

Creating Microservices for Account and Loan

Objective:

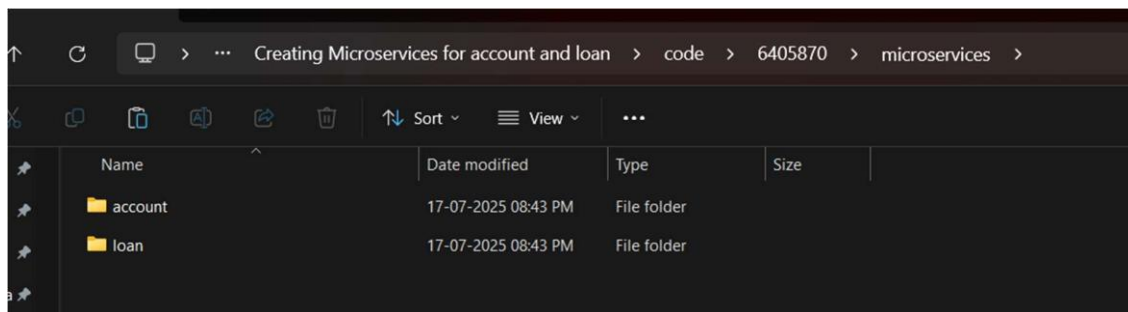
To create two separate microservices using **Spring Boot**:

- One for **Account**
- One for **Loan**

Each microservice will have its own Maven project and will return dummy data using a REST API. No database is used.

Project Setup:

- Created a folder structure:



- Used start.spring.io to generate two Spring Boot projects:
 - **account**
 - **loan**
- Selected dependencies:
 - Spring Web
 - Spring Boot DevTools
- Built each project using:
- mvn clean package

1. Account Microservice

AccountController Code:

```
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("00987987973432", "savings", 234343);
}

static class Account {
    public String number;
    public String type;
    public double balance;

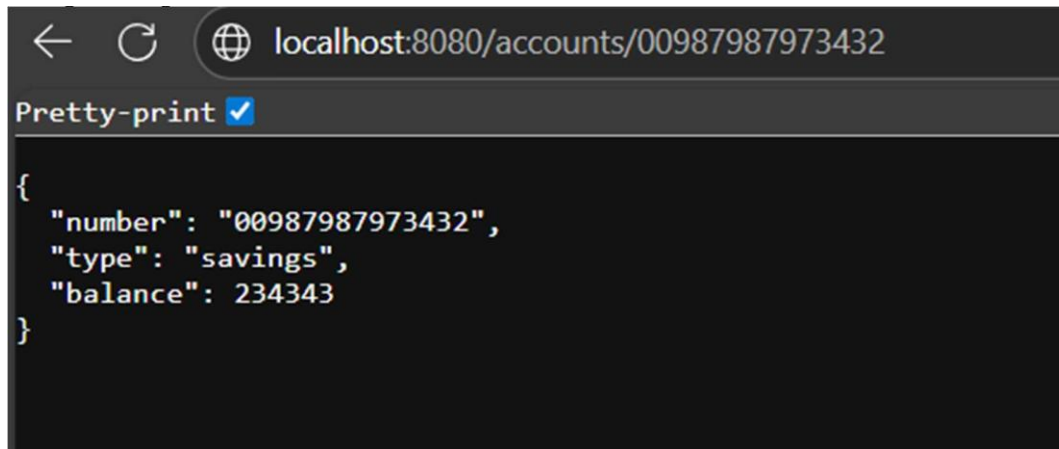
    public Account(String number, String type, double balance) {
        this.number = number;
        this.type = type;
        this.balance = balance;
    }
}
}

```

Tested URL:

<http://localhost:8080/accounts/00987987973432>

Sample Output:



2. Loan Microservice

Port Change:

In application.properties file:

`server.port=8081`

LoanController Code:

```
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("H00987987972342", "car", 400000, 3258, 18);
    }

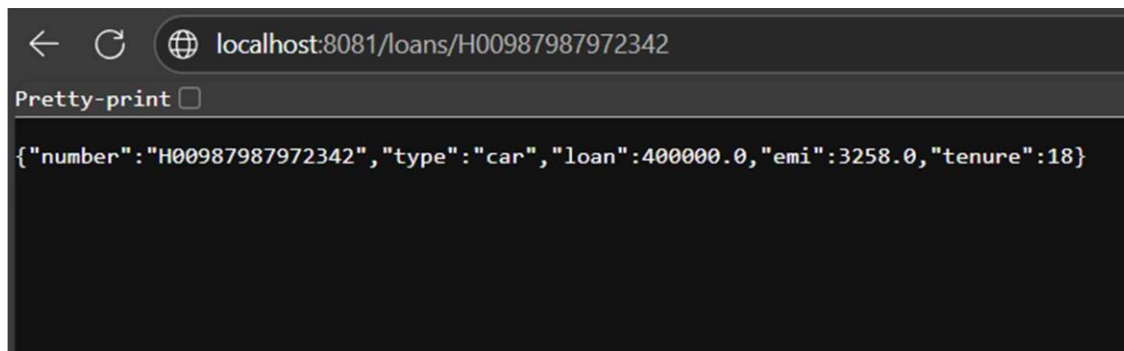
    static class Loan {
        public String number;
        public String type;
        public double loan;
        public double emi;
        public int tenure;

        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;
        }
    }
}
```

Tested URL:

<http://localhost:8081/loans/H00987987972342>

Sample Output:



Conclusion:

- Created two working microservices.
- Used GET APIs to return sample data.
- Handled port conflict using application.properties.
- Successfully tested both services on different ports.

