**Hands on 5**

**Spring Core – Demonstration of Singleton Scope and Prototype Scope**

**SpringLearnApplication.java**

package com.cognizant.spring\_learn;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class SpringLearnApplication {

    private static final Logger LOGGER = LoggerFactory.getLogger(SpringLearnApplication.class);

    public static void main(String[] args) {

        LOGGER.info("START");

        displayCountry();

        LOGGER.info("END");

    }

    public static void displayCountry() {

    ApplicationContext context = new ClassPathXmlApplicationContext("country.xml");

    Country country = (Country) context.getBean("country", Country.class);

    Country anotherCountry = (Country) context.getBean("country", Country.class);

    LOGGER.info("Country : {}", country);

    LOGGER.info("Another Country : {}", anotherCountry);

    LOGGER.info("country == anotherCountry : {}", country == anotherCountry);

}

}

**Country.java**

package com.cognizant.spring\_learn;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

public class Country {

    private String code;

    private String name;

    private static final Logger LOGGER = LoggerFactory.getLogger(Country.class);

    public Country() {

        LOGGER.debug("Inside Country Constructor.");

    }

    public String getCode() {

        LOGGER.debug("Inside getCode()");

        return code;

    }

    public void setCode(String code) {

        LOGGER.debug("Inside setCode()");

        this.code = code;

    }

    public String getName() {

        LOGGER.debug("Inside getName()");

        return name;

    }

    public void setName(String name) {

        LOGGER.debug("Inside setName()");

        this.name = name;

    }

    @Override

    public String toString() {

        return "Country [code=" + code + ", name=" + name + "]";

    }

}

**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>3.5.4</version>

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

    </parent>

    <groupId>com.cognizant</groupId>

    <artifactId>spring-learn</artifactId>

    <version>0.0.1-SNAPSHOT</version>

    <name>spring-learn</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>

    </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>

    </dependencies>

    <build>

        <plugins>

            <plugin>

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

                <artifactId>spring-boot-maven-plugin</artifactId>

            </plugin>

        </plugins>

    </build>

</project>

**country.xml (Singleton Scope)**

<?xml version="1.0" encoding="UTF-8"?>

<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">

    <!-- Singleton Scope (default) -->

    <bean id="country" class="com.cognizant.spring\_learn.Country">

        <property name="code" value="IN"/>

        <property name="name" value="India"/>

    </bean>

</beans>

**country.xml (Prototype Scope)**

<?xml version="1.0" encoding="UTF-8"?>

<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">

    <!-- Prototype Scope -->

    <bean id="country" class="com.cognizant.spring\_learn.Country" scope="prototype">

