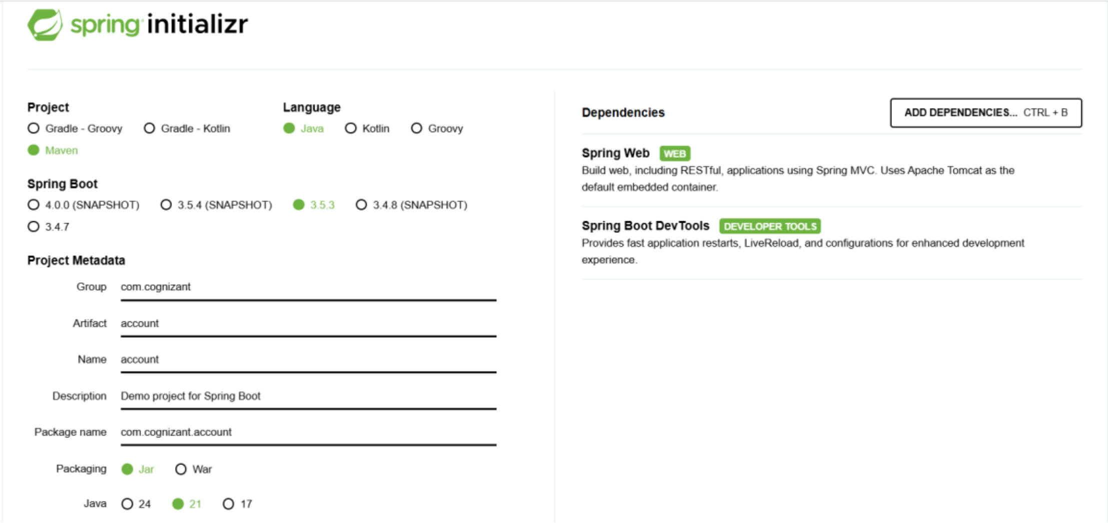
SuperSet ID:6314238 BAPANAPALLI PREM SAI SIDDHIK

Creating Microservices for account and loan

account-service



spring initializr

Project
○ Gradle - Groovy ○ Gradle - Kotlin
● Maven

Language
● Java ○ Kotlin ○ Groovy

Spring Boot
○ 4.0.0 (SNAPSHOT) ○ 3.5.4 (SNAPSHOT) ● 3.5.3 ○ 3.4.8 (SNAPSHOT)
○ 3.4.7

Project Metadata

Group: com.cognizant

Artifact: account

Name: account

Description: Demo project for Spring Boot

Package name: com.cognizant.account

Packaging: ● Jar ○ War

Java: ○ 24 ● 21 ○ 17

Dependencies

ADD DEPENDENCIES... CTRL + B

Spring Web WEB
Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.

Spring Boot DevTools DEVELOPER TOOLS
Provides fast application restarts, LiveReload, and configurations for enhanced development experience.

pom.xml

```xml
<?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>3.2.4</version>
     <relativePath/>
   </parent>

   <groupId>com.cognizant</groupId>
   <artifactId>account</artifactId>
   <version>0.0.1-SNAPSHOT</version>
   <name>account</name>
   <description>Account Microservice</description>
```

```
  <properties>
    <java.version>21</java.version>
  </properties>

  <dependencyManagement>
    <dependencies>
      <dependency>
        <groupId>org.springframework.cloud</groupId>
        <artifactId>spring-cloud-dependencies</artifactId>
        <version>2023.0.1</version>
        <type>pom</type>
        <scope>import</scope>
      </dependency>
    </dependencies>
  </dependencyManagement>

  <dependencies>
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-web</artifactId>
    </dependency>

    <dependency>
      <groupId>org.springframework.cloud</groupId>
      <artifactId>spring-cloud-starter-loadbalancer</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>
```

application.properties

```
spring.application.name=account-service
server.port=8081
```

Account.java

```
package com.cognizant.account.model;

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


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


  public String getNumber() { return number; }
  public String getType() { return type; }
  public double getBalance() { return balance; }
}
```

