Cognizant - DN 4.0 I Deep Skilling

Week-3

Exercise 1: Configuring a Basic Spring Application

XML Code:-

<project xmlns="http://maven.apache.org/POM/4.0.0" ...>

<modelVersion>4.0.0</modelVersion>

<groupId>com.example</groupId>

<artifactId>spring-basic-app</artifactId>

<version>1.0</version>

<dependencies>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.36</version> <!-- Use the latest stable version -->

</dependency>

</dependencies>

</project>

JAVA:-

package com.example;

public class HelloService {

public void sayHello() {

System.out.println("Hello, Spring!");

}

}

Exercise 2: Implementing Dependency Injection

package com.example;

public class Engine {

public void start() {

System.out.println("Engine started...");

} }

package com.example;

public class Car {

private Engine engine;

// Constructor Injection

public Car(Engine engine) {

this.engine = engine;

}

public void drive() {

engine.start();

System.out.println("Car is running...");

}

}

XML:-

<!-- beans.xml -->

<beans xmlns="http://www.springframework.org/schema/beans"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="

http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans.xsd">

<bean id="engine" class="com.example.Engine" />

<!-- For Constructor Injection -->

<bean id="car" class="com.example.Car">

<constructor-arg ref="engine" />

</bean>

<!-- For Setter Injection -->

<!--

<bean id="car" class="com.example.Car">

<property name="engine" ref="engine" />

</bean>

-->

</beans>

Exercise 4: Creating and Configuring a Maven Project

<project xmlns="http://maven.apache.org/POM/4.0.0" ...>

<modelVersion>4.0.0</modelVersion>

<groupId>com.example</groupId>

<artifactId>SpringDemo</artifactId>

<version>1.0-SNAPSHOT</version>

<dependencies>

<!-- Spring Context -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.36</version> <!-- Use latest stable -->

</dependency>

</dependencies>

</project>

package com.example;

public class Engine {

public void start() {

System.out.println("Engine started.");

}

}

package com.example;

public class Car {

private Engine engine;

public Car(Engine engine) {

this.engine = engine;

}

public void drive() {

engine.start();

System.out.println("Car is driving...");

}

}

Implement services for managing Country

package com.example.country.model;

public class Country {

private int id;

private String name;

private String capital;

public Country() {}

public Country(int id, String name, String capital) {

this.id = id;

this.name = name;

this.capital = capital;

}

// Getters and Setters

public int getId() { return id; }

public void setId(int id) { this.id = id; }

public String getName() { return name; }

public void setName(String name) { this.name = name; }

public String getCapital() { return capital; }

public void setCapital(String capital) { this.capital = capital; }

@Override

public String toString() {

return "Country{" + "id=" + id + ", name='" + name + '\'' + ", capital='" + capital + '\'' + '}';

}

}

package com.example.country.repository;

import com.example.country.model.Country;

import org.springframework.stereotype.Repository;

import java.util.\*;

@Repository

public class CountryRepository {

private final Map<Integer, Country> countryMap = new HashMap<>();

public List<Country> findAll() {

return new ArrayList<>(countryMap.values());

}

public Country findById(int id) {

return countryMap.get(id);

}

public void save(Country country) {

countryMap.put(country.getId(), country);

}

public void delete(int id) {

countryMap.remove(id);

}

}

Find a country based on country code

package com.example.country.model

public class Country {

private int id;

private String code; // Country code (e.g., IN, US)

private String name;

private String capital;

public Country() {}

public Country(int id, String code, String name, String capital) {

this.id = id;

this.code = code;

this.name = name;

this.capital = capital;

}

// Getters and Setters

public int getId() { return id; }

public void setId(int id) { this.id = id; }

public String getCode() { return code; }

public void setCode(String code) { this.code = code; }

public String getName() { return name; }

public void setName(String name) { this.name = name; }

public String getCapital() { return capital; }

public void setCapital(String capital) { this.capital = capital; }

@Override

public String toString() {

return "Country{" +

"id=" + id +

", code='" + code + '\'' +

", name='" + name + '\'' +

", capital='" + capital + '\'' +

'}';

}

}