dictionary
66 for record in source_record[:5]:
67     print(record)
```

## Response Handl:

```
$# finally display on console first 5 records only
for record in source_record[:5]:
    print(record)

# or if we want to save into the file
with open(os.path.join(os.getcwd(), 'src/part_1_file.json'), 'w+') as fp:
    fp.write(json.dumps(source_record))
```

Display 5 records on the console and dump data into the the file in same src/**part\_1\_file** folder

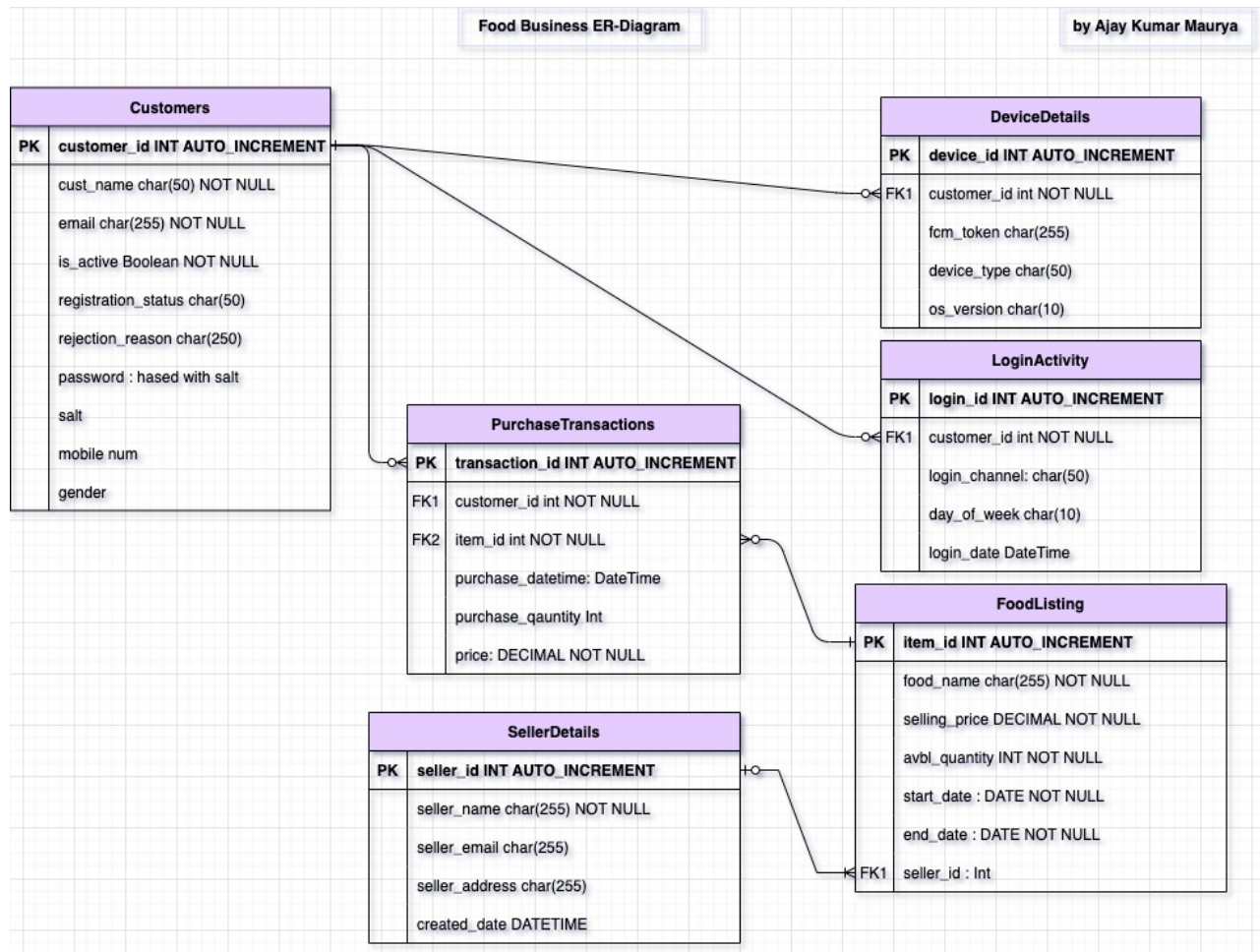
The screenshot shows a code editor with a file named `part_1_api.py` open. The script is designed to fetch exchange rate data from the MAS.gov.sg API. It includes comments explaining the purpose and tasks, and code for making a GET request, parsing the JSON response, and printing the first 5 records. The terminal output shows the first 5 records of the exchange rate data, including fields like `end_of_week`, `preliminary`, and various currency codes (e.g., `eur_sgd`, `gbp_sgd`, `usd_sgd`).