Console Output Screenshots:

```
LoanApplication [Java Application] C:\Users\chari.p2\pools\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.21.0.7.v20230502-0916\jre\bin\java.exe (17-Jul-2025, 8:14:19 pm elapsed: 0:04:07) [pid: 22964]

:: Spring Boot :: (v3.5.3)

2025-07-17T20:14:20.471+05:30 INFO 22964 --- [loan] [ restartedMain] com.cognizant.loan.LoanApplication : Starting LoanApplication using Java 21.0.7 with PID 22964 (D:\6405870\
2025-07-17T20:14:20.475+05:30 INFO 22964 --- [loan] [ restartedMain] com.cognizant.loan.LoanApplication : No active profile set, falling back to 1 default profile: "default"
2025-07-17T20:14:20.526+05:30 INFO 22964 --- [loan] [ restartedMain] e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.devtools.add-properties'
2025-07-17T20:14:20.526+05:30 INFO 22964 --- [loan] [ restartedMain] e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider setting the 'logging.level.we
2025-07-17T20:14:21.511+05:30 INFO 22964 --- [loan] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8081 (http)
2025-07-17T20:14:21.527+05:30 INFO 22964 --- [loan] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-17T20:14:21.528+05:30 INFO 22964 --- [loan] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42]
2025-07-17T20:14:21.562+05:30 INFO 22964 --- [loan] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2025-07-17T20:14:21.564+05:30 INFO 22964 --- [loan] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1036 ms
2025-07-17T20:14:21.905+05:30 WARN 22964 --- [loan] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Unable to start LiveReload server
2025-07-17T20:14:21.944+05:30 INFO 22964 --- [loan] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8081 (http) with context path '/'
2025-07-17T20:14:21.957+05:30 INFO 22964 --- [loan] [ restartedMain] com.cognizant.loan.LoanApplication : Started LoanApplication in 1.869 seconds (process running for 2.258)
2025-07-17T20:14:35.638+05:30 INFO 22964 --- [loan] [nio-8081-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring DispatcherServlet 'dispatcherServlet'
2025-07-17T20:14:35.639+05:30 INFO 22964 --- [loan] [nio-8081-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2025-07-17T20:14:35.639+05:30 INFO 22964 --- [loan] [nio-8081-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 0 ms
```

```
AccountApplication [Java Application] C:\Users\chari.p2\pools\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.21.0.7.v20230502-0916\jre\bin\java.exe (17-Jul-2025, 8:10:51 pm elapsed: 0:07:16) [pid: 23536]

:: Spring Boot :: (v3.5.3)

2025-07-17T20:10:53.952+05:30 INFO 23536 --- [account] [ restartedMain] c.cognizant.account.AccountApplication : Starting AccountApplication using Java 21.0.7 with PID 23536 (D:\6405870\
2025-07-17T20:10:53.958+05:30 INFO 23536 --- [account] [ restartedMain] c.cognizant.account.AccountApplication : No active profile set, falling back to 1 default profile: "default"
2025-07-17T20:10:54.033+05:30 INFO 23536 --- [account] [ restartedMain] e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.devtools.add-properties' t
2025-07-17T20:10:54.033+05:30 INFO 23536 --- [account] [ restartedMain] e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider setting the 'logging.level.we
2025-07-17T20:10:55.295+05:30 INFO 23536 --- [account] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2025-07-17T20:10:55.315+05:30 INFO 23536 --- [account] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-17T20:10:55.316+05:30 INFO 23536 --- [account] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42]
2025-07-17T20:10:55.352+05:30 INFO 23536 --- [account] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2025-07-17T20:10:55.352+05:30 INFO 23536 --- [account] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1318 ms
2025-07-17T20:10:55.824+05:30 INFO 23536 --- [account] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : LiveReload server is running on port 35729
2025-07-17T20:10:55.876+05:30 INFO 23536 --- [account] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8080 (http) with context path '/'
2025-07-17T20:10:55.885+05:30 INFO 23536 --- [account] [ restartedMain] c.cognizant.account.AccountApplication : Started AccountApplication in 2.462 seconds (process running for 3.115)
2025-07-17T20:11:08.572+05:30 INFO 23536 --- [account] [nio-8080-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring DispatcherServlet 'dispatcherServlet'
2025-07-17T20:11:08.572+05:30 INFO 23536 --- [account] [nio-8080-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2025-07-17T20:11:08.574+05:30 INFO 23536 --- [account] [nio-8080-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 1 ms
```