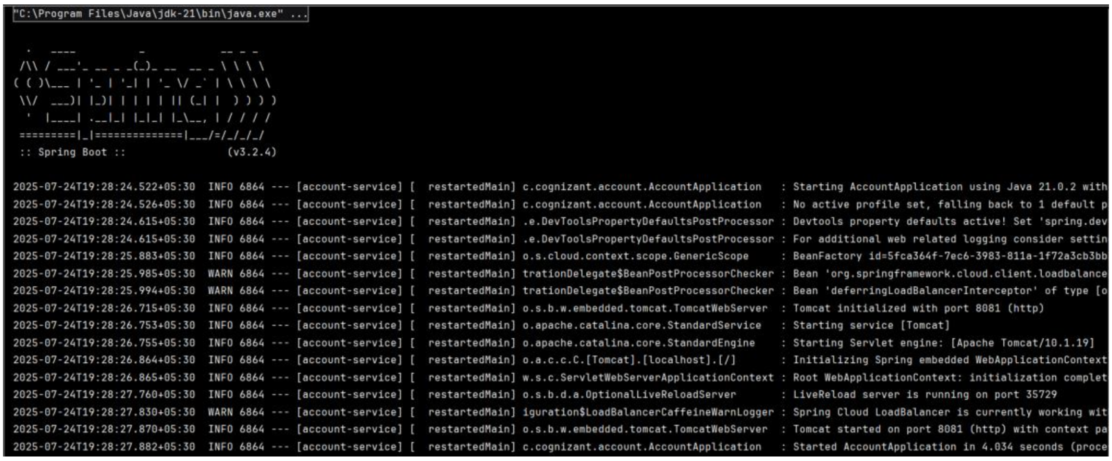
AccountController.java

```java
package com.cognizant.account.controller;

import com.cognizant.account.model.Account;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.*;
import org.springframework.web.client.RestTemplate;

@RestController
@RequestMapping("/accounts")
public class AccountController {

    @Autowired
    private RestTemplate restTemplate;

    @GetMapping("/{number}")
    public Account getAccountDetails(@PathVariable String number) {
        return new Account(number, "savings", 234343);
    }

    @GetMapping("/message")
    public String getMessage() {
        return "Hello from Account Service ⍰";
    }

    @GetMapping("/loan-message")
    public String getLoanMessageFromLoanService() {
        String url = "http://loan-service/loans/message";
        return restTemplate.getForObject(url, String.class);
    }
}
```

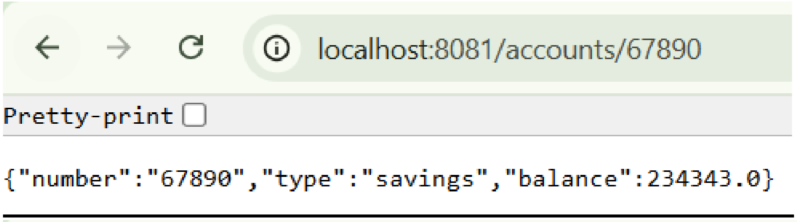
AccountApplication.java

```java
package com.cognizant.account;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.context.annotation.Bean;
import org.springframework.web.client.RestTemplate;
import org.springframework.cloud.client.loadbalancer.LoadBalanced;

@SpringBootApplication
public class AccountApplication {

    public static void main(String[] args) {
        SpringApplication.run(AccountApplication.class, args);
    }


    @Bean
    @LoadBalanced
    public RestTemplate restTemplate() {
        return new RestTemplate();
    }
}
```

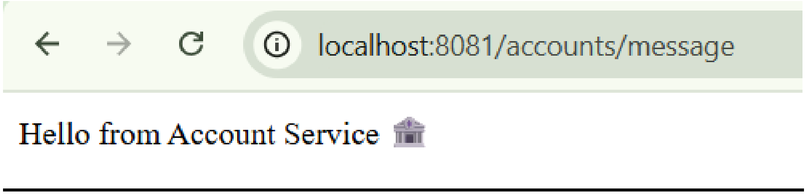
OUTPUT:



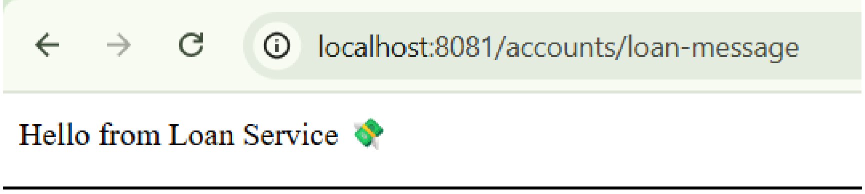
```
"C:\Program Files\Java\jdk-21\bin\java.exe" ...

  .   ____          _            __ _ _
 /\\ / ___'_ __ _ _(_)_ __  __ _ \ \ \ \
( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::                (v3.2.4)

2025-07-24T19:28:24.522+05:30  INFO 6864 --- [account-service] [  restartedMain] c.cognizant.account.AccountApplication   : Starting AccountApplication using Java 21.0.2 with
2025-07-24T19:28:24.526+05:30  INFO 6864 --- [account-service] [  restartedMain] c.cognizant.account.AccountApplication   : No active profile set, falling back to 1 default p
2025-07-24T19:28:24.615+05:30  INFO 6864 --- [account-service] [  restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.dev
2025-07-24T19:28:24.615+05:30  INFO 6864 --- [account-service] [  restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider settin
2025-07-24T19:28:25.883+05:30  INFO 6864 --- [account-service] [  restartedMain] o.s.cloud.context.scope.GenericScope     : BeanFactory id=5fca364f-7ec6-3983-811a-1f72a3cb3bb
2025-07-24T19:28:25.985+05:30  WARN 6864 --- [account-service] [  restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.cloud.client.loadbalance
2025-07-24T19:28:25.994+05:30  WARN 6864 --- [account-service] [  restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBalancerInterceptor' of type [o
2025-07-24T19:28:26.715+05:30  INFO 6864 --- [account-service] [  restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port 8081 (http)
2025-07-24T19:28:26.753+05:30  INFO 6864 --- [account-service] [  restartedMain] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2025-07-24T19:28:26.755+05:30  INFO 6864 --- [account-service] [  restartedMain] o.apache.catalina.core.StandardEngine    : Starting Servlet engine: [Apache Tomcat/10.1.19]
2025-07-24T19:28:26.864+05:30  INFO 6864 --- [account-service] [  restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded WebApplicationContext
2025-07-24T19:28:26.865+05:30  INFO 6864 --- [account-service] [  restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization complet
2025-07-24T19:28:27.760+05:30  INFO 6864 --- [account-service] [  restartedMain] o.s.b.d.a.OptionalLiveReloadServer       : LiveReload server is running on port 35729
2025-07-24T19:28:27.830+05:30  WARN 6864 --- [account-service] [  restartedMain] iguration$LoadBalancerCaffeineWarnLogger : Spring Cloud LoadBalancer is currently working wit
2025-07-24T19:28:27.870+05:30  INFO 6864 --- [account-service] [  restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port 8081 (http) with context pa
2025-07-24T19:28:27.882+05:30  INFO 6864 --- [account-service] [  restartedMain] c.cognizant.account.AccountApplication   : Started AccountApplication in 4.034 seconds (proce
```



```
{"number":"67890","type":"savings","balance":234343.0}
```



