PAYMENT SYSTEM

Barclays Post Grad Induction

Group : PB1B

Team Members

- Himanshu Tiwari – Team Leader
- Sai Krishna
- Keshav
- Khushi Singh
- Komal Khator
- Neha Pal
- Padmini Yadav
- Saurabh Ashutosh
- Mukul Pahuja

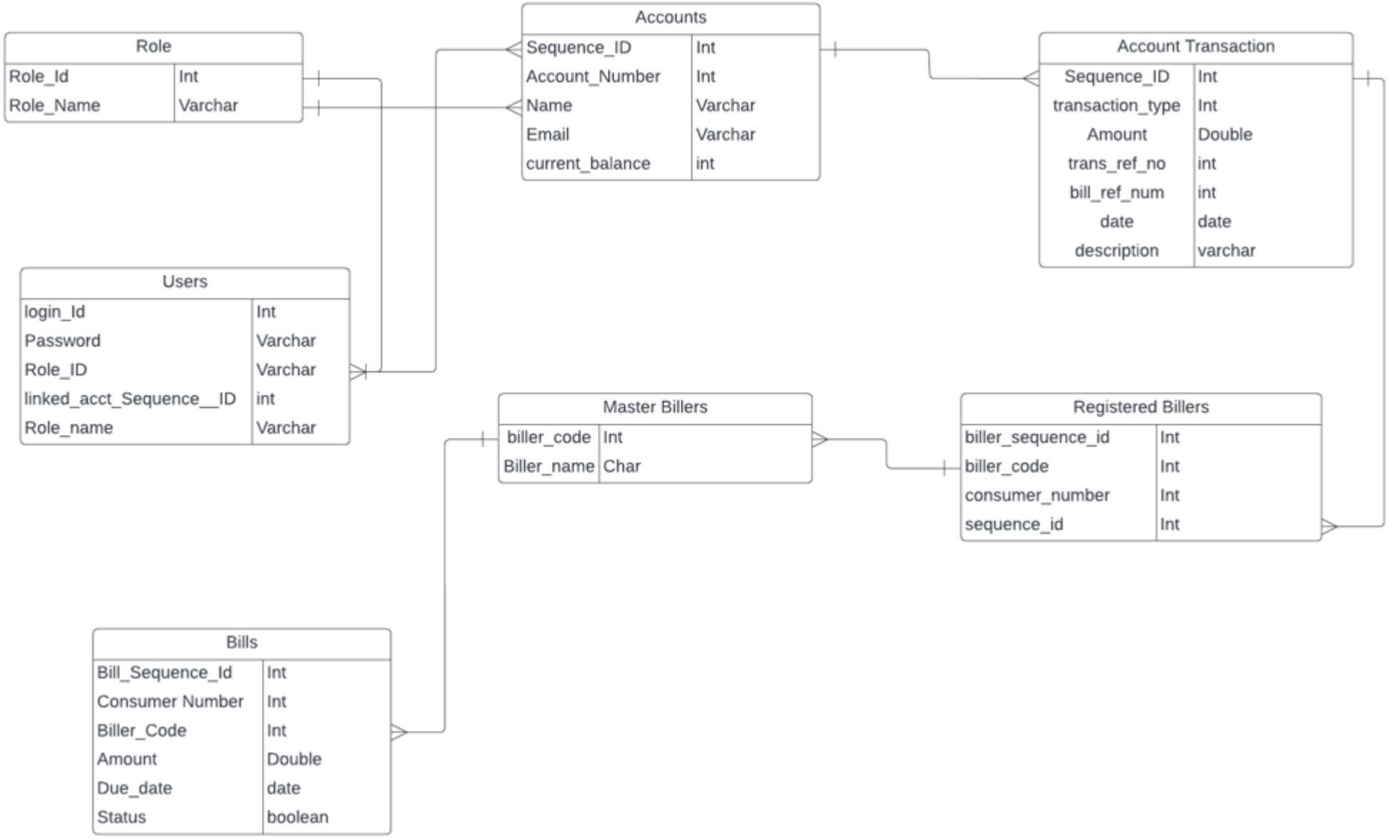
Application Overview

- Payment systems are tools designed to make monetary and other financial transactions easier to clear and settle.
- This application enables account holder to pay their electricity or mobile bills.
- This application has mail provision. (facility to send notification about the new bill, bill status like is it pending or success to account holder via Email.)