    <property name="code" value="IN"/>

    <property name="name" value="India"/>

</bean>

</beans>

**application.properties**

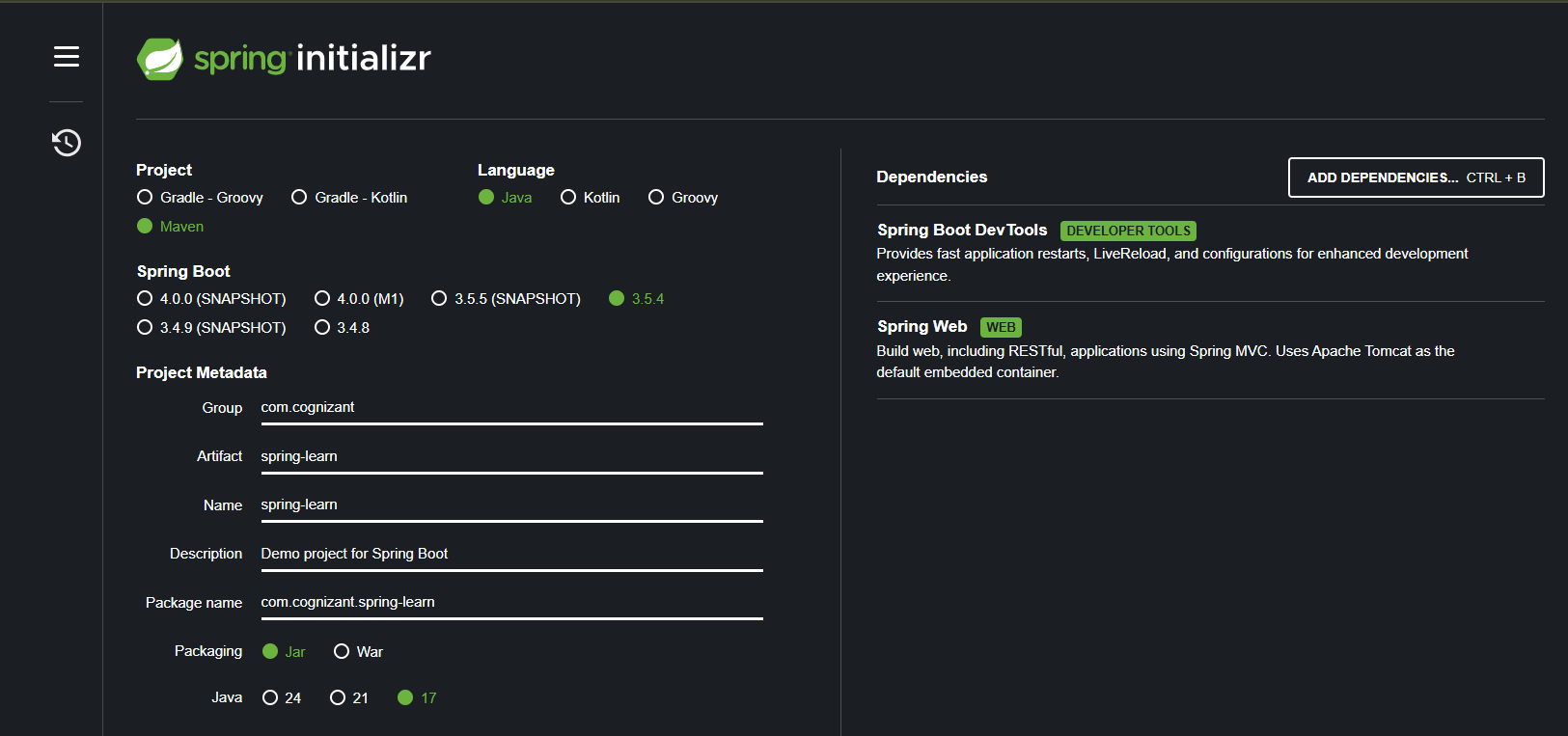
spring.application.name=spring-learn

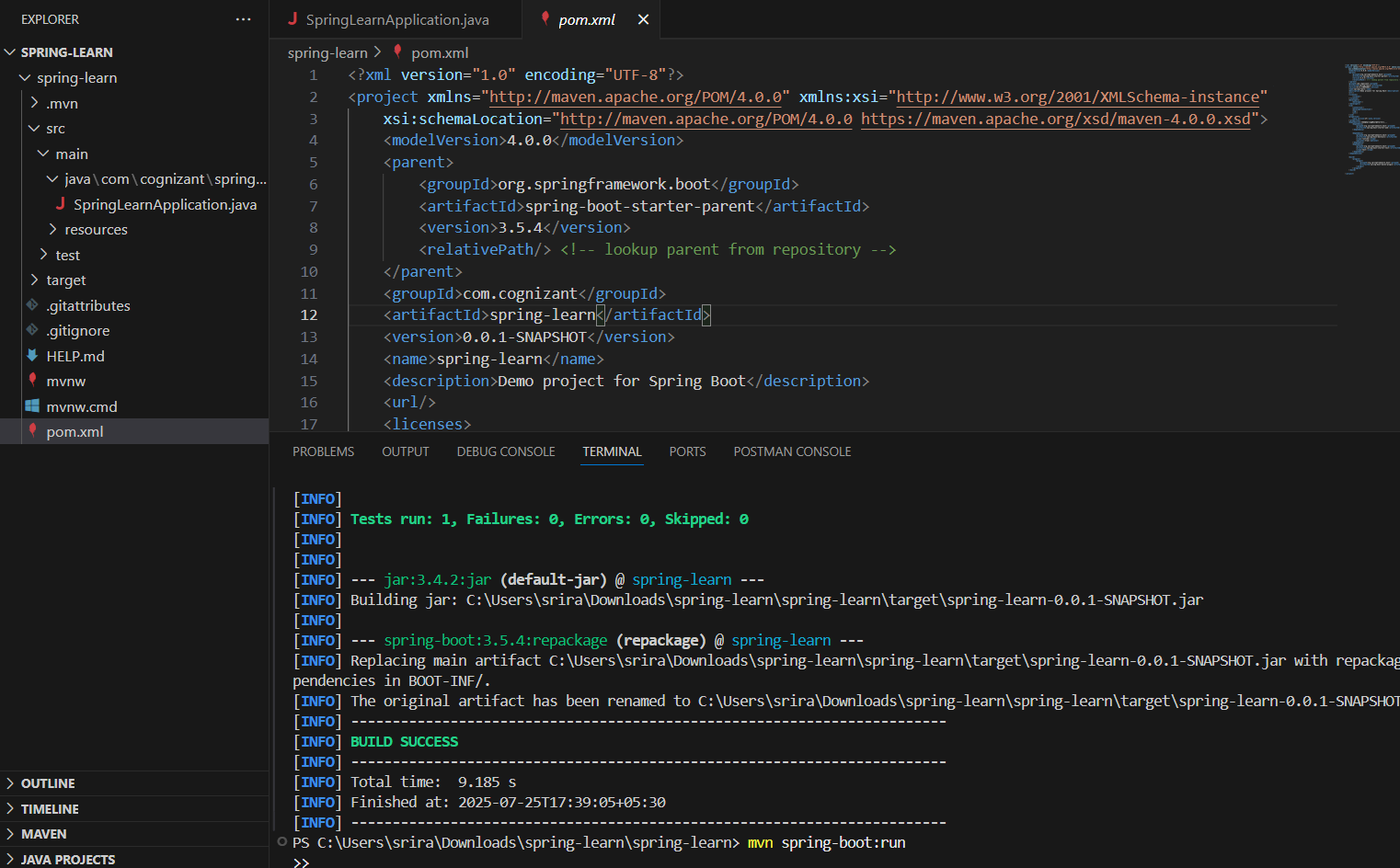
logging.level.org.springframework=info

