



POD-4

R E T A I L - B A N K I N G - S Y S T E M



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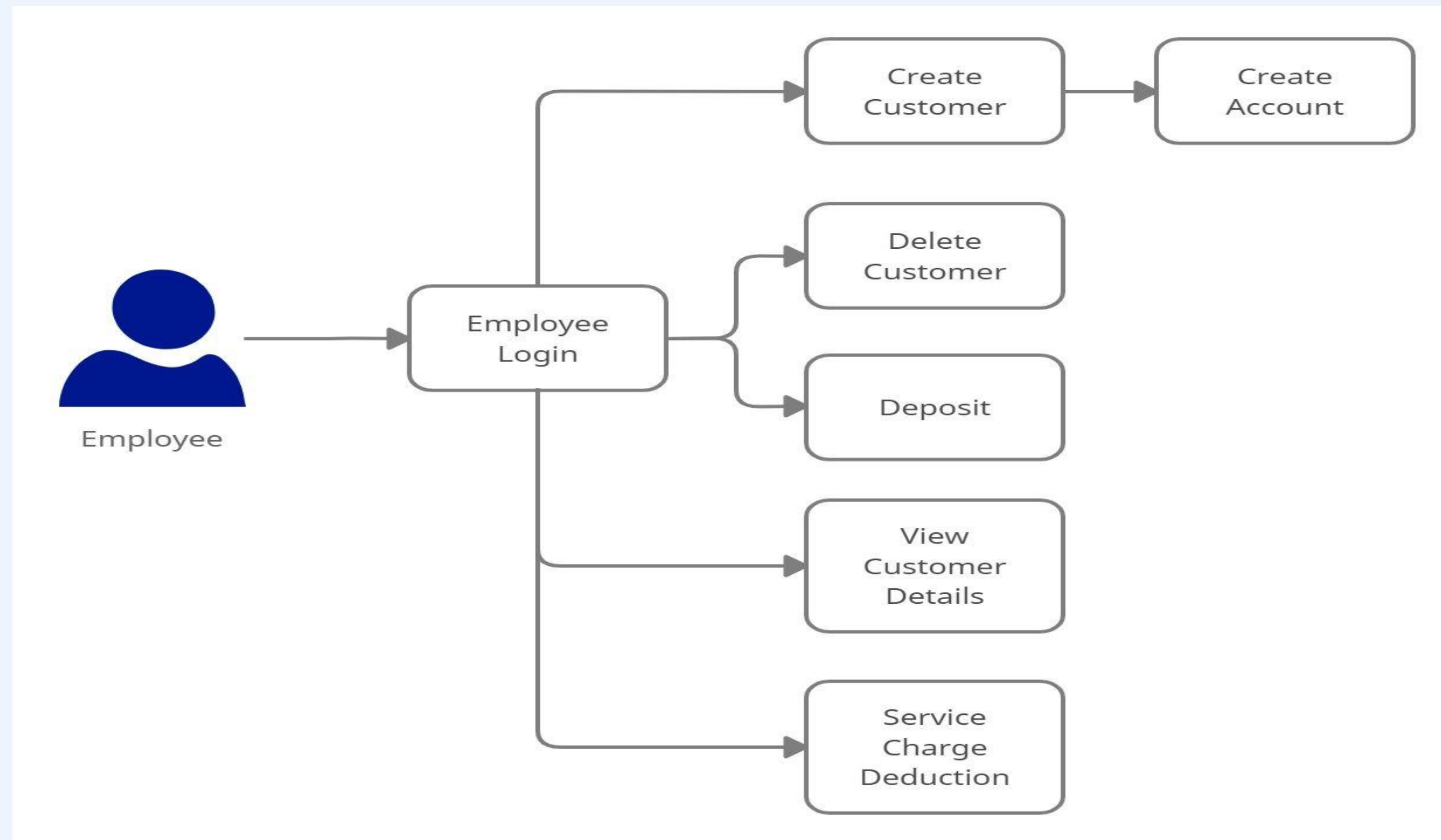
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INTRODUCTION

