

Week 5 : Microservices

Creating Microservices for account and loan

Service 1 :Account Service

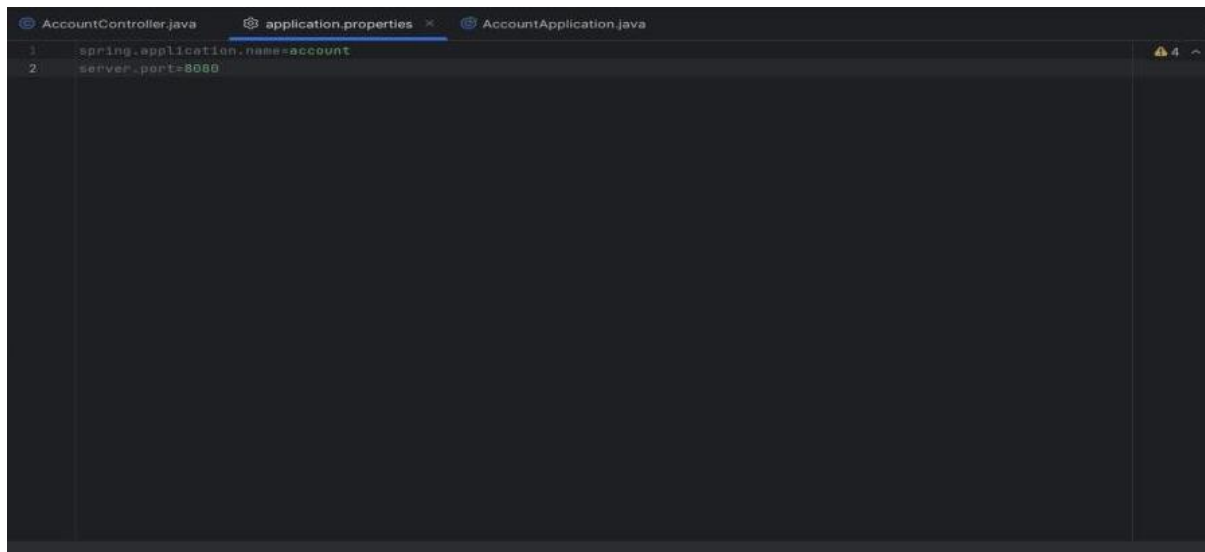
AccountApplication.java

```
AccountController.java  application.properties  AccountApplication.java x
1  package com.cognizant.account;
2
3  > import ...
4
5  @SpringBootApplication
6  7  public class AccountApplication {
7
8
9  > public static void main(String[] args) { SpringApplication.run(AccountApplication.class, args); }
10
11
12
13
14
```

Controller:

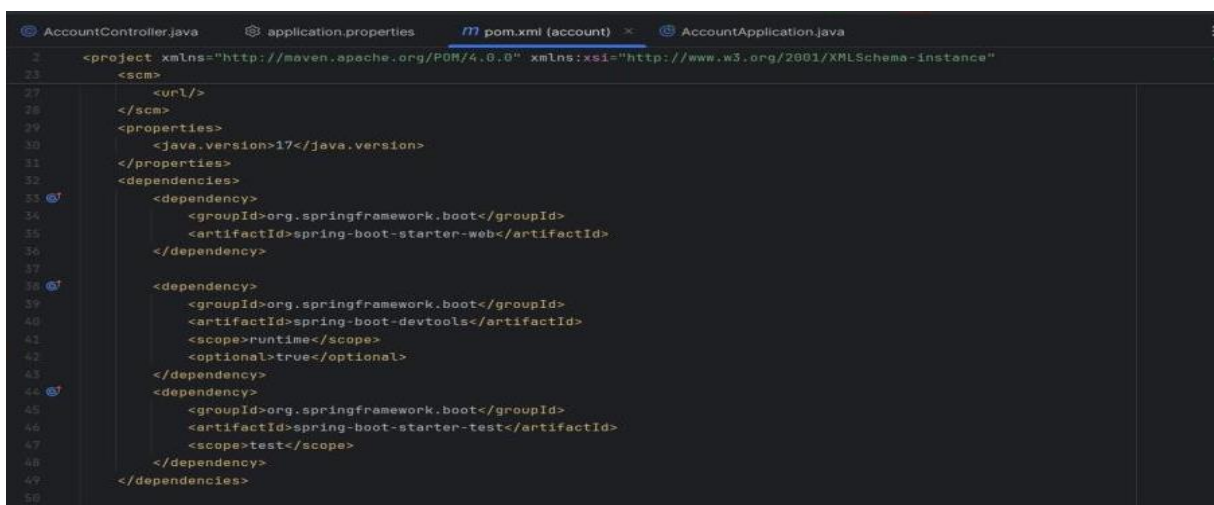
```
AccountController.java x  application.properties  AccountApplication.java
1  package com.cognizant.account.controller;
2
3
4  import org.springframework.web.bind.annotation.GetMapping;
5  import org.springframework.web.bind.annotation.PathVariable;
6  import org.springframework.web.bind.annotation.RequestMapping;
7  import org.springframework.web.bind.annotation.RestController;
8
9  import java.util.Map;
10
11  @RestController no usages
12  @RequestMapping("/accounts")
13  public class AccountController {
14
15  @GetMapping("/{number}") no usages
16  public Map<String, Object> getAccountDetails(@PathVariable String number) {
17      return Map.of(
18          k1: "number", number,
19          k2: "type", v2: "savings",
20          k3: "balance", v3: 234343
21      );
22  }
23 }
```

Application.property: port : 8080

A screenshot of an IDE showing the 'application.properties' file. The file contains two lines of text: 'spring.application.name=account' on line 1 and 'server.port=8080' on line 2. The IDE has tabs for 'AccountController.java', 'application.properties', and 'AccountApplication.java' at the top. The 'application.properties' tab is active and highlighted in blue.

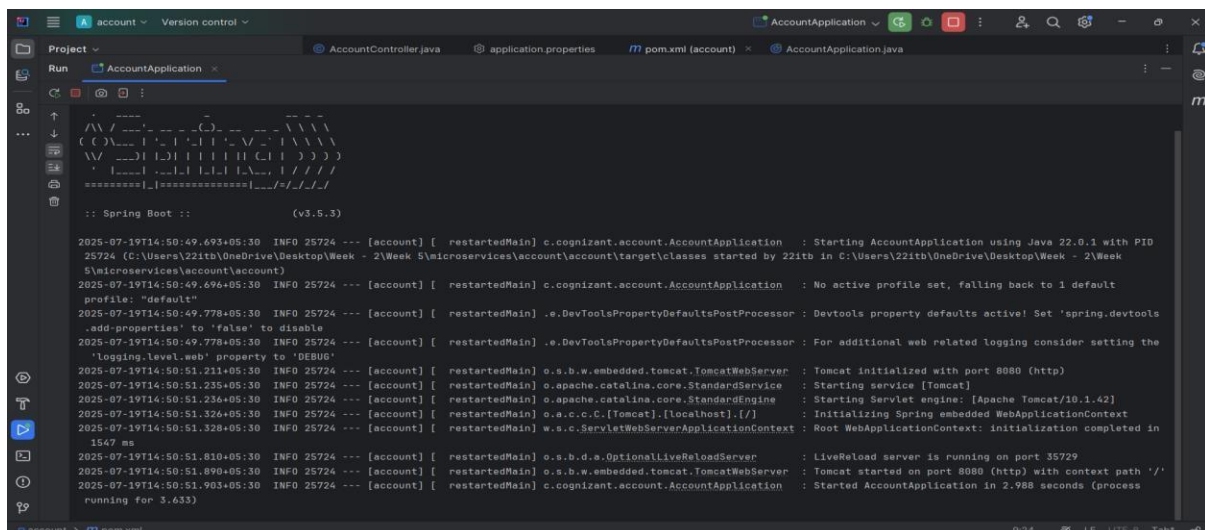
```
1 spring.application.name=account
2 server.port=8080
```

Pom.xml

A screenshot of an IDE showing the 'pom.xml' file for the 'account' project. The file contains XML configuration for a Maven project, including dependencies for Spring Boot starter-web, starter-devtools, and starter-test. The IDE has tabs for 'AccountController.java', 'application.properties', 'pom.xml (account)', and 'AccountApplication.java' at the top. The 'pom.xml (account)' tab is active and highlighted in blue.