Hello from Account Service 🏦



Hello from Loan Service 💸

loan-service

pom.xml

```
<?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/>
  </parent>
  <groupId>com.cognizant</groupId>
  <artifactId>loan</artifactId>
  <version>0.0.1-SNAPSHOT</version>
  <name>loan</name>
  <description>Demo project for Spring Boot</description>
  <url/>
  <licenses>
    <license/>
  </licenses>
  <developers>
    <developer/>
  </developers>
  <scm>
    <connection/>
    <developerConnection/>
    <tag/>
    <url/>
  </scm>
  <properties>
    <java.version>21</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>
    <dependency>
      <groupId>org.springframework.cloud</groupId>
      <artifactId>spring-cloud-starter-netflix-eureka-client</artifactId>
    </dependency>

  </dependencies>
  <dependencyManagement>
    <dependencies>
      <dependency>
        <groupId>org.springframework.cloud</groupId>
        <artifactId>spring-cloud-dependencies</artifactId>
        <version>2022.0.4</version>   <!-- ✅USE THIS -->
        <type>pom</type>
        <scope>import</scope>
      </dependency>
    </dependencies>
  </dependencyManagement>
```

```
  <build>
    <plugins>
      <plugin>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-maven-plugin</artifactId>
      </plugin>
    </plugins>
  </build>
</project>
```

application.properties

```
spring.application.name=loan-service
server.port=8082
```

Loan.java

```
package com.cognizant.loan.model;
```

```
public 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 String getType() { return type; }
    public double getLoan() { return loan; }
    public double getEmi() { return emi; }
    public int getTenure() { return tenure; }
}
```

LoanController.java

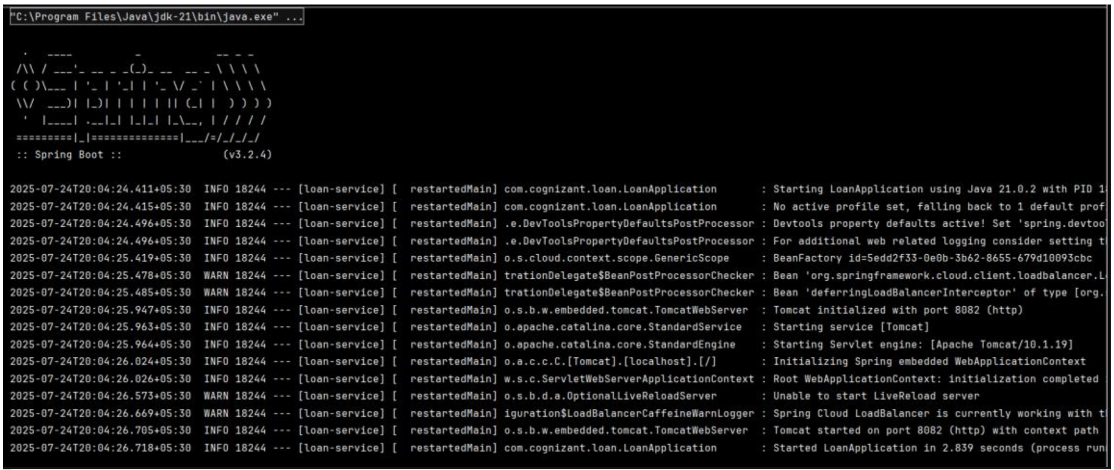
```
package com.cognizant.loan.controller;

import com.cognizant.loan.model.Loan;
import org.springframework.web.bind.annotation.*;

@RestController
@RequestMapping("/loans")
public class LoanController {

    @GetMapping("/{number}")
    public Loan getLoanDetails(@PathVariable String number) {
        return new Loan(number, "car", 400000, 3258, 18);
    }
    @GetMapping("/message")
    public String getMessage() {
        return "Hello from Loan Service ⍰";
    }

}
```

LoanApplication.java

```
package com.cognizant.loan;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
```

```java
@SpringBootApplication
public class LoanApplication {

    public static void main(String[] args) {
        SpringApplication.run(LoanApplication.class, args);
    }

}
```