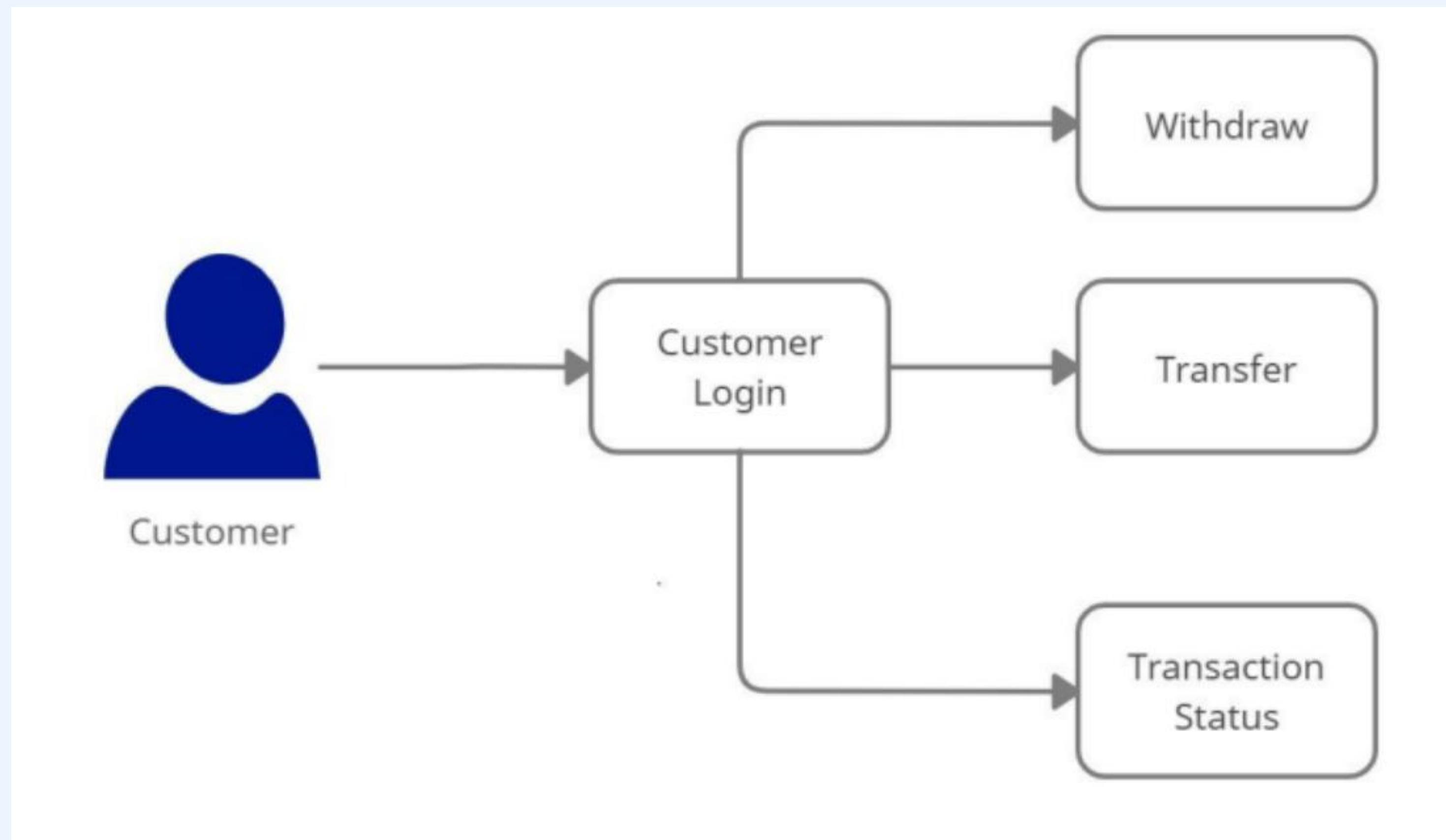


- The Retail Banking System provides Microservice Architecture based software solution.
- It provides high Availability operations for their client & bank employees without disruption.
- Different Microservices combines together to perform together as a unified application.