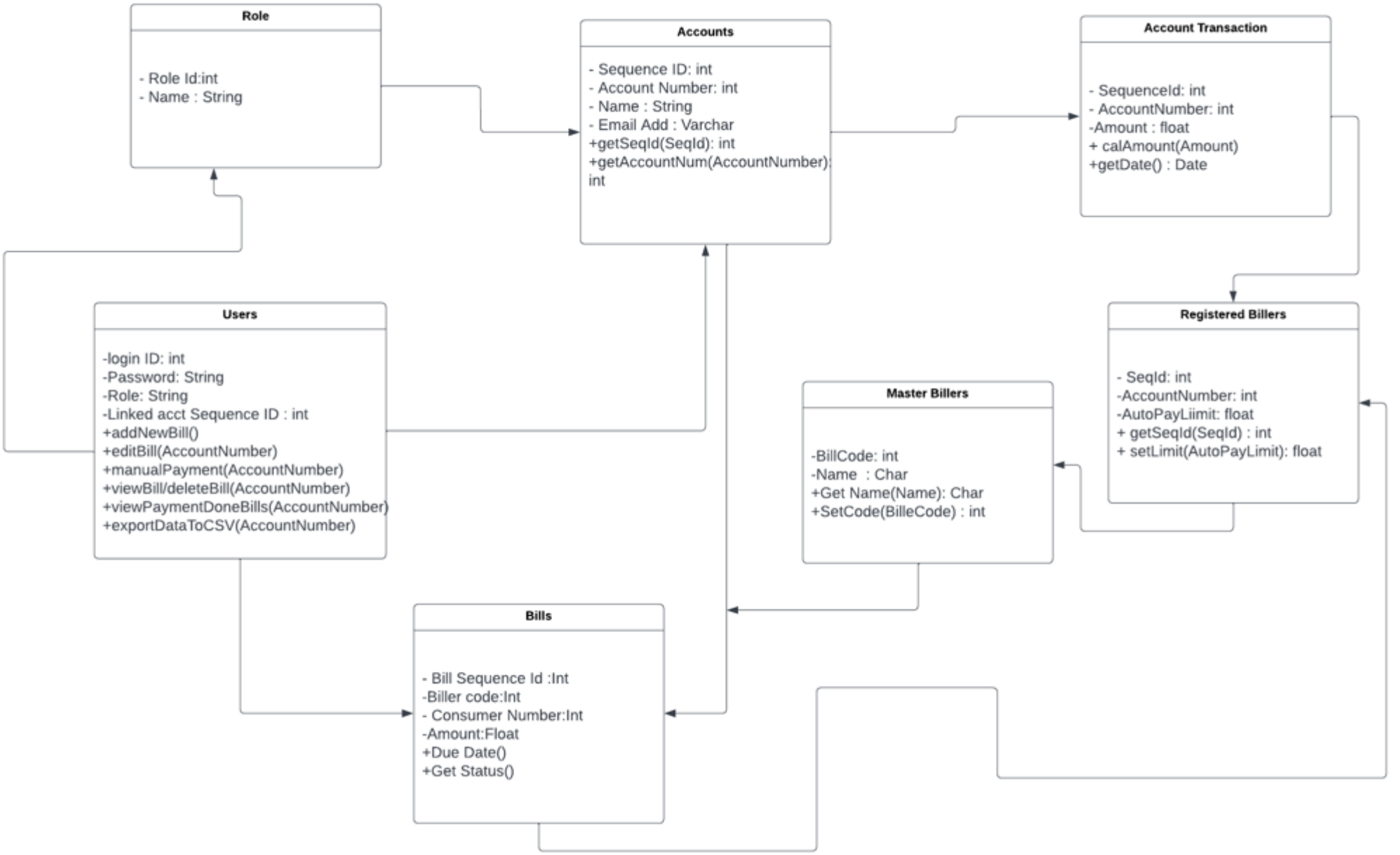
Database Structure

- Account
- Account Transaction
- User
- Bills
- Master billers
- Registered Billers
- Role