logging.level.com.cognizant.spring\_learn=debug

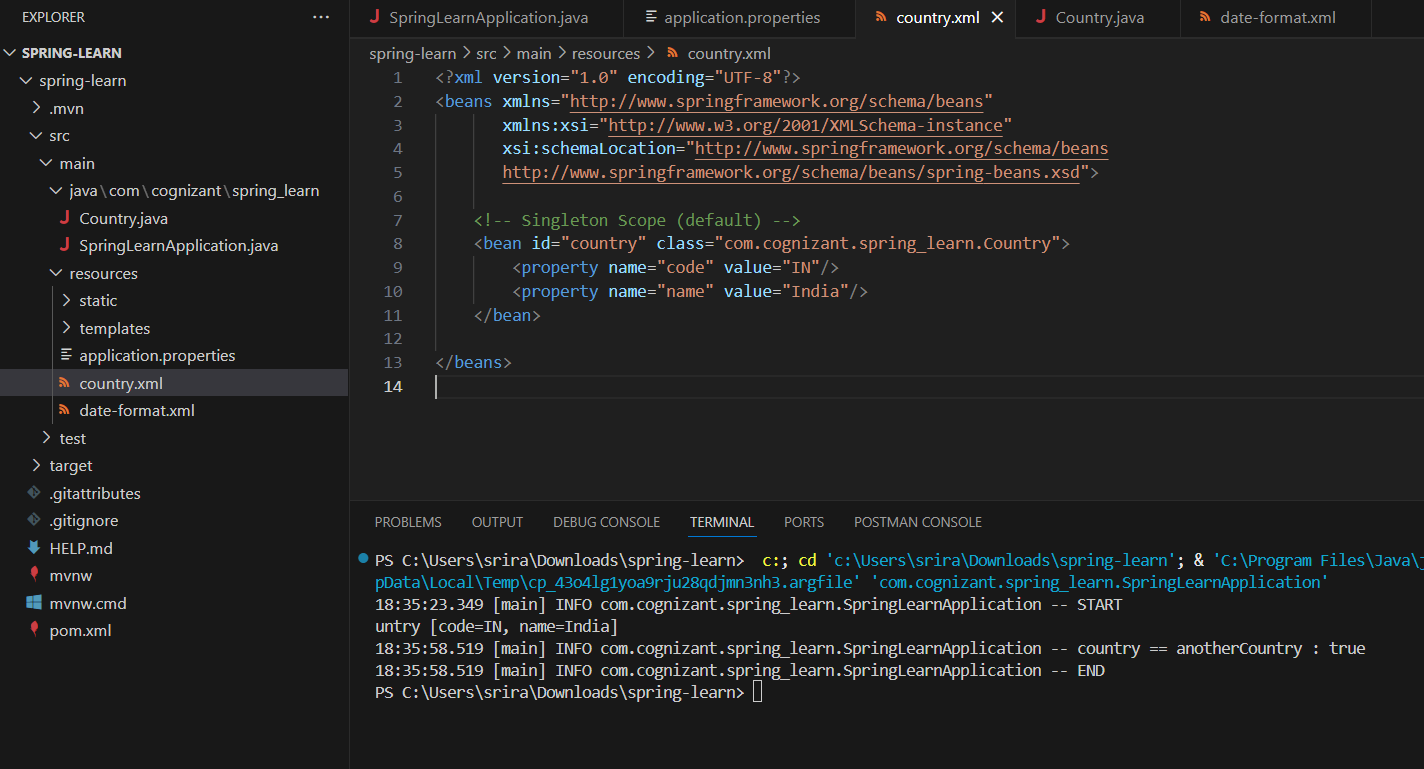
logging.pattern.console=%d{yyMMdd}|%d{HH:mm:ss.SSS}|%-20.20thread|%5p|%-25.25logger{25}|%25M|%m%n

**Output:**

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**Singleton scope**

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