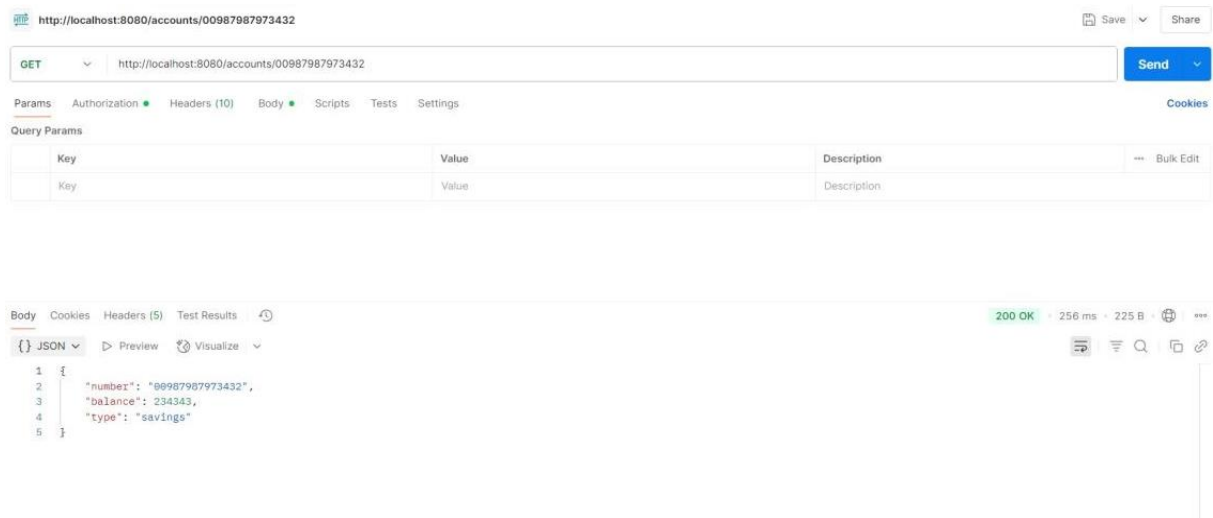
```
2 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
23 <scm>
27 </url>
28 </scm>
29 <properties>
30 <java.version>17</java.version>
31 </properties>
32 <dependencies>
33 <dependency>
34 <groupId>org.springframework.boot</groupId>
35 <artifactId>spring-boot-starter-web</artifactId>
36 </dependency>
37
38 <dependency>
39 <groupId>org.springframework.boot</groupId>
40 <artifactId>spring-boot-devtools</artifactId>
41 <scope>runtime</scope>
42 <optional>true</optional>
43 </dependency>
44 <dependency>
45 <groupId>org.springframework.boot</groupId>
46 <artifactId>spring-boot-starter-test</artifactId>
47 <scope>test</scope>
48 </dependency>
49 </dependencies>
50
```