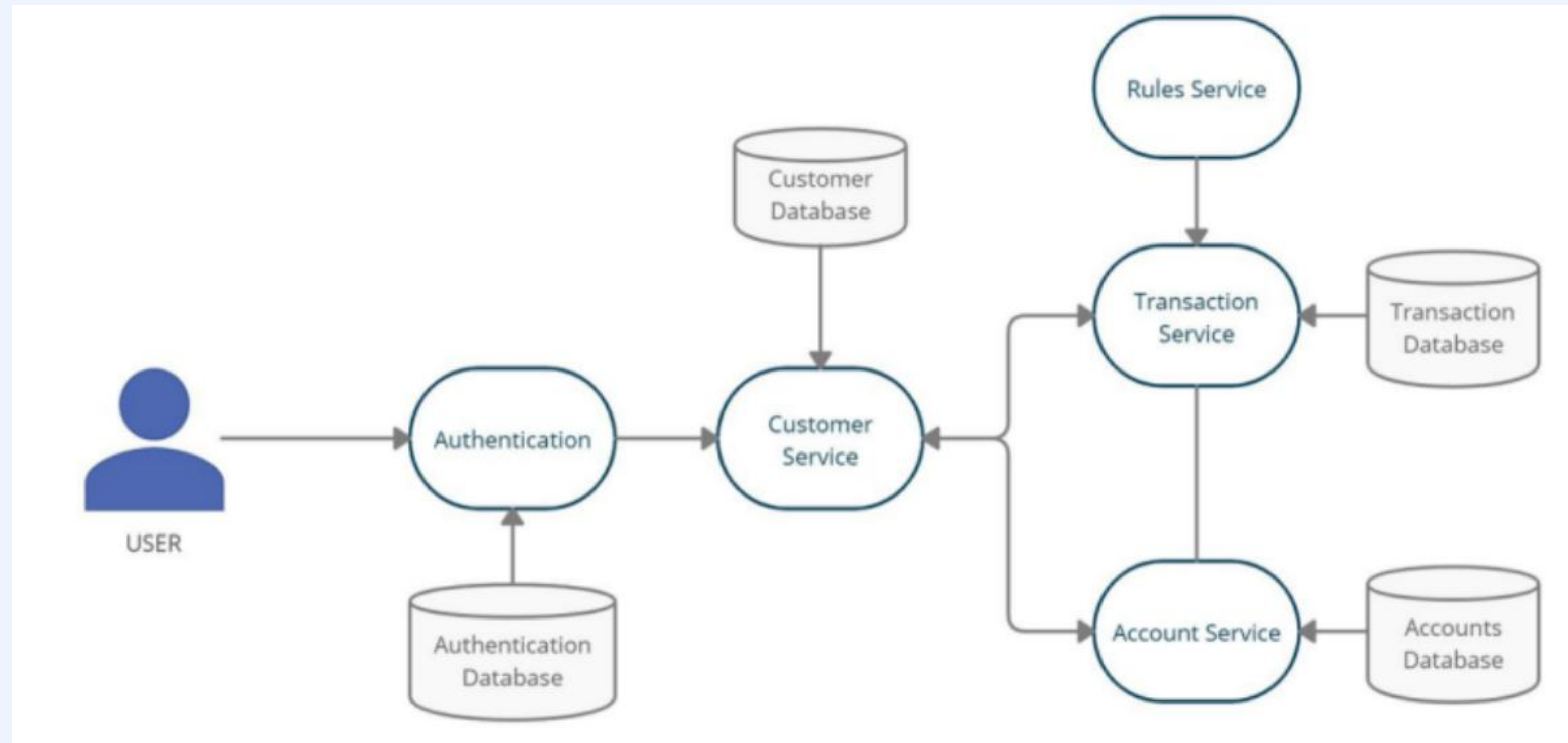
Architecture Diagram for Employee



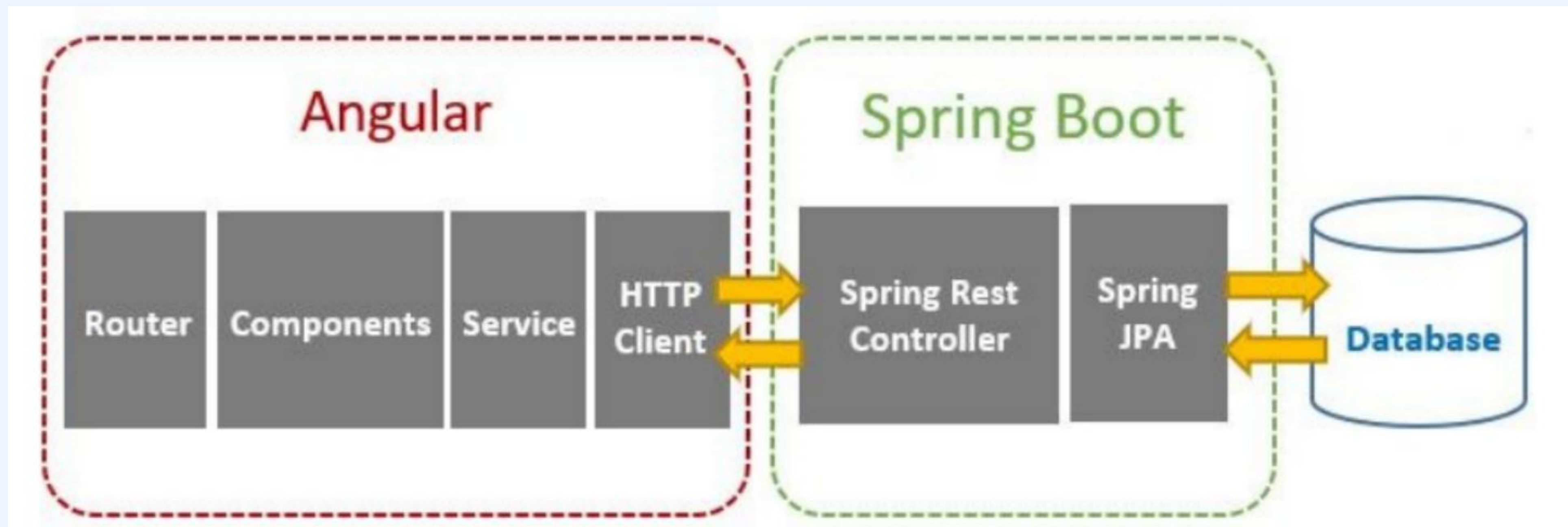
Architecture Diagram for Customer



Work Flow



Client Server



Technologies



- ❖ Front End : Angular 8
- ❖ Backend : Java, Spring Boot, Restful-Services
- ❖ Database : H2 - database
- ❖ Tools : Spring Tool Suite, Swagger, EclEmma, Postman, AWS

Working



❖ Authorization microservice

❖ Customer microservice

❖ Account microservice

❖ Transaction microservice

❖ Rules microservice

Authentication



- ❖ Authentication Microservice will perform operations like:
 - Login &
 - Logout
- ❖ Authentication will provide the JWT token after user's validation.
- ❖ Providing the authorisation based on user's login

Authentication Microservice



POST http://localhost:8084/auth-ms/login Params Send

Authorization Headers (1) Body Pre-request Script Tests

form-data x-www-form-urlencoded raw binary JSON (application/json)

```
1 {
2   "userid": "EMPLOYEE101",
3   "password": "emp",
4   "role": "EMPLOYEE"
5 }
```

Body Cookies Headers (13) Test Results Status: 202 Accepted

Pretty Raw Preview JSON

```
1 {
2   "userid": "EMPLOYEE101",