```
1
2
3 Company A Finance department requires historical exchange rate data for analysis.
4 This data is publicly available and a data source, MAS, was identified.
5
6 Web API:
7 https://eservices.mas.gov.sg/api/action/datastore/search.json?resource_id=3a5b73
8 2e-9490-4629-a398-d0c414204ee0
9
10 Tasks:
11 1. Request Web API
12 2. Get a response from all requests i.e. 100 records at most.
13 3. Convert it into the Dictionary
14 4. Handle the failed response
15
16
17 import json
18 import requests
19 import os
20 # initialize defind variable
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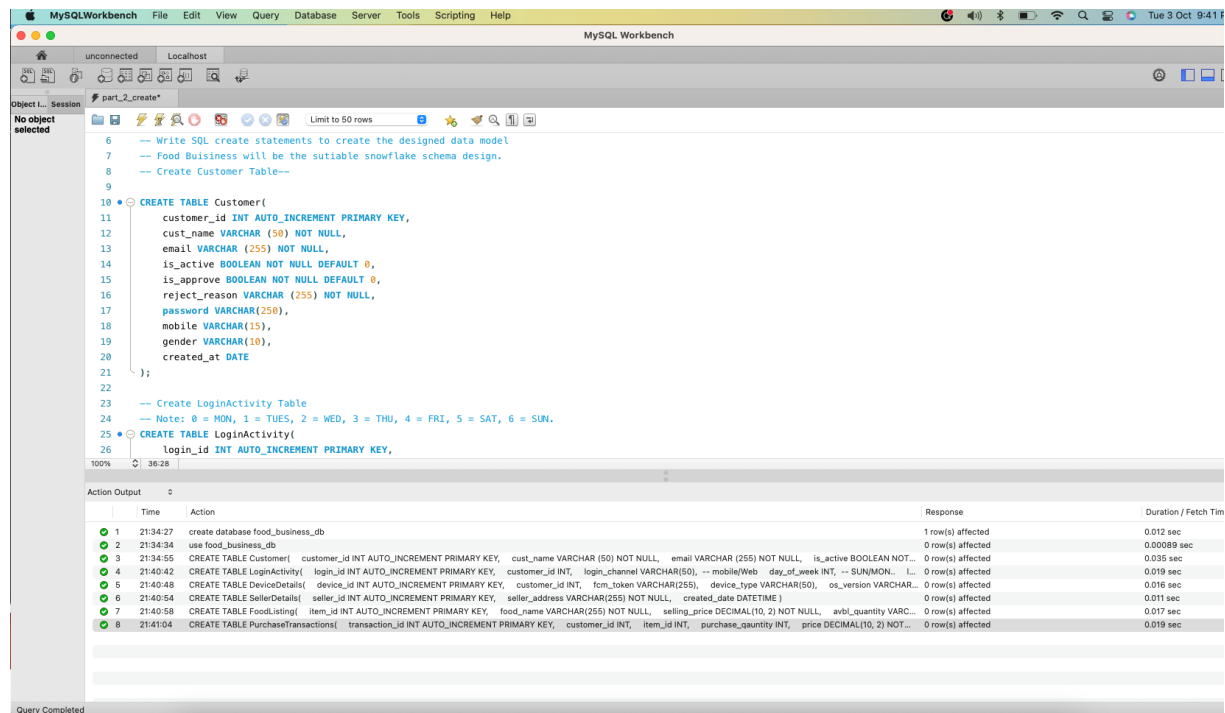
PART 2: Data Modeling, Creating Table and Insert Required Data into the respective Tables.

Created ER-Diagram:

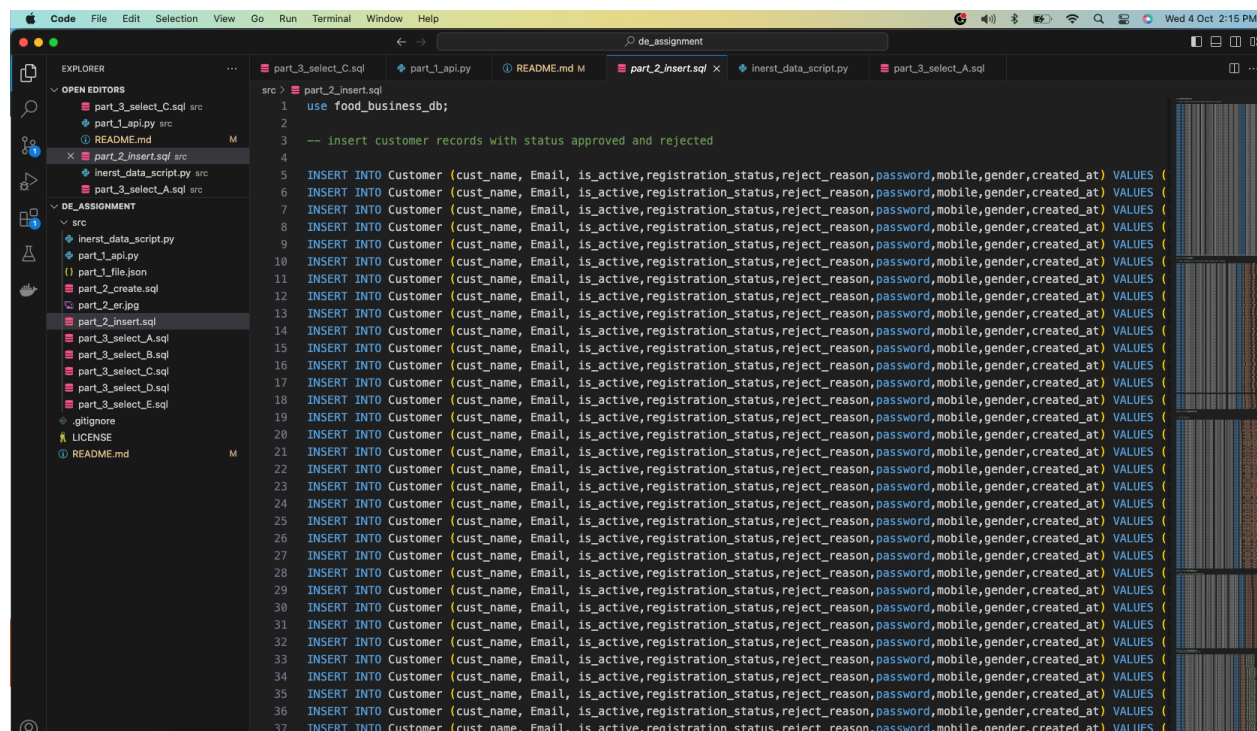
[https://github.com/ajay9889/de\\_assignment/blob/main/src/part\\_2\\_er.jpg](https://github.com/ajay9889/de_assignment/blob/main/src/part_2_er.jpg)



Accordingly, run the create Tables command to create all required tables based on the above ER diagram in MySQL WorkBench.



## Create “part\_2\_insert.sql”



## Overview Summary and Running the Application Local Machine:

The project is uploaded on GitHub in a public repository.

> [https://github.com/ajay9889/de\\_assignment](https://github.com/ajay9889/de_assignment)

> Open it into the Visual Studio Code for Running the Python Script

```
# API Integrations and DataModeling.
```

Technical project for analysis.

```
# part_1_api.py
```

Company A's Finance department requires historical exchange rate data for analysis.

This data is publicly available and a data source, MAS, was identified.

```
> src/part_1_api.py
```

How to run the Applications:

```
> Install Python by going to the official website >
```

```
https://www.python.org/downloads/.
```

```
> Verify the installation using command> python3 --version
```

```
> Run the App by using the command > python3 src/part_1_api.py
```

```
# Part 2: Data Modeling for Food Business
```

```
![alt
```

```
text] (https://github.com/ajay9889/de_assignment/blob/main/src/part_2_er.jpg)
```

### # Create the Table

```
> Install MySQL WorkBench
> Create Database
> Run all CREATE TABLE Command which is mentioned in the file
src/part_2_create.sql
> Insert required data with respect to each created table > run
insert query one by one in the file src/part_2_insert.sql
```

### # Part 3: Business Insight

A. How many accounts are pending approval, approved and rejected?

```
> src/part_3_select_A.sql
```

B. What are the total logins and purchases for each account?

```
> src/part_3_select_B.sql
```

C. How many accounts have purchases by the following buckets? In percentage.

```
> src/part_3_select_C.sql
```

D. What is the third most purchased item in terms of quantity?

```
> src/part_3_select_D.sql
```

E. Which day (Mon - Sun) have the highest logins? If there are draws, to provide all.

```
> src/part_3_select_E.sql
```