Console Output

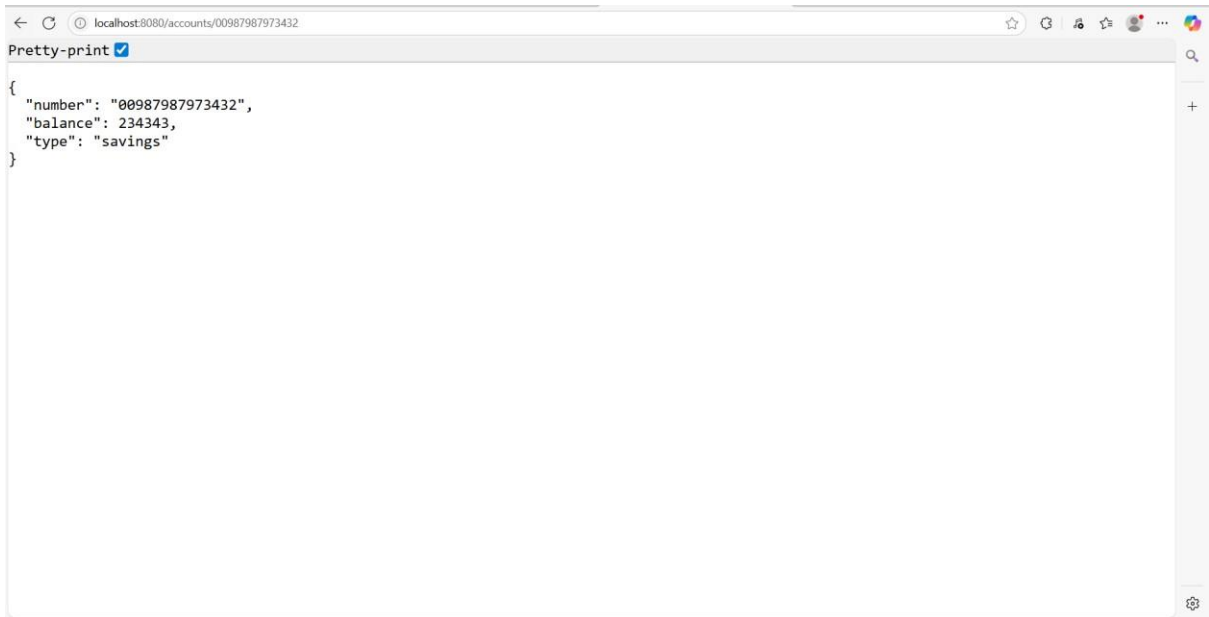
A screenshot of an IDE showing the console output of a Spring Boot application. The output displays the application starting on port 8080, initializing Tomcat, and starting the Spring Boot application. The IDE has tabs for 'AccountController.java', 'application.properties', 'pom.xml (account)', and 'AccountApplication.java' at the top. The 'AccountApplication.java' tab is active and highlighted in blue. The console output shows the following messages:

```
2025-07-19T14:50:49.693+05:30 INFO 25724 --- [account] [ restartedMain] o.cognizant.account.AccountApplication : Starting AccountApplication using Java 22.0.1 with PID
25724 (C:\Users\221tb\OneDrive\Desktop\Week - 2\Week 5\microservices\account\account\target\classes started by 221tb in C:\Users\221tb\OneDrive\Desktop\Week - 2\Week
5\microservices\account\account)
2025-07-19T14:50:49.696+05:30 INFO 25724 --- [account] [ restartedMain] o.cognizant.account.AccountApplication : No active profile set, falling back to 1 default
profile: "default"
2025-07-19T14:50:49.778+05:30 INFO 25724 --- [account] [ restartedMain] o.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.devtools
.add-properties' to 'false' to disable
2025-07-19T14:50:49.778+05:30 INFO 25724 --- [account] [ restartedMain] o.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider setting the
'logging.level.web' property to 'DEBUG'
2025-07-19T14:50:51.211+05:30 INFO 25724 --- [account] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2025-07-19T14:50:51.235+05:30 INFO 25724 --- [account] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-19T14:50:51.236+05:30 INFO 25724 --- [account] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42]
2025-07-19T14:50:51.326+05:30 INFO 25724 --- [account] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2025-07-19T14:50:51.328+05:30 INFO 25724 --- [account] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in
1547 ms
2025-07-19T14:50:51.810+05:30 INFO 25724 --- [account] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : LiveReload server is running on port 35729
2025-07-19T14:50:51.890+05:30 INFO 25724 --- [account] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8080 (http) with context path '/'
2025-07-19T14:50:51.903+05:30 INFO 25724 --- [account] [ restartedMain] o.cognizant.account.AccountApplication : Started AccountApplication in 2.988 seconds (process
running for 3.633)
```