3   "authToken": "eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJFTVBMT1FRTEwMSIsImV4cCI6MTYyNzU1OTY3MywiaWF0IjoxNjI3NTU5MDczfQ.eCva17280QAFQ6cV24Iret5z8GA920yeGEFbQhLQaJg",
4   "role": "EMPLOYEE"
5 }
```

Customer



❖ Customer microservice will performs operations like :

- Creation and Updation of Customer Details
- Fetching Customer Details
- Deletion of Customer

❖ It even interacts with authentication and account microservices for the purpose of sharing details.

Customer Microservice



DELETE

http://localhost:8085/customer/deleteCustomer/CUSTOMER101

Params

Send

Authorization

Headers (2)

Body

Pre-request Script

Tests

	Key	Value	Description	...	Bulk Edit
<input checked="" type="checkbox"/>	Content-Type	application/json			
<input checked="" type="checkbox"/>	Authorization	eyJhbGciOiJIUzI1NiJ9.eyJzdWUiOiJFTVBMT1IFRTEwMSIsImV4cCI6MTYyNz...			
	New key	Value	Description		

Body

Cookies

Headers (7)

Test Results

Status: 200 OK

Pretty

Raw

Preview

JSON

1

{

2

"message": "CUSTOMER DELETED"

3

}

Account



❖ Account Microservice will perform following operations:

- Customer Account Creation
- Fetching Account Details for Each Customer
- Deposit and Withdraw from customer's account.

