

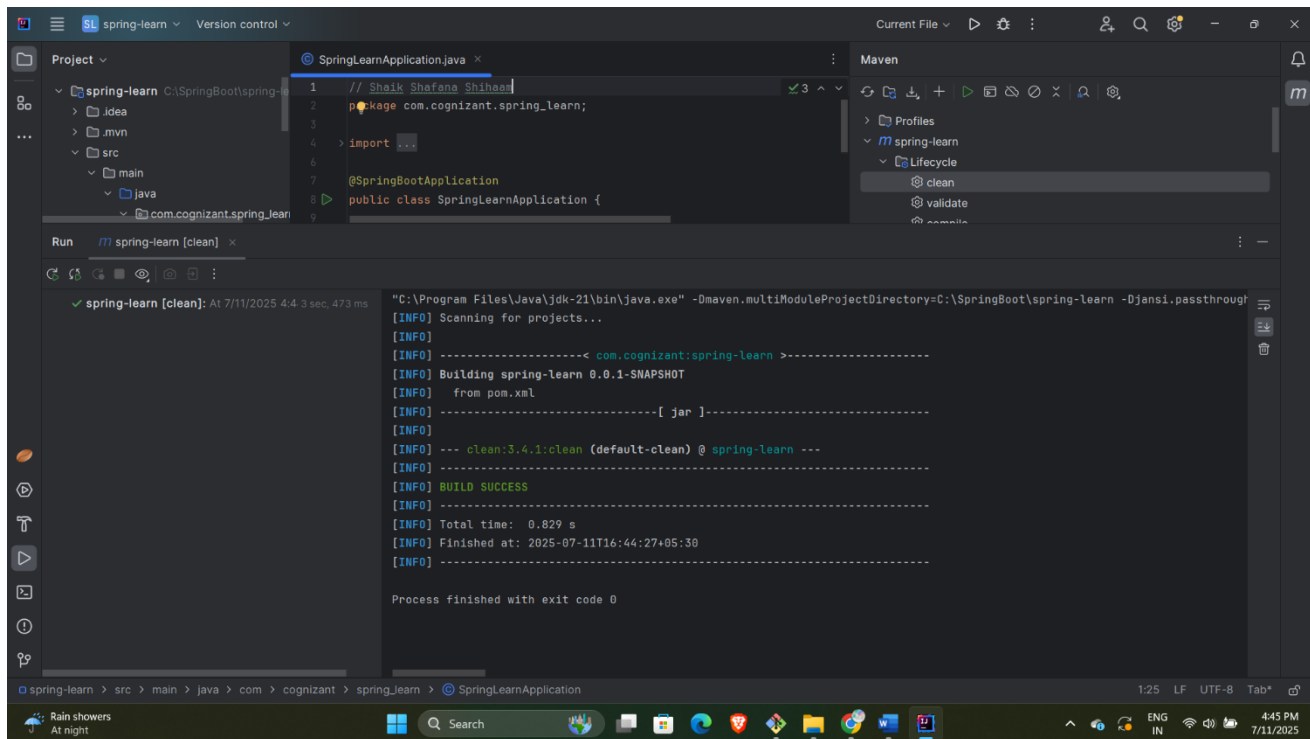
WEEK 4 SOLUTIONS

Spring REST using SpringBoot 3:

Hands on 1:

Create a Spring Web Project using Maven

Maven clean package output:



The screenshot shows an IDE window with the following components:

- Project Explorer:** Shows the project structure with folders like .idea, .mvn, src, main, java, and com.cognizant.spring_learn.
- Editor:** Displays the file SpringLearnApplication.java with the following code:

```
1 // Shaik Shafana Shibaan
2 package com.cognizant.spring_learn;
3
4 import ...
5
6 @SpringBootApplication
7 public class SpringLearnApplication {
```
- Maven:** Shows the Maven lifecycle with the 'clean' goal selected.
- Run Console:** Displays the output of the 'spring-learn [clean]' command, showing the build process and success message.

```
spring-learn [clean]: At 7/11/2025 4:4 3 sec, 473 ms
[INFO] Scanning for projects...
[INFO] -----< com.cognizant:spring-learn >-----
[INFO] Building spring-learn 0.0.1-SNAPSHOT
[INFO] from pom.xml
[INFO] -----[ jar ]-----
[INFO] --- clean:3.4.1:clean (default-clean) @ spring-learn ---
[INFO] BUILD SUCCESS
[INFO] Total time: 0.829 s
[INFO] Finished at: 2025-07-11T16:44:27+05:30
[INFO] -----
Process finished with exit code 0
```

