**Hands on 1**

**Create a Spring Web Project using Maven** 

package com.cognizant.springlearn;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

*@SpringBootApplication*

public class SpringLearnApplication {

public static void main(String[] args) {

SpringApplication.*run*(SpringLearnApplication.class, args);

}

}

<?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>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>

**Hands on 2**

**Spring Core – Load SimpleDateFormat from Spring Configuration XML** 

<?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

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

    <bean id="dateFormat" class="java.text.SimpleDateFormat">

        <constructor-arg value="dd/MM/yyyy" />

    </bean>

</beans>

package com.cognizant.springlearn;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import java.text.SimpleDateFormat;

import java.util.Date;

*@SpringBootApplication*

public class SpringLearnApplication {

    public static void main(String[] args) {

        SpringApplication.*run*(SpringLearnApplication.class, args);

*displayDate*();

    }

    public static void displayDate() {

        ApplicationContext context = new ClassPathXmlApplicationContext("date-format.xml");

        SimpleDateFormat format = context.getBean("dateFormat", SimpleDateFormat.class);

        try {

            Date date = format.parse("31/12/2018");

            System.***out***.println("Parsed Date: " + date);

        } catch (Exception e) {

            e.printStackTrace();

        }

    }

}

**Hands on 3**

**Spring Core - Incorporate Logging**

logging.level.org.springframework=info

logging.level.com.cognizant.springlearn=debug

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

server.port=8081

package com.cognizant.springlearn;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import java.text.SimpleDateFormat;

import java.util.Date;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

*@SpringBootApplication*

public class SpringLearnApplication {

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

    public static void main(String[] args) {

        SpringApplication.*run*(SpringLearnApplication.class, args);

***LOGGER***.info("Inside main()");

*displayDate*();

    }

    public static void displayDate() {

***LOGGER***.info("START");

        ApplicationContext context = new ClassPathXmlApplicationContext("date-format.xml");

        SimpleDateFormat format = context.getBean("dateFormat", SimpleDateFormat.class);

        try {

            Date date = format.parse("31/12/2018");

***LOGGER***.debug("Parsed Date: {}", date);

        } catch (Exception e) {

***LOGGER***.error("Error parsing date", e);

        }

***LOGGER***.info("END");

    }

}

**Hands on 4**

**Spring Core – Load Country from Spring Configuration XML**

package com.cognizant.springlearn;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

public class Country {

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

    private String code;

    private String name;

    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 + "]";

    }

}

<?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

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

    <bean id="country" class="com.cognizant.springlearn.Country">

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

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

    </bean>

</beans>

package com.cognizant.springlearn;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

*@SpringBootApplication*

public class SpringLearnApplication {

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

    public static void main(String[] args) {

        SpringApplication.*run*(SpringLearnApplication.class, args);

***LOGGER***.info("Inside main()");

*displayCountry*();

    }

    public static void displayCountry() {

***LOGGER***.info("START");

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

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

***LOGGER***.debug("Country : {}", country.toString());

***LOGGER***.info("END");

    }

**Hands on 5**

**Spring Core – Demonstration of Singleton Scope and 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

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

    <bean id="country" class="com.cognizant.springlearn.Country">

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

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

</bean>

</beans>

package com.cognizant.springlearn;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

*@SpringBootApplication*

public class SpringLearnApplication {

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

    public static void main(String[] args) {

        SpringApplication.*run*(SpringLearnApplication.class, args);

***LOGGER***.info("Inside main()");

*displayCountry*();

    }

    public static void displayCountry() {

***LOGGER***.info("START");

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

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

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

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

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

***LOGGER***.info("END");

    }

}

<?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

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

    <bean id="country" class="com.cognizant.springlearn.Country" scope="prototype">

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

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

</bean>

</beans>

**Hands on 6**

**Spring Core – Load list of countries from Spring Configuration XML** 

<?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

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

    <bean id="in" class="com.cognizant.springlearn.Country">

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

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

    </bean>

    <bean id="us" class="com.cognizant.springlearn.Country">

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

        <property name="name" value="United States" />

    </bean>

    <bean id="de" class="com.cognizant.springlearn.Country">

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

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

    </bean>

    <bean id="jp" class="com.cognizant.springlearn.Country">

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

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

    </bean>

    <!-- List of countries -->

    <bean id="countryList" class="java.util.ArrayList">

        <constructor-arg>

            <list>

                <ref bean="in" />

                <ref bean="us" />

                <ref bean="de" />

                <ref bean="jp" />

            </list>

        </constructor-arg>

    </bean>

</beans>

package com.cognizant.springlearn;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import java.util.List;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

*@SpringBootApplication*

public class SpringLearnApplication {

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

    public static void main(String[] args) {

        SpringApplication.*run*(SpringLearnApplication.class, args);

***LOGGER***.info("Inside main()");

        //displayCountry();

*displayCountries*();

    }

    public static void displayCountry() {

***LOGGER***.info("START");

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

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

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

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

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

***LOGGER***.info("END");

    }

*@SuppressWarnings*("unchecked")

    public static void displayCountries() {

***LOGGER***.info("START");

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

        List<Country> countries = (List<Country>) context.getBean("countryList");

        for (Country country : countries) {

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

        }

***LOGGER***.info("END");

    }

}