❖ Interacts with transaction microservice for validating the account details and transferring the amount.

Account Microservice



GET localhost:8086/account-ms/getAccount/1000000002 Params Send

Authorization Headers (2) Body Pre-request Script Tests

Key	Value	Description
<input checked="" type="checkbox"/> Authorization	eyJhbGciOiJIUzI1NiJ9.eyJzdWiiOiJFTVBMT1FRTUwMSIsImV4cCI6MTYyNz...	
<input checked="" type="checkbox"/> Content-Type	application/json	
New key	Value	Description

Body Cookies Headers (6) Test Results Status: 200 OK

Pretty Raw Preview JSON

```
1 {
2   "accountId": 1000000002,
3   "customerId": "CUSTOMER102",
4   "currentBalance": 40000,
5   "accountType": "Current",
6   "openingDate": "2021-10-08T18:30:00.000+00:00",
7   "ownerName": "Albert Einstein",
8   "transactions": null
9 }
```


Transaction



- ❖ Transaction Microservices will perform operations like:
 - Fetching transactions history for individual account.
 - Validating the account details for individual customer.
 - Checks minimum balance for the transfer and withdraw account.
- ❖ Transactions microservice will interact with Account microservice to actually complete the transactions within the accounts.

Transaction Microservice



POST

localhost:8087/transaction-ms/deposit

Params

Send

Authorization

Headers (2)

Body

Pre-request Script

Tests

form-data

x-www-form-urlencoded

raw

binary

JSON (application/json)

1 {

2 "accountId":1000000002,

3 "amount":5000

4 }

Body

Cookies

Headers (7)

Test Results

Status: 200 OK

Pretty

Raw

Preview

JSON

1 true

Rules



❖ Rules Microservice will be responsible for evaluating rules:

- Minimum Account Balance &

- Service Charge Deduction

❖ Interacts with account and transaction microservice for checking rules while transferring and withdrawing from source account.

Rules Microservice



POST localhost:8090/rules/serviceCharges Params Send

☒ Content-Type application/json

☒ Authorization eyJhbGciOiJIUzI1NiJ9.eyJzdWiiOiJFTVBMT1lFRTEwMSIsImV4cCI6MTYyNz...

Now key Value Description

Body Cookies Headers (7) Test Results Status: 200 OK

Pretty Raw Preview JSON

```
1 [
2   {
3     "accountId": 1000000001,
4     "customerId": "CUSTOMER104",
5     "currentBalance": 50000,
6     "accountType": "Savings",
7     "openingDate": "2021-07-27T00:00:00.000+00:00",
8     "ownerName": "meul",
9     "transactions": null
10  },
11  {
12    "accountId": 1000000002,
13    "customerId": "CUSTOMER103",
14    "currentBalance": 50000,
15    "accountType": "Savings",
16    "openingDate": "2016-09-29T00:00:00.000+00:00",
17    "ownerName": "mehul",
18    "transactions": null
19  },
20  {
21    "accountId": 1000000003,
22    "customerId": "CUSTOMER101",
23    "currentBalance": 38500,
24    "accountType": "Savings",
25    "openingDate": "2017-10-27T00:00:00.000+00:00",
26    "ownerName": "meul",
27    "transactions": null
28  }
29 ]
```

AWS Working URLs



Account:

<http://retail-bank-account-ms-env.eba-acd8m6sf.us-east-1.elasticbeanstalk.com/>

Customer:

<http://retail-bank-customer-ms-env.eba-56j4use6.us-east-1.elasticbeanstalk.com/>

Rules:

<http://retail-bank-rules-ms-env.eba-8gbgkyt9.us-east-1.elasticbeanstalk.com/>

Authentication:

<http://retailbankauthms-env.eba-ajxjmqqz.us-east-1.elasticbeanstalk.com/>

Transaction:

<http://retail-bank-transaction-ms-env.eba-wyahx7n3.us-east-1.elasticbeanstalk.com/>



THANK YOU