# **WEEK - 5 Microservices**

**Creating Microservices for account and loan**

**CODE:**

**AccountApplication.java:**

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);

}

}

**AccountController.java:**

package com.cognizant.account.controller;

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

@RestController

@RequestMapping("/accounts")

public class AccountController {

@GetMapping("/{number}")

public Account getAccount(@PathVariable String number) {

return new Account(number, "savings", 234343);

}

static class Account {

public String number;

public String type;

public double balance;

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

this.number = number;

this.type = type;

this.balance = balance;

}

}

}

**LoanApplication.java:**

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);

}

}

**LoanController.java:**

package com.cognizant.loan.controller;

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

@RestController

@RequestMapping("/loans")

public class LoanController {

@GetMapping("/{number}")

public Loan getLoan(@PathVariable String number) {

return new Loan(number, "car", 400000, 3258, 18);

}

static class Loan {

public String number;

public String type;

public double loan;

public int emi;

public int tenure;

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

this.number = number;

this.type = type;

this.loan = loan;

this.emi = emi;

this.tenure = tenure;

}

}

}

**Application.properties:**

spring.application.name=loan

server.port=8081

**BankController.java:**

package com.cognizant.bankfrontend.controller;

import com.cognizant.bankfrontend.model.Account;

import com.cognizant.bankfrontend.model.Loan;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.stereotype.Controller;

import org.springframework.ui.Model;

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

import org.springframework.web.client.RestTemplate;

@Controller

public class BankController {

@Autowired

private RestTemplate restTemplate;

@GetMapping("/")

public String showForm() {

return "search"; // Loads search.html from templates

}

@PostMapping("/details")

public String getDetails(@RequestParam String accountNumber, Model model) {

// Call Account Service

Account account = restTemplate.getForObject(

"http://localhost:8080/accounts/" + accountNumber, Account.class);

// Call Loan Service

Loan loan = restTemplate.getForObject(

"http://localhost:8081/loans/" + accountNumber, Loan.class);

// Add responses to model

model.addAttribute("account", account);

model.addAttribute("loan", loan);

return "details"; // Loads details.html from templates

}

}

**Account.java:**

package com.cognizant.bankfrontend.model;

public class Account {

private String number;

private String type;

private double balance;

// Getters & Setters

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 getBalance() { return balance; }

public void setBalance(double balance) { this.balance = balance; }

}

**Loan.java:**

package com.cognizant.bankfrontend.model;

public class Loan {

private String number;

private String type;

private double loan;

private int emi;

private int tenure;

// Getters & Setters

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 int getEmi() { return emi; }

public void setEmi(int emi) { this.emi = emi; }

public int getTenure() { return tenure; }

public void setTenure(int tenure) { this.tenure = tenure; }

}

**BankFrontendApplication.java:**

package com.cognizant.bankfrontend;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.boot.web.client.RestTemplateBuilder;

import org.springframework.context.annotation.Bean;

import org.springframework.web.client.RestTemplate;

@SpringBootApplication

public class BankFrontendApplication {

public static void main(String[] args) {

SpringApplication.*run*(BankFrontendApplication.class, args);

}

@Bean

public RestTemplate restTemplate(RestTemplateBuilder builder) {

return builder.build(); // <-- This is the part you may have missed earlier

}

}

**Search.html:**

<!DOCTYPE html>

<html xmlns:th="http://www.thymeleaf.org">

<head>

<title>Bank Account Search</title>

</head>

<body>

<h2>Enter Account Number</h2>

<form action="/details" method="post">

<input type="text" name="accountNumber" placeholder="Account number" required>

<button type="submit">Get Details</button>

</form>

</body>

</html>

**Details.html:**

<!DOCTYPE html>

<html xmlns:th="http://www.thymeleaf.org">

<head>

<title>Account and Loan Details</title>

</head>

<body>

<h2>Account Details</h2>

<p><strong>Number:</strong> <span th:text="${account.number}"></span></p>

<p><strong>Type:</strong> <span th:text="${account.type}"></span></p>

<p><strong>Balance:</strong> ₹<span th:text="${account.balance}"></span></p>

<h2>Loan Details</h2>

<p><strong>Number:</strong> <span th:text="${loan.number}"></span></p>

<p><strong>Type:</strong> <span th:text="${loan.type}"></span></p>

<p><strong>Loan Amount:</strong> ₹<span th:text="${loan.loan}"></span></p>

<p><strong>EMI:</strong> ₹<span th:text="${loan.emi}"></span></p>

<p><strong>Tenure:</strong> <span th:text="${loan.tenure}"></span> months</p>

</body>

</html>

**Application.properties:**

spring.application.name=bank-frontend

server.port=8082

**Outputs:**