OUTPUT:



```
"C:\Program Files\Java\jdk-21\bin\java.exe" ...

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 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::                (v3.2.4)

2025-07-24T20:04:24.411+05:30  INFO 18244 --- [loan-service] [  restartedMain] com.cognizant.loan.LoanApplication       : Starting LoanApplication using Java 21.0.2 with PID 1
2025-07-24T20:04:24.415+05:30  INFO 18244 --- [loan-service] [  restartedMain] com.cognizant.loan.LoanApplication       : No active profile set, falling back to 1 default prof
2025-07-24T20:04:24.496+05:30  INFO 18244 --- [loan-service] [  restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.devtoo
2025-07-24T20:04:24.496+05:30  INFO 18244 --- [loan-service] [  restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider setting t
2025-07-24T20:04:25.419+05:30  INFO 18244 --- [loan-service] [  restartedMain] o.s.cloud.context.scope.GenericScope     : BeanFactory id=5edd2f33-0e0b-3b62-8655-679d10093cbc
2025-07-24T20:04:25.478+05:30  WARN 18244 --- [loan-service] [  restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.cloud.client.loadbalancer.L
2025-07-24T20:04:25.485+05:30  WARN 18244 --- [loan-service] [  restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBalancerInterceptor' of type [org.
2025-07-24T20:04:25.947+05:30  INFO 18244 --- [loan-service] [  restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port 8082 (http)
2025-07-24T20:04:25.963+05:30  INFO 18244 --- [loan-service] [  restartedMain] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2025-07-24T20:04:25.964+05:30  INFO 18244 --- [loan-service] [  restartedMain] o.apache.catalina.core.StandardEngine    : Starting Servlet engine: [Apache Tomcat/10.1.19]
2025-07-24T20:04:26.024+05:30  INFO 18244 --- [loan-service] [  restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded WebApplicationContext
2025-07-24T20:04:26.026+05:30  INFO 18244 --- [loan-service] [  restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed
2025-07-24T20:04:26.573+05:30  WARN 18244 --- [loan-service] [  restartedMain] o.s.b.d.a.OptionalLiveReloadServer       : Unable to start LiveReload server
2025-07-24T20:04:26.669+05:30  WARN 18244 --- [loan-service] [  restartedMain] iguration$LoadBalancerCaffeineWarnLogger : Spring Cloud LoadBalancer is currently working with t
2025-07-24T20:04:26.705+05:30  INFO 18244 --- [loan-service] [  restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port 8082 (http) with context path
2025-07-24T20:04:26.718+05:30  INFO 18244 --- [loan-service] [  restartedMain] com.cognizant.loan.LoanApplication       : Started LoanApplication in 2.839 seconds (process run
```
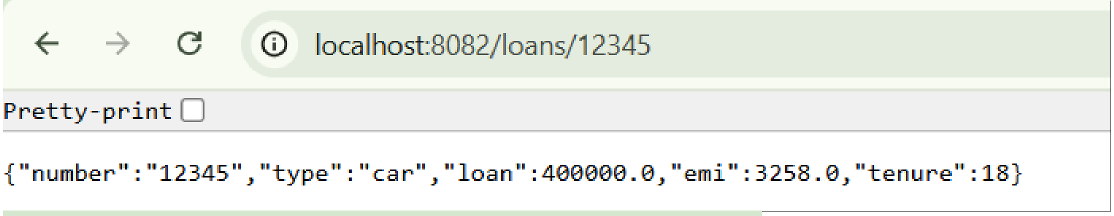
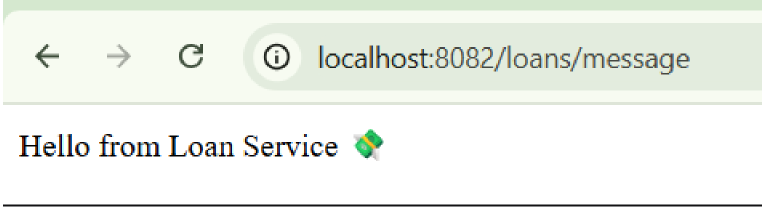



```
{"number":"12345","type":"car","loan":400000.0,"emi":3258.0,"tenure":18}
```



Hello from Loan Service 💸

api-gateway

pom.xml

```
<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
                  http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>com.cognizant</groupId>
  <artifactId>api-gateway</artifactId>
  <version>1.0.0</version>
  <packaging>jar</packaging>

  <name>API Gateway</name>


  <parent>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-parent</artifactId>
    <version>3.2.3</version>
    <relativePath/>
  </parent>


  <properties>
    <java.version>17</java.version>
    <spring-cloud.version>2023.0.1</spring-cloud.version>
  </properties>


  <dependencies>

    <dependency>
      <groupId>org.springframework.cloud</groupId>
      <artifactId>spring-cloud-starter-gateway</artifactId>
    </dependency>
    <dependency>
      <groupId>org.springframework.cloud</groupId>
      <artifactId>spring-cloud-starter-gateway</artifactId>
    </dependency>

    <dependency>
      <groupId>org.springframework.cloud</groupId>
      <artifactId>spring-cloud-starter-netflix-eureka-client</artifactId>
    </dependency>

    <dependency>
      <groupId>org.springframework.cloud</groupId>
      <artifactId>spring-cloud-starter-netflix-eureka-client</artifactId>
    </dependency>

    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-webflux</artifactId>
    </dependency>


    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-logging</artifactId>
    </dependency>

    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-actuator</artifactId>
    </dependency>
  </dependencies>

  <dependencyManagement>
    <dependencies>
      <dependency>
        <groupId>org.springframework.cloud</groupId>
        <artifactId>spring-cloud-dependencies</artifactId>
        <version>${spring-cloud.version}</version>
        <type>pom</type>
        <scope>import</scope>
      </dependency>
    </dependencies>
  </dependencyManagement>

  <build>
    <plugins>
      <plugin>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-maven-plugin</artifactId>
      </plugin>
    </plugins>
  </build>
</project>
```