Postman Output



Browser Output



Service 2: Loan Service

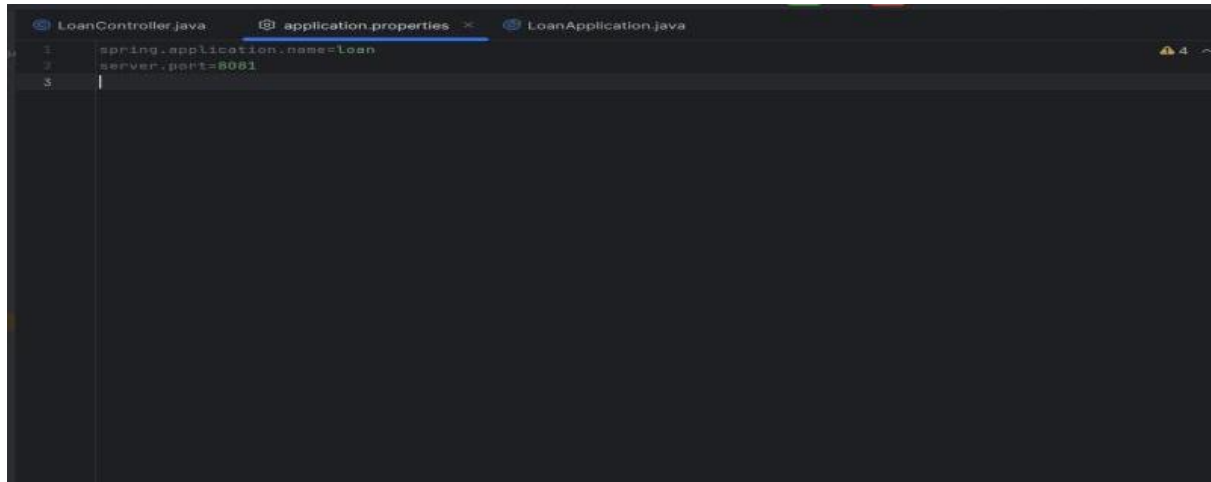
LoanApplication.java

```
LoanController.java  application.properties  LoanApplication.java x
1  package com.cognizant.loan;
2
3  import org.springframework.boot.SpringApplication;
4  import org.springframework.boot.autoconfigure.SpringBootApplication;
5
6  @SpringBootApplication
7  public class LoanApplication {
8
9      public static void main(String[] args) { SpringApplication.run(LoanApplication.class, args); }
10
11  }
12
13
14
```