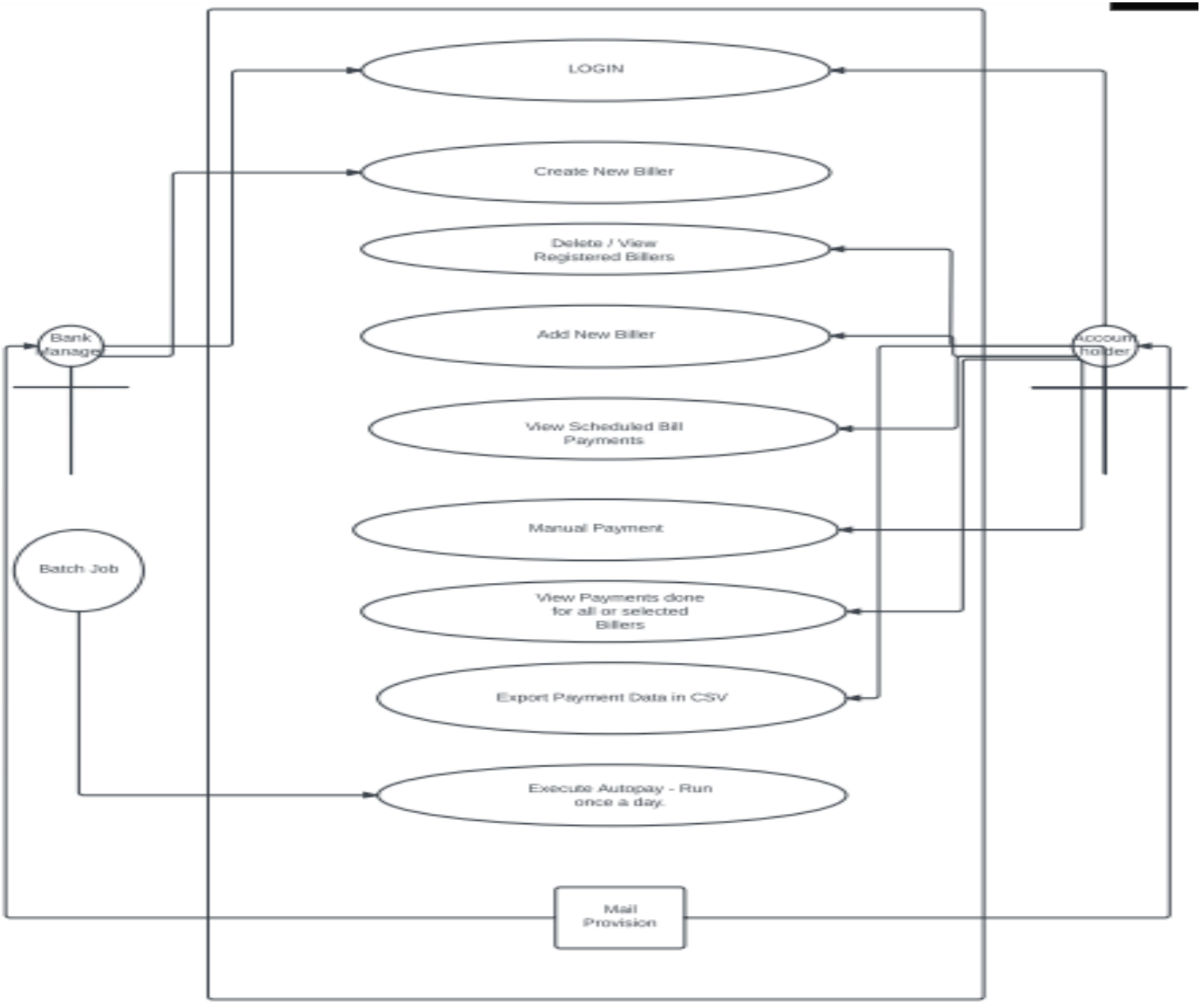
Entity-Relationship Diagram



Class Diagram



Use Case Diagram

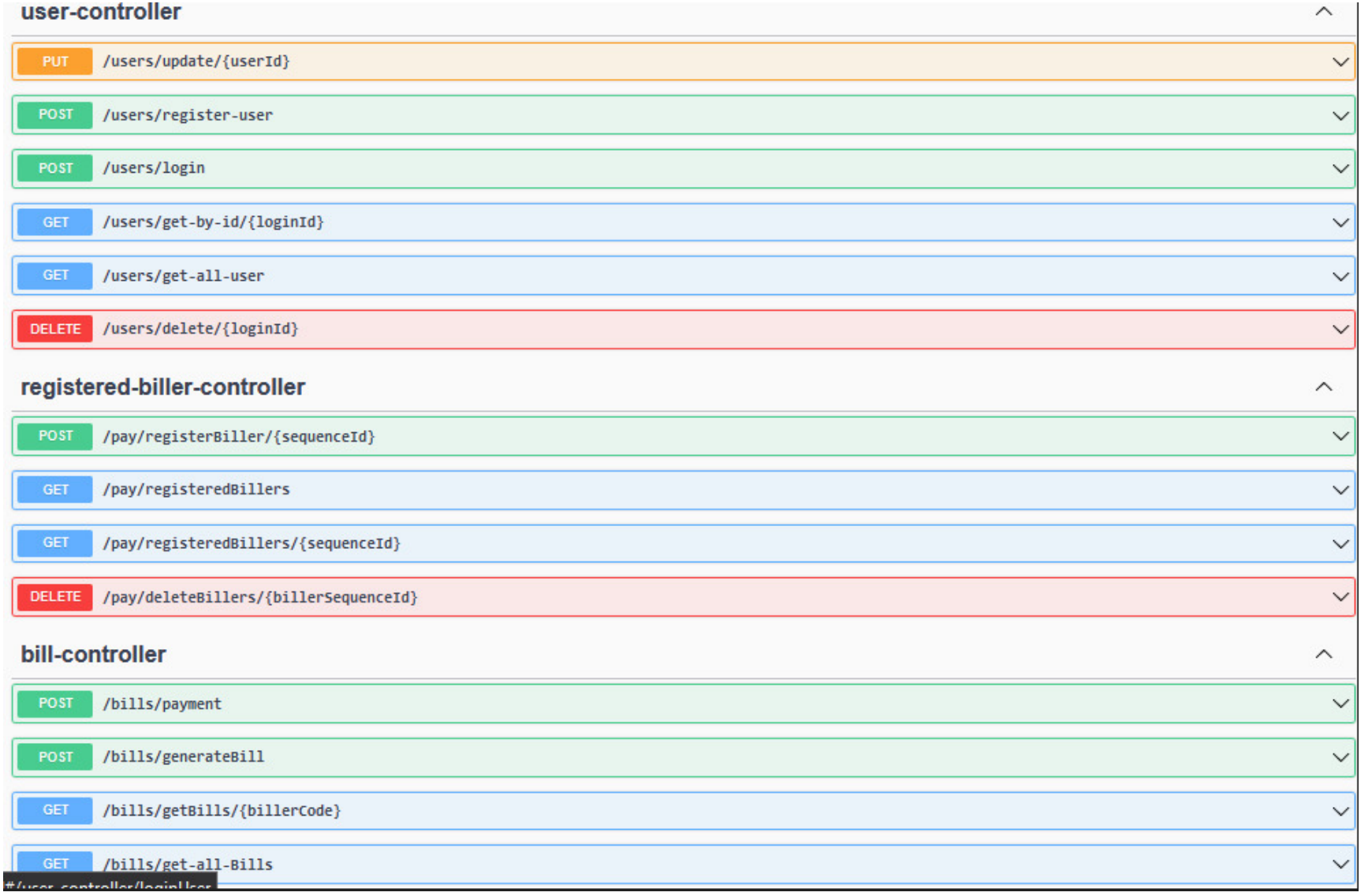


Features

Account Holder

- Subscribe a new biller
- View list of all billers
- View uploaded bills and scheduled payment
- Manual Pay
- View Past Payment details
- Export all payments done into CSV

Swagger UI :



User Registration : POST API
http://localhost:8900/users/register-user

Curl

```
curl -X 'POST' \
  'http://localhost:8765/users/register-user' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
  "loginId": 1111,
  "password": "1111",
  "linkedAccountSequenceId": "1",
  "roleName": "Role_Manager"
}'
```

Request URL

```
http://localhost:8765/users/register-user
```

Server response

Code	Details
201 *Undocumented*	Response body

```
User added successfully with User id : User [ loginId= 1111, password= 1111, linkedAccountSequenceId= 1, roleId= 2, role= Role_Manager ]
```

Download

Response headers

```
connection: keep-alive
content-length: 136
content-type: text/plain;charset=UTF-8
date: Fri,04 Nov 2022 04:11:33 GMT
keep-alive: timeout=60
```

Responses

Code	Description	Links
200	OK Media type	*No links*

Get all user: GET API
http://localhost:8900/users/get-all-user

```
curl -X GET --header 'Accept: application/json' 'http://localhost:8900/users/get-all-user'
```

Request URL

```
http://localhost:8900/users/get-all-user
```

Request Headers

```
{
  "Accept": "*/*"
}
```

Response Body

```
[
  {
    "loginId": 1,
    "password": "123",
    "linkedAccountSequenceId": "1",
    "roleId": 1,
    "roleName": "Bank_ManagerBank_Manager"
  }
]
```