application.properties

```
server.port=8085

spring.application.name=api-gateway

spring.cloud.gateway.discovery.locator.enabled=true
spring.cloud.gateway.discovery.locator.lower-case-service-id=true

eureka.client.service-url.defaultZone=http://localhost:8762/eureka/
eureka.client.fetch-registry=true
eureka.client.register-with-eureka=true
```

LoggingFilter.java

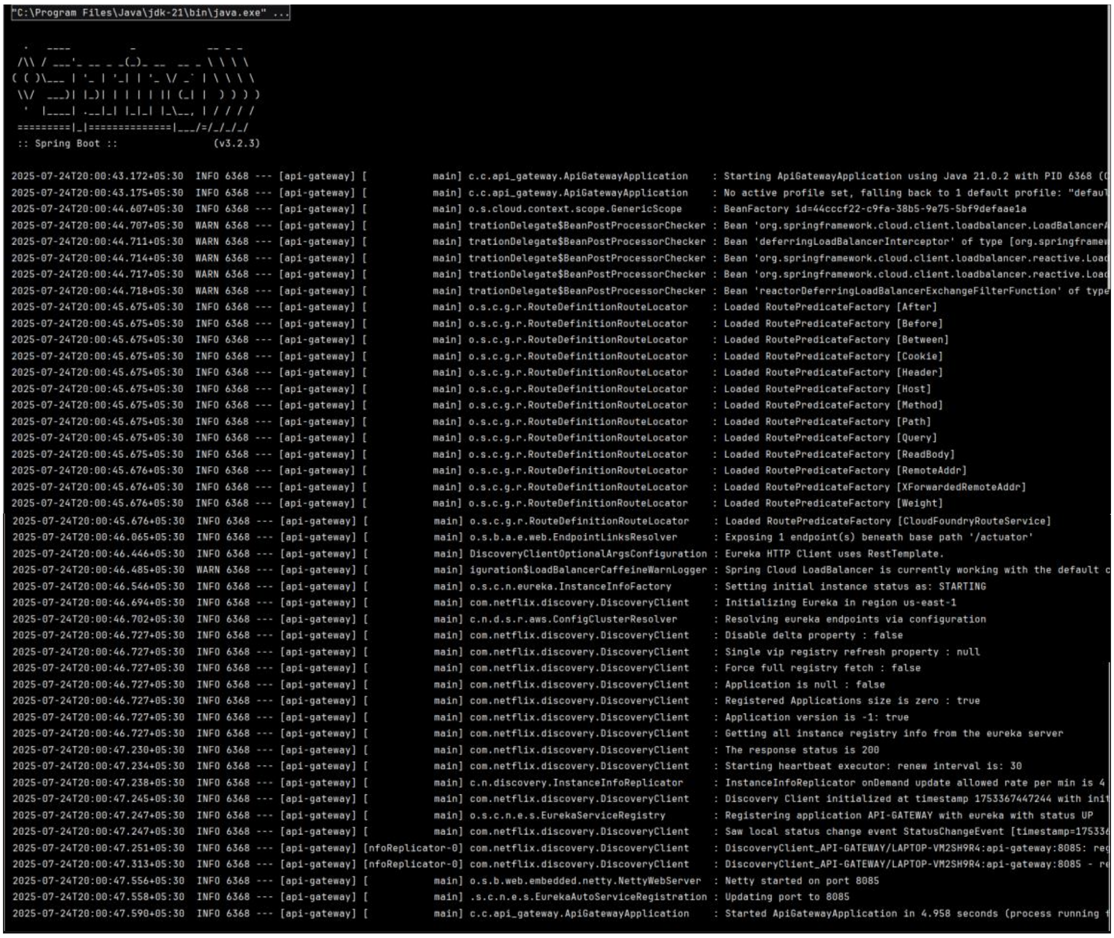
```
package com.cognizant.api_gateway.filter;

import org.slf4j.Logger;
import org.slf4j.LoggerFactory;
import org.springframework.cloud.gateway.filter.GlobalFilter;
import org.springframework.core.annotation.Order;
import org.springframework.stereotype.Component;
import org.springframework.web.server.ServerWebExchange;
import reactor.core.publisher.Mono;

@Component
```

```
@Order(-1)
public class LoggingFilter implements GlobalFilter {
   private static final Logger logger =
LoggerFactory.getLogger(LoggingFilter.class);

   @Override
   public Mono<Void> filter(ServerWebExchange exchange,
org.springframework.cloud.gateway.filter.GatewayFilterChain chain) {
       logger.info("Incoming request: {} {}",
exchange.getRequest().getMethod(), exchange.getRequest().getURI());
       return chain.filter(exchange);
   }
}
```