Controller

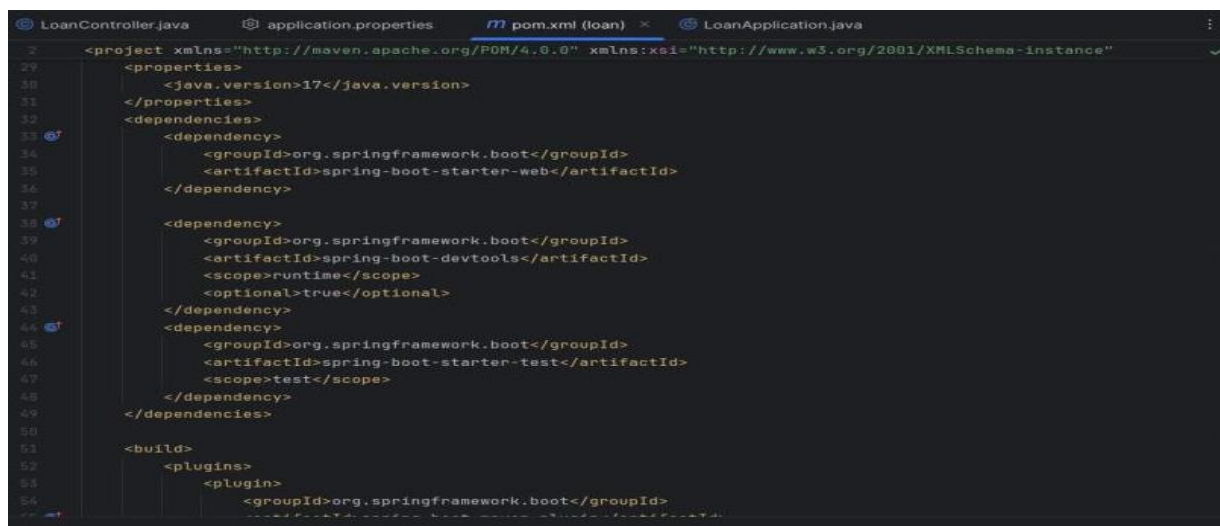
```
LoanController.java x  application.properties  LoanApplication.java
1  package com.cognizant.loan.controller;
2
3  import org.springframework.web.bind.annotation.GetMapping;
4  import org.springframework.web.bind.annotation.PathVariable;
5  import org.springframework.web.bind.annotation.RequestMapping;
6  import org.springframework.web.bind.annotation.RestController;
7
8  import java.util.Map;
9
10 @RestController no usages
11 @RequestMapping("/loans")
12 public class LoanController {
13
14     @GetMapping("/{number}") no usages
15     public Map<String, Object> getLoanDetails(@PathVariable String number) {
16         return Map.of(
17             k1: "number", number,
18             k2: "type", v2: "car",
19             k3: "loan", v3: 400000,
20             k4: "emi", v4: 3258,
21             k5: "tenure", v5: 18
22         );
23     }
24 }
```

Application.property : port = 8081



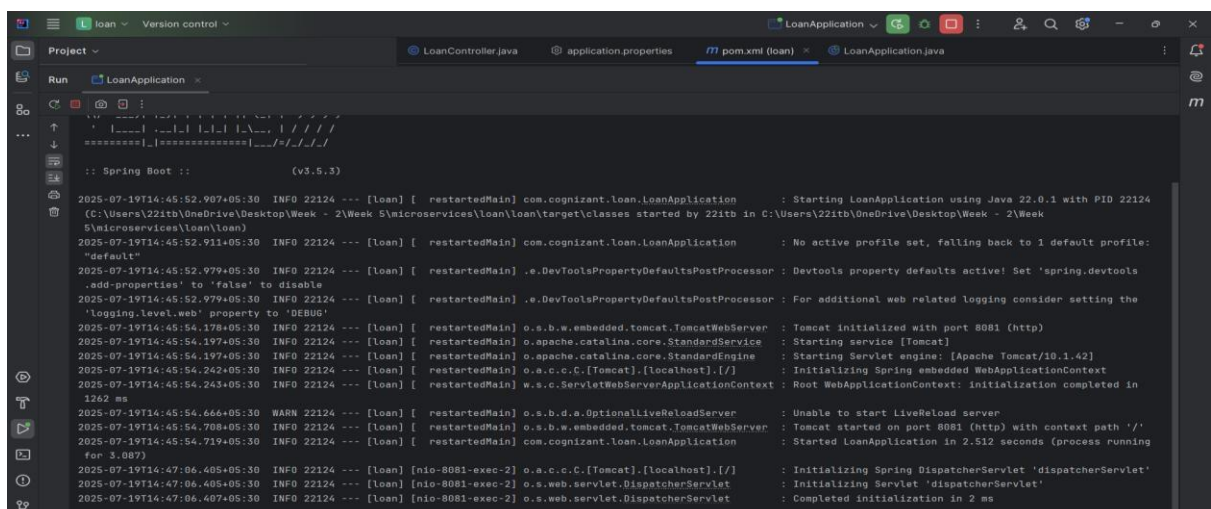
```
1  spring.application.name=loan
2  server.port=8081
```