SpringLearnApplication.java:

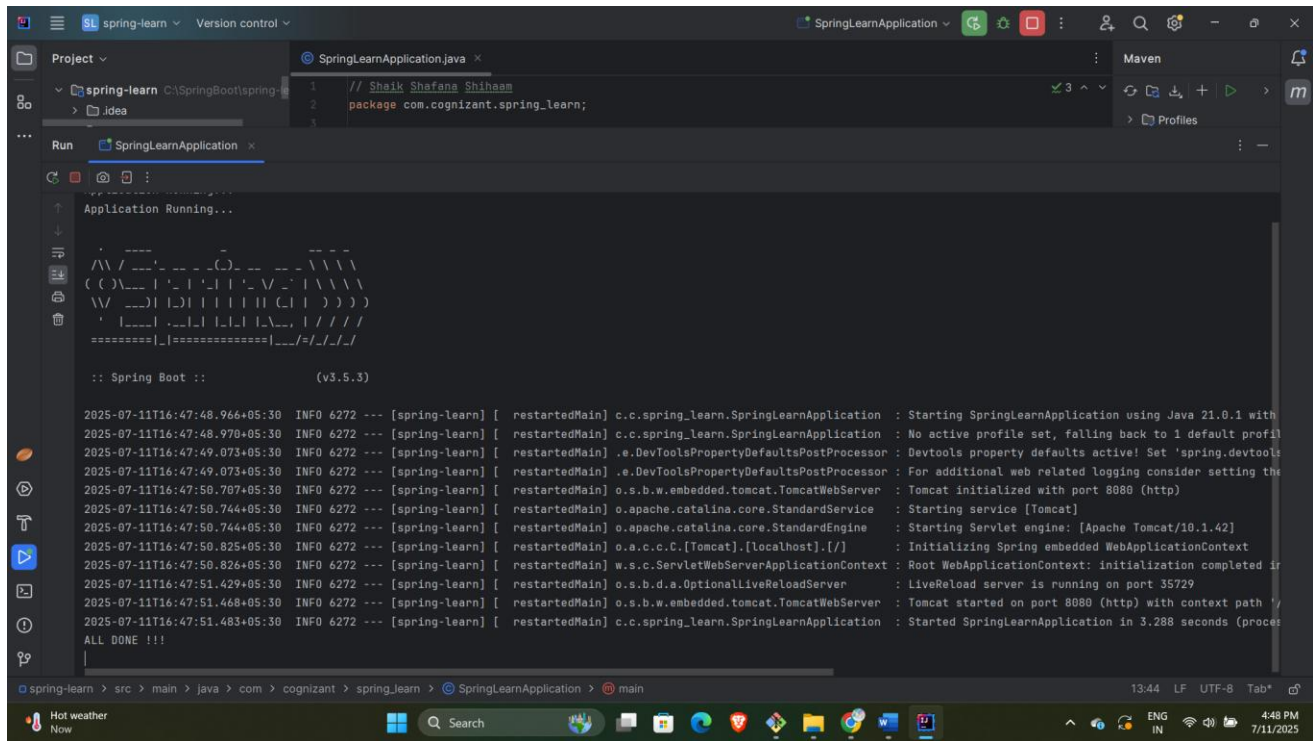
```
package com.cognizant.spring_learn;
```