ApiGatewayApplication.java

```
package com.cognizant.api_gateway;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import
org.springframework.cloud.client.discovery.EnableDiscoveryClient;

@SpringBootApplication
@EnableDiscoveryClient
public class ApiGatewayApplication {
   public static void main(String[] args) {
      SpringApplication.run(ApiGatewayApplication.class, args);
   }
}
```

OUTPUT:



```
"C:\Program Files\Java\jdk-21\bin\java.exe" ...

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( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::                (v3.2.3)

2025-07-24T20:00:43.172+05:30  INFO 6368 --- [api-gateway] [           main] c.c.api_gateway.ApiGatewayApplication    : Starting ApiGatewayApplication using Java 21.0.2 with PID 6368 (C
2025-07-24T20:00:43.175+05:30  INFO 6368 --- [api-gateway] [           main] c.c.api_gateway.ApiGatewayApplication    : No active profile set, falling back to 1 default profile: "defaul
2025-07-24T20:00:44.607+05:30  INFO 6368 --- [api-gateway] [           main] o.s.cloud.context.scope.GenericScope     : BeanFactory id=44cccf22-c9fa-38b5-9e75-5bf9defaae1a
2025-07-24T20:00:44.707+05:30  WARN 6368 --- [api-gateway] [           main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.cloud.client.loadbalancer.LoadBalancerA
2025-07-24T20:00:44.711+05:30  WARN 6368 --- [api-gateway] [           main] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBalancerInterceptor' of type [org.springframew
2025-07-24T20:00:44.714+05:30  WARN 6368 --- [api-gateway] [           main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.cloud.client.loadbalancer.reactive.Load
2025-07-24T20:00:44.717+05:30  WARN 6368 --- [api-gateway] [           main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.cloud.client.loadbalancer.reactive.Load
2025-07-24T20:00:44.718+05:30  WARN 6368 --- [api-gateway] [           main] trationDelegate$BeanPostProcessorChecker : Bean 'reactorDeferringLoadBalancerExchangeFilterFunction' of type
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [After]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Before]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Between]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Cookie]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Header]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Host]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Method]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Path]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Query]
2025-07-24T20:00:45.675+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [ReadBody]
2025-07-24T20:00:45.676+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [RemoteAddr]
2025-07-24T20:00:45.676+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [XForwardedRemoteAddr]
2025-07-24T20:00:45.676+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [Weight]
2025-07-24T20:00:45.676+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.g.r.RouteDefinitionRouteLocator    : Loaded RoutePredicateFactory [CloudFoundryRouteService]
2025-07-24T20:00:46.065+05:30  INFO 6368 --- [api-gateway] [           main] o.s.b.a.e.web.EndpointLinksResolver      : Exposing 1 endpoint(s) beneath base path '/actuator'
2025-07-24T20:00:46.446+05:30  INFO 6368 --- [api-gateway] [           main] DiscoveryClientOptionalArgsConfiguration : Eureka HTTP Client uses RestTemplate.
2025-07-24T20:00:46.485+05:30  WARN 6368 --- [api-gateway] [           main] iguration$LoadBalancerCaffeineWarnLogger : Spring Cloud LoadBalancer is currently working with the default c
2025-07-24T20:00:46.546+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.n.eureka.InstanceInfoFactory       : Setting initial instance status as: STARTING
2025-07-24T20:00:46.694+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Initializing Eureka in region us-east-1
2025-07-24T20:00:46.702+05:30  INFO 6368 --- [api-gateway] [           main] c.n.d.s.r.aws.ConfigClusterResolver      : Resolving eureka endpoints via configuration
2025-07-24T20:00:46.727+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Disable delta property : false
2025-07-24T20:00:46.727+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Single vip registry refresh property : null
2025-07-24T20:00:46.727+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Force full registry fetch : false
2025-07-24T20:00:46.727+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Application is null : false
2025-07-24T20:00:46.727+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Registered Applications size is zero : true
2025-07-24T20:00:46.727+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Application version is -1: true
2025-07-24T20:00:46.727+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Getting all instance registry info from the eureka server
2025-07-24T20:00:47.230+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : The response status is 200
2025-07-24T20:00:47.234+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Starting heartbeat executor: renew interval is: 30
2025-07-24T20:00:47.238+05:30  INFO 6368 --- [api-gateway] [           main] c.n.discovery.InstanceInfoReplicator     : InstanceInfoReplicator onDemand update allowed rate per min is 4
2025-07-24T20:00:47.245+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Discovery Client initialized at timestamp 1753367447244 with init
2025-07-24T20:00:47.247+05:30  INFO 6368 --- [api-gateway] [           main] o.s.c.n.e.s.EurekaServiceRegistry        : Registering application API-GATEWAY with eureka with status UP
2025-07-24T20:00:47.247+05:30  INFO 6368 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient    : Saw local status change event StatusChangeEvent [timestamp=175336
2025-07-24T20:00:47.251+05:30  INFO 6368 --- [api-gateway] [nfoReplicator-0] com.netflix.discovery.DiscoveryClient    : DiscoveryClient_API-GATEWAY/LAPTOP-VM2SH9R4:api-gateway:8085: reg
2025-07-24T20:00:47.313+05:30  INFO 6368 --- [api-gateway] [nfoReplicator-0] com.netflix.discovery.DiscoveryClient    : DiscoveryClient_API-GATEWAY/LAPTOP-VM2SH9R4:api-gateway:8085 - re
2025-07-24T20:00:47.556+05:30  INFO 6368 --- [api-gateway] [           main] o.s.b.web.embedded.netty.NettyWebServer  : Netty started on port 8085
2025-07-24T20:00:47.558+05:30  INFO 6368 --- [api-gateway] [           main] .s.c.n.e.s.EurekaAutoServiceRegistration : Updating port to 8085
2025-07-24T20:00:47.590+05:30  INFO 6368 --- [api-gateway] [           main] c.c.api_gateway.ApiGatewayApplication    : Started ApiGatewayApplication in 4.958 seconds (process running f
```