Response Code

```
200
```

Response Headers

```
{
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Fri, 04 Nov 2022 05:06:48 GMT",
  "keep-alive": "timeout=60",
  "transfer-encoding": "chunked"
}
```

Features

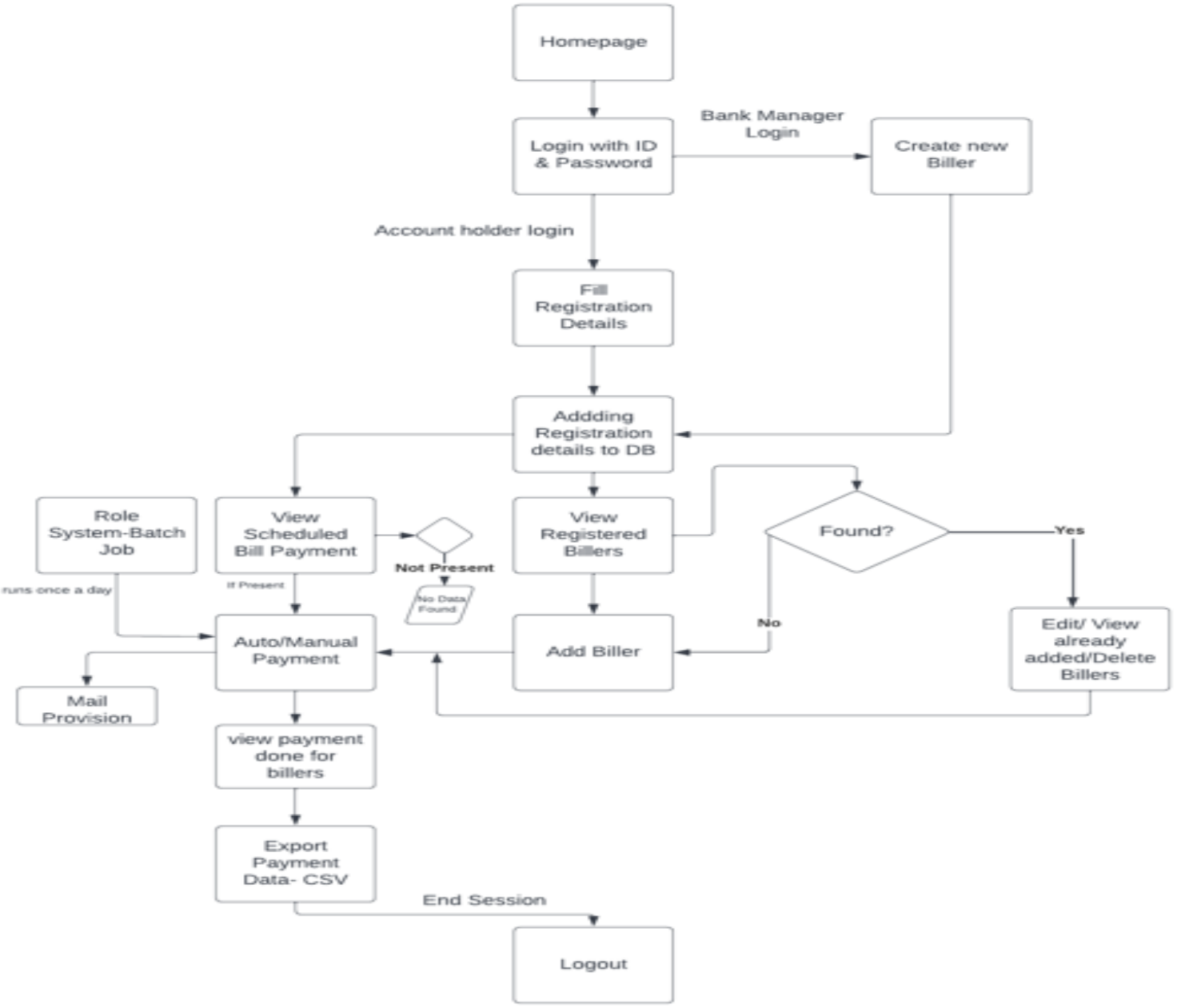
Bank Manager

- Add New Bill
- Manage Master Biller List
- Update Bills
- View All Bills
- Email Notification to Account holder