Pom.xml



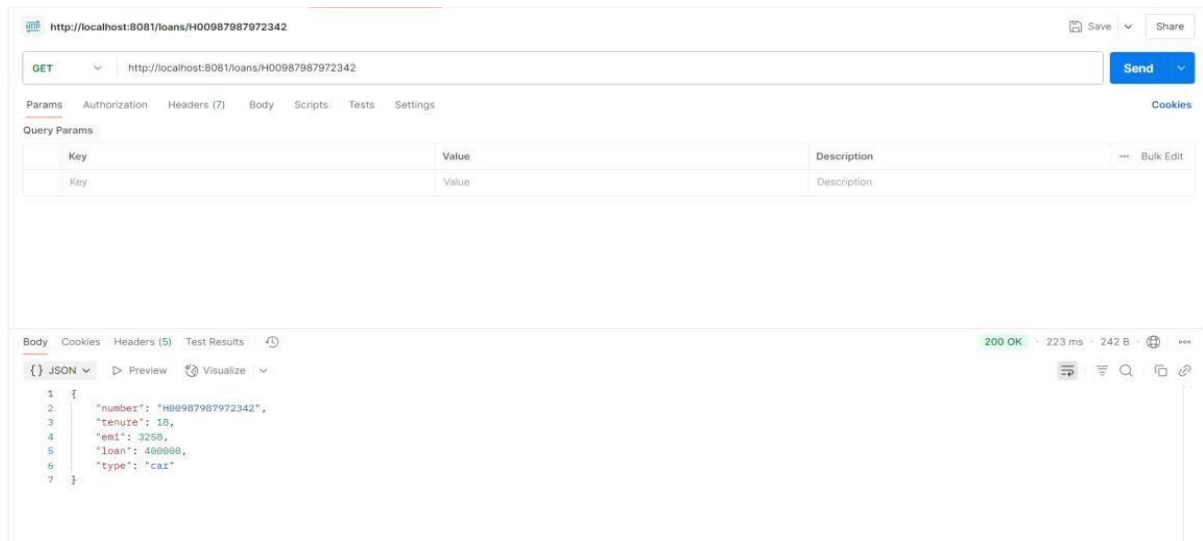
```
2  <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3
4  <properties>
5    <java.version>17</java.version>
6  </properties>
7  <dependencies>
8    <dependency>
9      <groupId>org.springframework.boot</groupId>
10     <artifactId>spring-boot-starter-web</artifactId>
11   </dependency>
12
13   <dependency>
14     <groupId>org.springframework.boot</groupId>
15     <artifactId>spring-boot-devtools</artifactId>
16     <scope>runtime</scope>
17     <optional>true</optional>
18   </dependency>
19   <dependency>
20     <groupId>org.springframework.boot</groupId>
21     <artifactId>spring-boot-starter-test</artifactId>
22     <scope>test</scope>
23   </dependency>
24 </dependencies>
25
26 <build>
27   <plugins>
28     <plugin>
29       <groupId>org.springframework.boot</groupId>
```