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

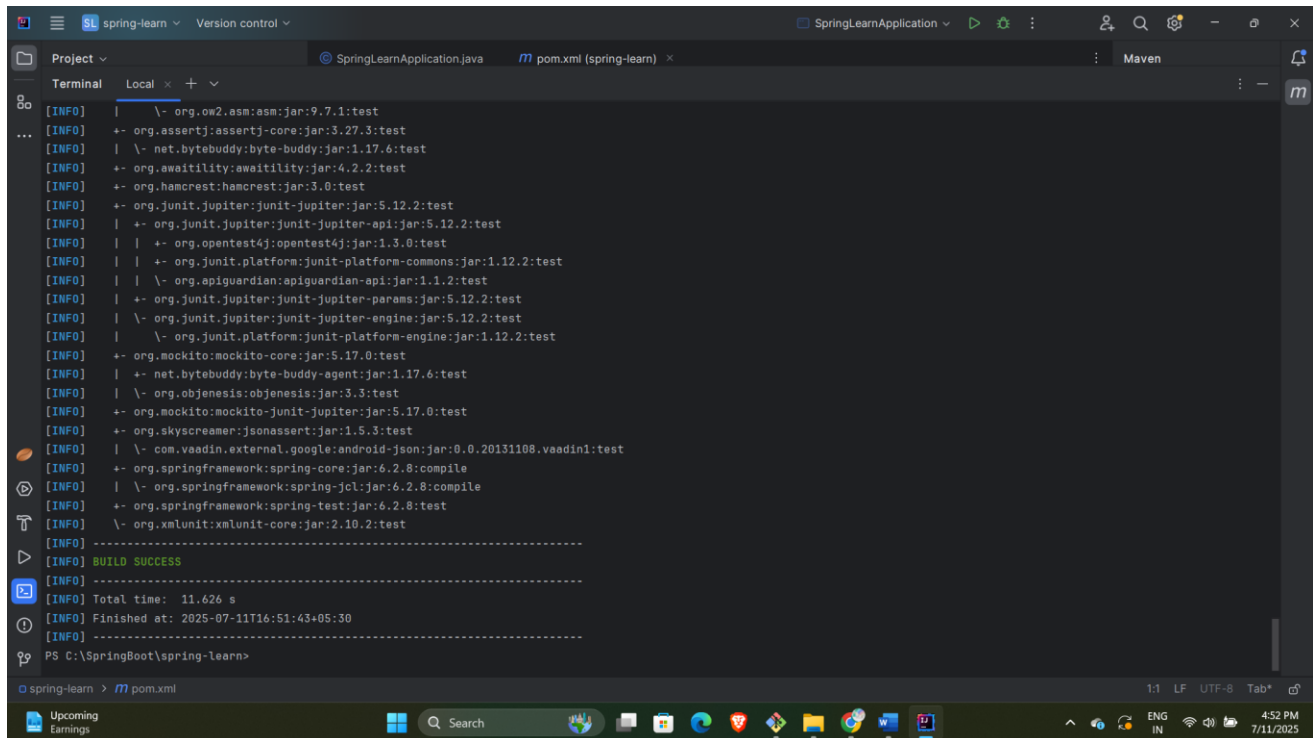
```
@SpringBootApplication
public class SpringLearnApplication {
```

```
    public static void main(String[] args) {
        System.out.println("Application Running...");
        SpringApplication.run(SpringLearnApplication.class, args);
        System.out.println("ALL DONE !!!");
    }
```

Output:



Dependency Tree : (via command `mvn dependency:tree`)



spring-learn Version control SpringLearnApplication pom.xml (spring-learn) Maven

Terminal Local x +

```
[INFO] com.cognizant:spring-learn:jar:0.0.1-SNAPSHOT
[INFO] +- org.springframework.boot:spring-boot-starter-web:jar:3.5.3:compile
[INFO] | +- org.springframework.boot:spring-boot-starter:jar:3.5.3:compile
[INFO] | | +- org.springframework.boot:spring-boot-starter-logging:jar:3.5.3:compile
[INFO] | | +- ch.qos.logback:logback-classic:jar:1.5.18:compile
[INFO] | | | \- ch.qos.logback:logback-core:jar:1.5.18:compile
[INFO] | | +- org.apache.logging.log4j:log4j-to-slf4j:jar:2.24.3:compile
[INFO] | | | \- org.apache.logging.log4j:log4j-api:jar:2.24.3:compile
[INFO] | | \- org.slf4j:jul-to-slf4j:jar:2.0.17:compile
[INFO] | +- jakarta.annotation:jakarta.annotation-api:jar:2.1.1:compile
[INFO] | \- org.yaml:snakeyaml:jar:2.4:compile
[INFO] +- org.springframework.boot:spring-boot-starter-json:jar:3.5.3:compile
[INFO] | +- com.fasterxml.jackson.core:jackson-databind:jar:2.19.1:compile
[INFO] | | +- com.fasterxml.jackson.core:jackson-annotations:jar:2.19.1:compile
[INFO] | | \- com.fasterxml.jackson.core:jackson-core:jar:2.19.1:compile
[INFO] | +- com.fasterxml.jackson.datatype:jackson-datatype-jdk8:jar:2.19.1:compile
[INFO] | +- com.fasterxml.jackson.datatype:jackson-datatype-jsr310:jar:2.19.1:compile
[INFO] | \- com.fasterxml.jackson.module:jackson-module-parameter-names:jar:2.19.1:compile
[INFO] +- org.springframework.boot:spring-boot-starter-tomcat:jar:3.5.3:compile
[INFO] | +- org.apache.tomcat.embed:tomcat-embed-core:jar:10.1.42:compile
[INFO] | +- org.apache.tomcat.embed:tomcat-embed-el:jar:10.1.42:compile
[INFO] | \- org.apache.tomcat.embed:tomcat-embed-websocket:jar:10.1.42:compile
[INFO] +- org.springframework:spring-web:jar:6.2.8:compile
[INFO] | +- org.springframework:spring-beans:jar:6.2.8:compile
[INFO] | \- io.micrometer:micrometer-observation:jar:1.15.1:compile
[INFO] | | \- io.micrometer:micrometer-commons:jar:1.15.1:compile
[INFO] \- org.springframework:spring-webmvc:jar:6.2.8:compile
[INFO] +- org.springframework:spring-aop:jar:6.2.8:compile
[INFO] +- org.springframework:spring-context:jar:6.2.8:compile
[INFO] \- org.springframework:spring-expression:jar:6.2.8:compile
```