eureka-discovery-server

pom.xml

```
<?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>eureka-discovery-server</artifactId>
<version>0.0.1-SNAPSHOT</version>
<name>eureka-discovery-server</name>
<description>Demo project for Spring Boot</description>
<url/>
<licenses>
  <license/>
</licenses>
<developers>
  <developer/>
</developers>
<scm>
  <connection/>
  <developerConnection/>
  <tag/>
  <url/>
</scm>
<properties>
  <java.version>21</java.version>
  <spring-cloud.version>2025.0.0</spring-cloud.version>
</properties>
<dependencies>
  <dependency>
    <groupId>org.springframework.cloud</groupId>
    <artifactId>spring-cloud-starter-netflix-eureka-server</artifactId>
  </dependency>

  <dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-test</artifactId>
    <scope>test</scope>
  </dependency>
</dependencies>
<dependencyManagement>
  <dependencies>
    <dependency>
      <groupId>org.springframework.cloud</groupId>
      <artifactId>spring-cloud-dependencies</artifactId>
      <version>${spring-cloud.version}</version>
      <type>pom</type>
```

```
        <scope>import</scope>
      </dependency>
    </dependencies>
  </dependencyManagement>

  <build>
    <plugins>
      <plugin>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-maven-plugin</artifactId>
      </plugin>
    </plugins>
  </build>

</project>
```

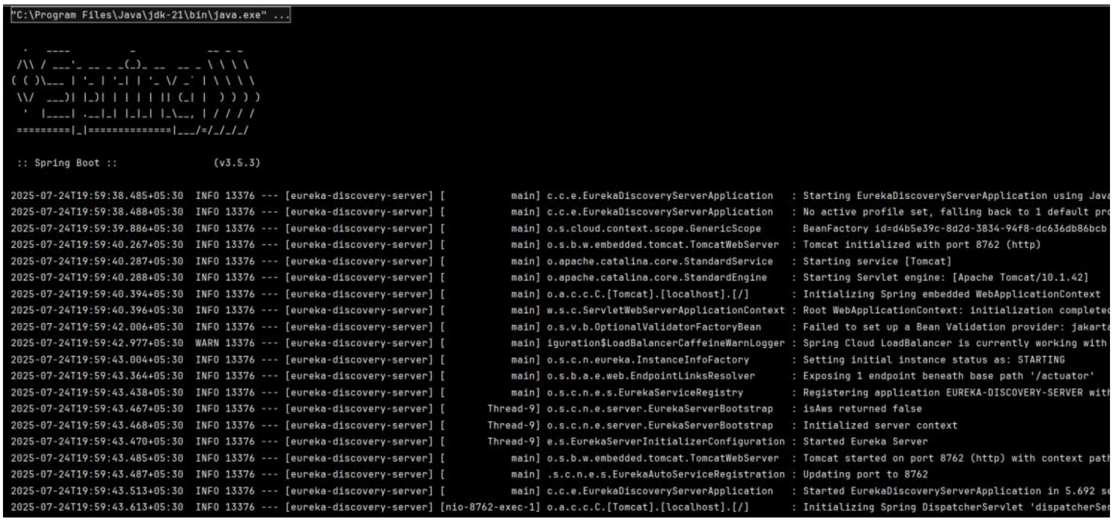
<u>EurekaDiscoveryServerApplication.java</u>

```
package com.cognizant.eureka_discovery_server;



import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import
org.springframework.cloud.netflix.eureka.server.EnableEurekaServer;

@SpringBootApplication
@EnableEurekaServer
public class EurekaDiscoveryServerApplication {
   public static void main(String[] args) {
      SpringApplication.run(EurekaDiscoveryServerApplication.class, args);
   }
}
```

application.properties

```
spring.application.name=eureka-discovery-server
server.port=8762
eureka.client.register-with-eureka=false
eureka.client.fetch-registry=false
logging.level.com.netflix.eureka=OFF
logging.level.com.netflix.discovery=OFF
```