Console Output

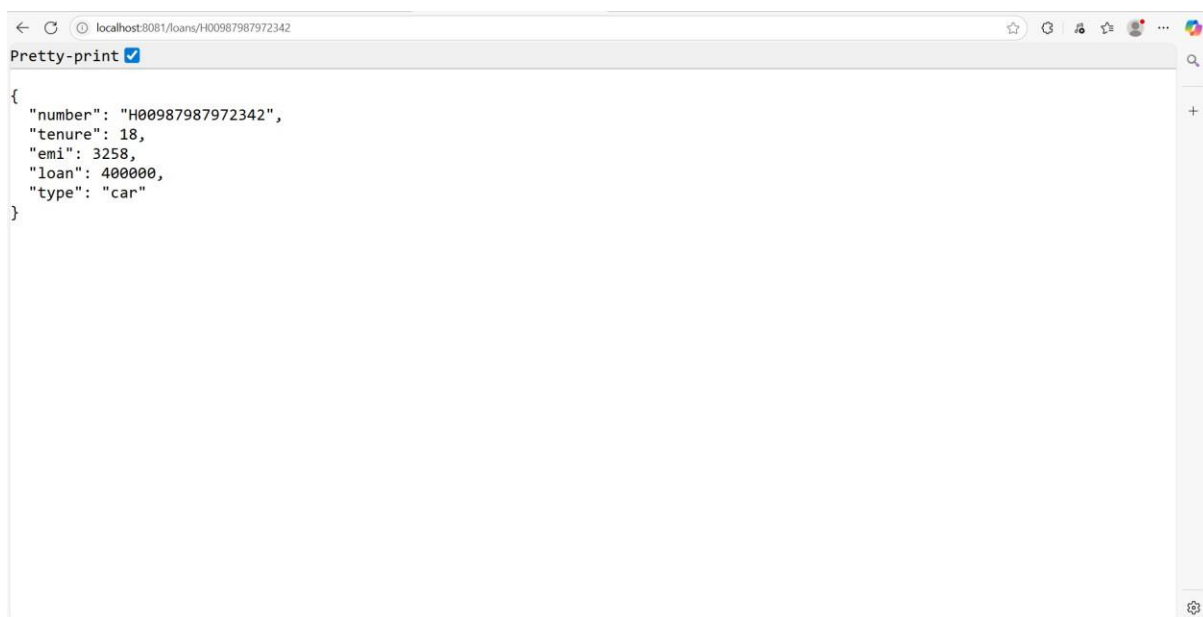


```
2025-07-19T14:45:52.907+05:30 INFO 22124 --- [loan] [ restartedMain] com.cognizant.loan.LoanApplication : Starting LoanApplication using Java 22.0.1 with PID 22124
(C:\Users\221tb\OneDrive\Desktop\Week - 2\Week 5\microservices\loan\loan\target\classes started by 221tb In C:\Users\221tb\OneDrive\Desktop\Week - 2\Week
5\microservices\loan\loan)
2025-07-19T14:45:52.911+05:30 INFO 22124 --- [loan] [ restartedMain] com.cognizant.loan.LoanApplication : No active profile set, falling back to 1 default profile:
"default"
2025-07-19T14:45:52.979+05:30 INFO 22124 --- [loan] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.devtools
.add-properties' to 'false' to disable
2025-07-19T14:45:52.979+05:30 INFO 22124 --- [loan] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider setting the
'logging.level.web' property to 'DEBUG'
2025-07-19T14:45:54.178+05:30 INFO 22124 --- [loan] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8081 (http)
2025-07-19T14:45:54.197+05:30 INFO 22124 --- [loan] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-19T14:45:54.197+05:30 INFO 22124 --- [loan] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42]
2025-07-19T14:45:54.242+05:30 INFO 22124 --- [loan] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2025-07-19T14:45:54.243+05:30 INFO 22124 --- [loan] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in
1262 ms
2025-07-19T14:45:54.666+05:30 WARN 22124 --- [loan] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Unable to start LiveReload server
2025-07-19T14:45:54.708+05:30 INFO 22124 --- [loan] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8081 (http) with context path '/'
2025-07-19T14:45:54.719+05:30 INFO 22124 --- [loan] [ restartedMain] com.cognizant.loan.LoanApplication : Started LoanApplication in 2.512 seconds (process running
for 3.087)
2025-07-19T14:47:06.405+05:30 INFO 22124 --- [loan] [nio-8081-exec-2] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring DispatcherServlet 'dispatcherServlet'
2025-07-19T14:47:06.405+05:30 INFO 22124 --- [loan] [nio-8081-exec-2] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2025-07-19T14:47:06.407+05:30 INFO 22124 --- [loan] [nio-8081-exec-2] o.s.web.servlet.DispatcherServlet : Completed initialization in 2 ms
```

Postman Output



Browser Output



Both services running under the microservice folder