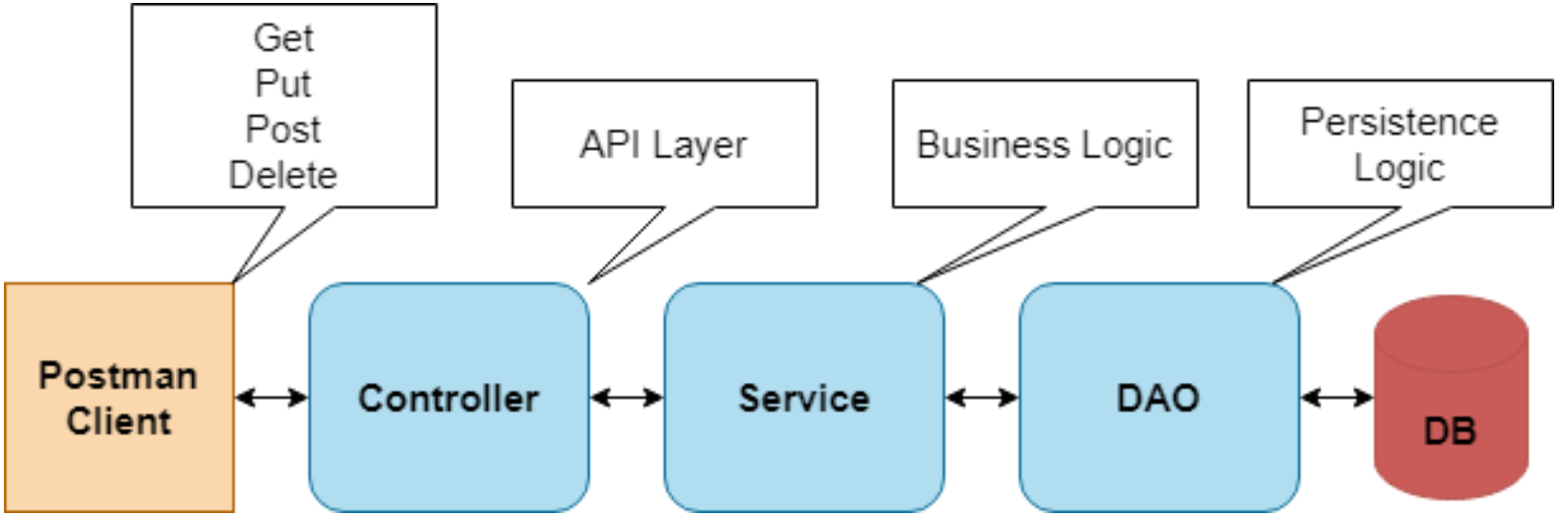
Assumptions

- Bank Manager and Account Holder already exists in role entity.
- Master biller entity already exists.

Architecture of the System



Implementation of the System



The Process

1. Requirement analysis –

Gathered all the requirements for payment system like the system roles and what kind of operations are going to be performed by each entity.

2. Technical Design discussion –

1. Use case Diagram
2. Class Diagram
3. Database model
4. System Architecture

The Process

3. Designing Project Structure and Entities –

   Here Entities created using the hibernate.

4. Implementation of API -

   Designed and Tested API using the postman client.

5. Creating Unit tests –

   Using Junit created the test cases in spring boot application

6. Updating the Repository

   Updating the git repository.

Additional enhancements

- Email notification on bill generation and bill payment.
- Manual bill payment.
- Integrating all API’s with swagger.

Project Dynamics

- Team member 1:

  Worked on Swagger Integration and Implementation of Get all registered billers.

- Team member 2:

  Designed User Login, implementation of Registered user.

- Team member 3:

  Created user entity and user service for Get all users.

- Team member 4:

  Done the part of Adding New biller API to the master biller.

- Team member 5:

  Keeping the all bill payment records in transaction table and manual payment method implementation.

Project Dynamics

- Team member 6:

  Worked on Account holder part to view the list of billers.

- Team member 7:

  Done the part of converting the payment details to CSV file.

- Team member 8:

  Account holder can View uploaded bills and scheduled payment.

- Team member 9:

  Documentation Part of Project as well as entity creation and implementation of triggers.

Lessons Learned

Lesson 1: Agile Work Environment helps to manage the time for working on individual module of project.

Lesson 2: Defining the team and the process for decision-making.

Lesson 3: Set goals that can be achieved

Product Demo

Now we will demonstrate the full working of our application – Payments Systems.