**Microservices HandsOn**

**Creating Microservices for account and loan**

**Objective**

**Create two microservices for a bank. One microservice for handing accounts and one for handling loans.**

**Account Microservice**

**Project Codes**

**1) AccountApplication.java**

**Folder :** **account/src/main/java/com/cognizant/account/AccountApplication.java**

**Code:**

package com.cognizant.account;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class AccountApplication {

public static void main(String[] args) {

SpringApplication.run(AccountApplication.class, args);

}

}

**2) AccountController.java**

**Folder : account/src/main/java/com/cognizant/account/AccountController.java**

**Code:**

package com.cognizant.account;

import org.springframework.web.bind.annotation.\*;

@RestController

@RequestMapping("/accounts")

public class AccountController {

@GetMapping("/{accountNumber}")

public Account getAccountDetails(@PathVariable String accountNumber) {

return new Account(accountNumber, "Savings", 234342.42);

}

// Static inner class or move it to a separate file

static class Account {

private String accountNumber;

private String type;

private double balance;

public Account(String accountNumber, String type, double balance) {

this.accountNumber = accountNumber;

this.type = type;

this.balance = balance;

}

public String getAccountNumber() {

return accountNumber;

}

public void setAccountNumber(String accountNumber) {

this.accountNumber = accountNumber;

}

public String getType() {

return type;

}

public void setType(String type) {

this.type = type;

}

public double getBalance() {

return balance;

}

public void setBalance(double balance) {

this.balance = balance;

}

}

}

**3) application.properties**

**Folder : account/src/main/resources/application.properties**

**Code:**

spring.application.name=account

server.port=8080

**4) AccountApplicationTests.java**

**Folder : account/src/test/java/com/cognizant/account/AccountApplicationTests.java**

**Code:**

package com.cognizant.account;

import org.junit.jupiter.api.Test;

import org.springframework.boot.test.context.SpringBootTest;

@SpringBootTest

class AccountApplicationTests {

@Test

void contextLoads() {

}

}

**5) pom.xml**

**Folder : account/pom.xml**

**Code:**

<?xml version="1.0" encoding="UTF-8"?>

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<parent>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-parent</artifactId>

<version>3.5.3</version>

<relativePath/> <!-- lookup parent from repository -->

</parent>

<groupId>com.cognizant</groupId>

<artifactId>account</artifactId>

<version>0.0.1-SNAPSHOT</version>

<name>account</name>

<description>account</description>

<url/>

<licenses>

<license/>

</licenses>

<developers>

<developer/>

</developers>

<scm>

<connection/>

<developerConnection/>

<tag/>

<url/>

</scm>

<properties>

<java.version>17</java.version>

</properties>

<dependencies>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-web</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-devtools</artifactId>

<scope>runtime</scope>

<optional>true</optional>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-test</artifactId>

<scope>test</scope>

</dependency>

</dependencies>

<build>

<plugins>

<plugin>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-maven-plugin</artifactId>

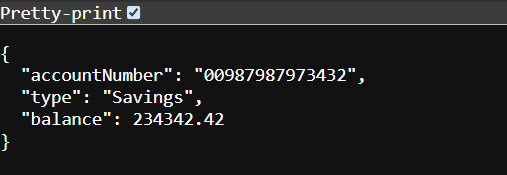
</plugin>

</plugins>

</build>

</project>

**Output**



**Loan Microservice**

**1) LoanApplication.java**

**Folder : loan/src/main/java/com/cognizant/loan/LoanApplication.java**

**Code:**

package com.cognizant.loan;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class LoanApplication {

public static void main(String[] args) {

SpringApplication.run(LoanApplication.class, args);

}

}

**2) LoanController.java**

**Folder : loan/src/main/java/com/cognizant/loan/LoanController.java**

**Code:**

package com.cognizant.loan;

import org.springframework.web.bind.annotation.GetMapping;

import org.springframework.web.bind.annotation.PathVariable;

import org.springframework.web.bind.annotation.RequestMapping;

import org.springframework.web.bind.annotation.RestController;

@RestController

@RequestMapping("/loans")

public class LoanController {

@GetMapping("/{number}")

public Loan getLoanDetails(@PathVariable String number) {

return new Loan(number, "car", 500000.0, 3288.0, 15);

}

}

class Loan {

private String number;

private String type;

private double loan;

private double emi;

private int tenure;

public Loan(String number, String type, double loan, double emi, int tenure) {

this.number = number;

this.type = type;

this.loan = loan;

this.emi = emi;

this.tenure = tenure;

}

public String getNumber() {

return number;

}

public void setNumber(String number) {

this.number = number;

}

public String getType() {

return type;

}

public void setType(String type) {

this.type = type;

}

public double getLoan() {

return loan;

}

public void setLoan(double loan) {

this.loan = loan;

}

public double getEmi() {

return emi;

}

public void setEmi(double emi) {

this.emi = emi;

}

public int getTenure() {

return tenure;

}

public void setTenure(int tenure) {

this.tenure = tenure;

}

}

**3) application.properties**

**Folder : loan/src/main/resources/application.properties**

**Code:**

spring.application.name=loan

server.port=8081

**4) LoanApplicationTest.java**

**Folder : loan/src/test/java/com/cognizant/loan/LoanApplicationTests.java**

**Code:**

package com.cognizant.loan;

import org.junit.jupiter.api.Test;

import org.springframework.boot.test.context.SpringBootTest;

@SpringBootTest

class LoanApplicationTests {

@Test

void contextLoads() {

}

}

**5) pom.xml**

**Folder : loan/pom.xml**

**Code:**

<?xml version="1.0" encoding="UTF-8"?>

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<parent>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-parent</artifactId>

<version>3.5.3</version>

<relativePath/> <!-- lookup parent from repository -->

</parent>

<groupId>com.cognizant</groupId>

<artifactId>loan</artifactId>

<version>0.0.1-SNAPSHOT</version>

<name>loan</name>

<description>loan</description>

<url/>

<licenses>

<license/>

</licenses>

<developers>

<developer/>

</developers>

<scm>

<connection/>

<developerConnection/>

<tag/>

<url/>

</scm>

<properties>

<java.version>17</java.version>

</properties>

<dependencies>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-web</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-devtools</artifactId>

<scope>runtime</scope>

<optional>true</optional>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-test</artifactId>

<scope>test</scope>

</dependency>

</dependencies>

<build>

<plugins>

<plugin>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-maven-plugin</artifactId>

</plugin>

</plugins>

</build>

</project>

**Outputs**

