**Sample Hands-on Exercises on Edge Services and API Gateway with Spring Boot 3 and Spring Cloud**

**Exercise 1: Implementing Edge Services for Routing and Filtering**

**MircoservicesApplication.java**

package com.cognizant.mircoservices;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class MircoservicesApplication {

    public static void main(String[] args) {

        SpringApplication.run(MircoservicesApplication.class, args);

    }

}

**LoggingFilter.java**

package com.cognizant.mircoservices;

import org.springframework.cloud.gateway.filter.GatewayFilterChain;

import org.springframework.cloud.gateway.filter.GlobalFilter;

import org.springframework.stereotype.Component;

import org.springframework.web.server.ServerWebExchange;

import reactor.core.publisher.Mono;

@Component

public class LoggingFilter implements GlobalFilter {

@Override

public Mono<Void> filter(ServerWebExchange exchange, GatewayFilterChain chain) {

System.out.println("Request: " + exchange.getRequest().getURI());

return chain.filter(exchange);

}

}

**application.properties**

spring.application.name=mircoservices

spring.cloud.gateway.server.webflux.routes[0].id=example\_route

spring.cloud.gateway.server.webflux.routes[0].uri=https://httpbin.org spring.cloud.gateway.server.webflux.routes[0].predicates[0]=Path=/example/\*\*

spring.cloud.gateway.server.webflux.routes[0].filters[0]=RewritePath=/example/(?<segment>.\*), /$\{segment}

**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>3.5.0</version>

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

    </parent>

    <groupId>com.cognizant</groupId>

    <artifactId>mircoservices</artifactId>

    <version>0.0.1-SNAPSHOT</version>

    <name>mircoservices</name>

    <description>Demo project for Spring Boot</description>

    <url/>

    <licenses>

        <license/>

    </licenses>

    <developers>

        <developer/>

    </developers>

    <scm>

        <connection/>

        <developerConnection/>

        <tag/>

        <url/>

    </scm>

    <properties>

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

        <spring-cloud.version>2025.0.0</spring-cloud.version>

    </properties>

    <dependencies>

        <dependency>

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

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

            <scope>test</scope>

        </dependency>

        <dependency>

            <groupId>io.projectreactor</groupId>

            <artifactId>reactor-test</artifactId>

            <scope>test</scope>

        </dependency>

        <dependency>

    <groupId>org.springframework.cloud</groupId>

    <artifactId>spring-cloud-starter-loadbalancer</artifactId>

</dependency>

        <dependency>

    <groupId>org.springframework.cloud</groupId>

    <artifactId>spring-cloud-starter-gateway-server-webflux</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>

**Output:**

