Microservices assignment – Java

Microservice identified

For the given requirement, 4 microservices have been identified:

1. **customer-management**
   a. New Customer Registration
   b. Update Customer Info
   c. Viewing the Accounts linked with an UserId
2. **account-management**
   a. New Account Creation
   b. Update Account Info
   c. Account closure
   d. Transfer account to another Branch
   e. Viewing the Transaction Summary of an Account
3. **fund-management**
   a. Money withdrawal
   b. Money deposit
   c. Money transfer
4. **services**
   a. Cheque Book Ordering
   b. Cheque Book Blocking

Git links

Config server properties: https://github.com/maheshm2195/config-server-properties

Code: https://github.com/maheshm2195/microservices-assignment

Things implemented

   a. Zuul API gateway
   b. Eureka service discovery
   c. Json database: can be found in C drive with name of "customerInformation.json" and "accountInformation.json"
   d. Communications between microservices using proxies
   e. Central logging on Zuul
   f. Central exception handling
   g. Central configuration
   h. Docker hosting

Ports for each microservice

a. Customer management: 8080
b. Account management: 8081
c. Fund management: 8082
d. Services: 8083
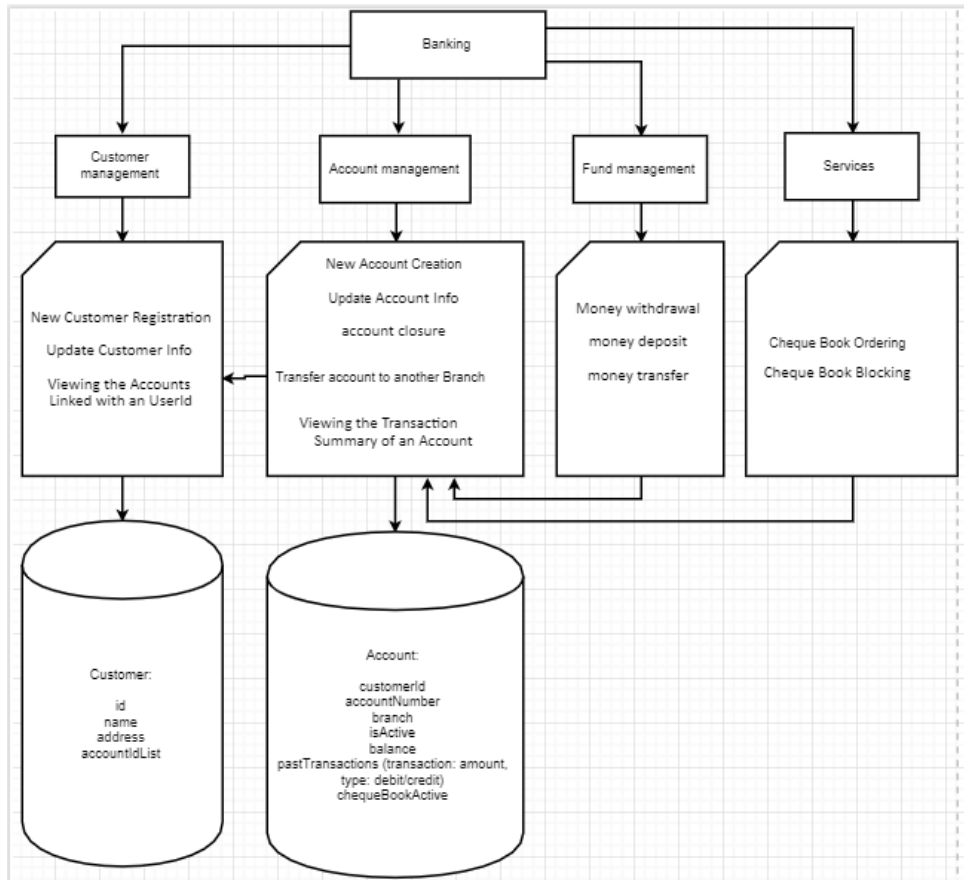e. Zuul: 8002
f. Eureka-server: 8761
g. Config-server: 8888

How to turn on each project

Eureka server should be turned on first and then config-server and then rest of the servers

a. For eureka, zuul servers and config-server
   Go to the project and run "mvn spring-boot:run"
b. For customer-management, account-management, fund-management, services:
   Go to project folder and open command prompt there. Type the following commands:
   "mvn clean install"
   "java -jar target\<name of project>-0.0.1-SNAPSHOT.jar"

Communication summary

All communications are through Zuul API gateway which uses Eureka to discover different services

API Endpoints
(All APIs that require data to be sent should be hit with data-type as application/json)

Customer-management

Get all customers

Type: GET

http://localhost:8002/customer-management/customer

Get customer using id

Type: GET with id in URL

http://localhost:8002/customer-management/customer/6

New customer registration

Type: POST with content as application/json

http://localhost:8002/customer-management/customer

{"id":"","customerName":"mahesh","address":"abc","listOfAccounts":[1]}

Update customer

Type: PUT with id in URL

http://localhost:8002/customer-management/customer/6

{"id":"","customerName":"mahesh","address":"abc","listOfAccounts":[1,2]}

Get customer's accounts

Type: GET with id in URL

http://localhost:8002/customer-management/customer/accounts/6

account-management

Get all accounts

Type: GET

http://localhost:8002/account-managementaccount

Get unique account

Type: GET with id in URL

http://localhost:8002/account-managementaccount/0

Add new account

Type: POST

http://localhost:8002/account-managementaccount

{"id":1,"customerId":0,"branch":"keshopur","balance":50.0,"pastTransactions":[{"amount":20.0,"transactionType":"CREDIT"},{"amount":20.0,"transactionType":"CREDIT"}],"chequeBookActive":false,"accountActive":false ," chequeBookActive":false}

Update account info

Type: PUT

http://localhost:8002/account-managementaccount/1

{"id":1,"customerId":0,"branch":"mandi","balance":150.0,"pastTransactions":[{"amount":210.0,"transactionType":"DEBIT"},{"amount":20.0,"transactionType":"CREDIT"}],"chequeBookActive":true,"accountActive":true ," chequeBookActive":false}

Deactivate account

Type: PUT with id in URL

http://localhost:8002/account-managementaccount/deactivate/1

All transaction of 1 account

Type: GET with id in url

http://localhost:8002/account-managementaccount/transactions/1

Change account branch

Type: PUT with id in url

http://localhost:8002/account-managementaccount/transfer/1

{"newBranch":"new new"}

Fund-management

Money withdrawal

Type: PUT with id in url

http://localhost:8002/fund-management/account/transaction/2

{"amount":220.0,"transactionType":"DEBIT"}

Money deposit

Type: PUT with id in url

http://localhost:8002/fund-management/account/transaction/2

{"amount":220.0,"transactionType":"CREDIT"}

Money transfer

http://localhost:8002/fund-management/account/transfer

Type: PUT

{"senderAccountId":1,"receiverAccountId":3,"amount":100}

Services

Cheque book order

http://localhost:8002/services/account/order/chequebook/3

Type: PUT with id in URL

Cheque book block

http://localhost:8002/services/account/block/chequebook/2

Type: PUT with id in URL