OUTPUT



```
"C:\Program Files\Java\jdk-21\bin\java.exe" ...

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( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
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 :: Spring Boot ::                (v3.5.3)

2025-07-24T19:59:38.485+05:30  INFO 13376 --- [eureka-discovery-server] [           main] c.c.e.EurekaDiscoveryServerApplication   : Starting EurekaDiscoveryServerApplication using Java
2025-07-24T19:59:38.488+05:30  INFO 13376 --- [eureka-discovery-server] [           main] c.c.e.EurekaDiscoveryServerApplication   : No active profile set, falling back to 1 default pro
2025-07-24T19:59:39.886+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.s.cloud.context.scope.GenericScope     : BeanFactory id=d4b5e39c-8d2d-3834-94f8-dc636db86bcb
2025-07-24T19:59:40.267+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port 8762 (http)
2025-07-24T19:59:40.287+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2025-07-24T19:59:40.288+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.apache.catalina.core.StandardEngine    : Starting Servlet engine: [Apache Tomcat/10.1.42]
2025-07-24T19:59:40.394+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded WebApplicationContext
2025-07-24T19:59:40.396+05:30  INFO 13376 --- [eureka-discovery-server] [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed
2025-07-24T19:59:42.006+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.s.v.b.OptionalValidatorFactoryBean     : Failed to set up a Bean Validation provider: jakarta
2025-07-24T19:59:42.977+05:30  WARN 13376 --- [eureka-discovery-server] [           main] iguration$LoadBalancerCaffeineWarnLogger : Spring Cloud LoadBalancer is currently working with
2025-07-24T19:59:43.004+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.s.c.n.eureka.InstanceInfoFactory       : Setting initial instance status as: STARTING
2025-07-24T19:59:43.364+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.s.b.a.e.web.EndpointLinksResolver      : Exposing 1 endpoint beneath base path '/actuator'
2025-07-24T19:59:43.438+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.s.c.n.e.s.EurekaServiceRegistry        : Registering application EUREKA-DISCOVERY-SERVER with
2025-07-24T19:59:43.467+05:30  INFO 13376 --- [eureka-discovery-server] [       Thread-9] o.s.c.n.e.server.EurekaServerBootstrap   : isAws returned false
2025-07-24T19:59:43.468+05:30  INFO 13376 --- [eureka-discovery-server] [       Thread-9] o.s.c.n.e.server.EurekaServerBootstrap   : Initialized server context
2025-07-24T19:59:43.470+05:30  INFO 13376 --- [eureka-discovery-server] [       Thread-9] e.s.EurekaServerInitializerConfiguration : Started Eureka Server
2025-07-24T19:59:43.485+05:30  INFO 13376 --- [eureka-discovery-server] [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port 8762 (http) with context path
2025-07-24T19:59:43.487+05:30  INFO 13376 --- [eureka-discovery-server] [           main] .s.c.n.e.s.EurekaAutoServiceRegistration : Updating port to 8762
2025-07-24T19:59:43.513+05:30  INFO 13376 --- [eureka-discovery-server] [           main] c.c.e.EurekaDiscoveryServerApplication   : Started EurekaDiscoveryServerApplication in 5.692 se
2025-07-24T19:59:43.613+05:30  INFO 13376 --- [eureka-discovery-server] [nio-8762-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring DispatcherServlet 'dispatcherSer
```
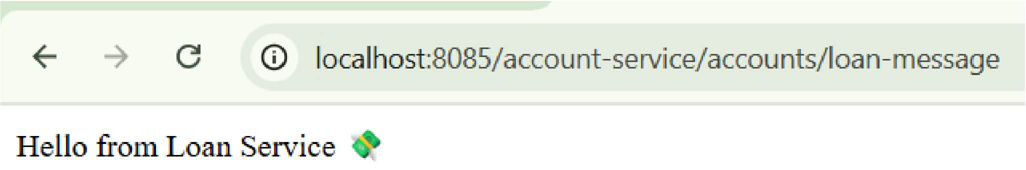
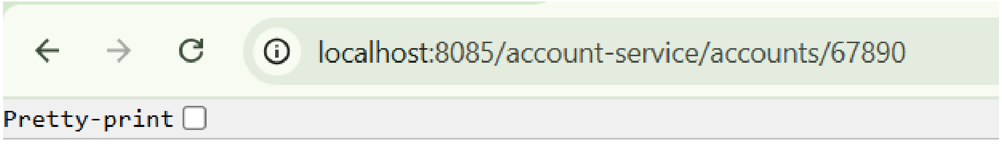



localhost:8085/account-service/accounts/loan-message

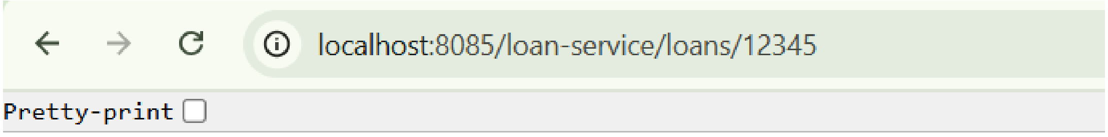
Hello from Loan Service 💸



localhost:8085/account-service/accounts/67890

Pretty-print □

```
{"number":"67890","type":"savings","balance":234343.0}
```



localhost:8085/loan-service/loans/12345

Pretty-print □

```
{"number":"12345","type":"car","loan":400000.0,"emi":3258.0,"tenure":18}
```