spring-learn > pom.xml 1:1 LF UTF-8 Tab*

Upcoming Earnings Search ENG IN 4:52 PM 7/11/2025

Spring Core – Load SimpleDateFormat from Spring Configuration XML

Date-format.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>
```

SpringLearnApplication.java:

```
// Shaik Shafana Shihaam
package com.cognizant.spring_learn;

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.ParseException;
import java.text.SimpleDateFormat;
import java.util.Date;

@SpringBootApplication
public class SpringLearnApplication {

    public static void main(String[] args) {
        System.out.println("Application Running...");
        SpringApplication.run(SpringLearnApplication.class, args);
        System.out.println("ALL DONE !!!");
        displayDate();
    }

    public static void displayDate(){
        ApplicationContext context = new ClassPathXmlApplicationContext("date-format.xml");
```

```

SimpleDateFormat format = context.getBean("dateFormat",SimpleDateFormat.class);
Date parsedDate = null;
String dateString = "31/12/2018";
try{
    parsedDate = format.parse(dateString);
    System.out.println("parsed Date : " +parsedDate);
} catch (ParseException e) {
    throw new RuntimeException(e);
}
}
}

```

Output :

```

Application Running...
Application Running...

  ____ _
 / ___ \| | | |
/ /   \| |_| |
\ \   /| | | |
 \___/\_|_|_|_|

:: Spring Boot ::
          (v3.5.3)

2025-07-11T17:07:04.287+05:30 INFO 9136 --- [spring-learn] [ restartedMain] c.c.spring_learn.SpringLearnApplication : Starting SpringLearnApplication using Java 21.0.1 with
2025-07-11T17:07:04.290+05:30 INFO 9136 --- [spring-learn] [ restartedMain] c.c.spring_learn.SpringLearnApplication : No active profile set, falling back to 1 default profil
2025-07-11T17:07:04.379+05:30 INFO 9136 --- [spring-learn] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.devtools
2025-07-11T17:07:04.380+05:30 INFO 9136 --- [spring-learn] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider setting the
2025-07-11T17:07:05.883+05:30 INFO 9136 --- [spring-learn] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2025-07-11T17:07:05.906+05:30 INFO 9136 --- [spring-learn] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-11T17:07:05.907+05:30 INFO 9136 --- [spring-learn] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42]
2025-07-11T17:07:05.980+05:30 INFO 9136 --- [spring-learn] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2025-07-11T17:07:05.981+05:30 INFO 9136 --- [spring-learn] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1.591 s
2025-07-11T17:07:06.513+05:30 INFO 9136 --- [spring-learn] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : LiveReload server is running on port 35729
2025-07-11T17:07:06.554+05:30 INFO 9136 --- [spring-learn] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8080 (http) with context path '/'
2025-07-11T17:07:06.567+05:30 INFO 9136 --- [spring-learn] [ restartedMain] c.c.spring_learn.SpringLearnApplication : Started SpringLearnApplication in 2.92 seconds (process
ALL DONE !!!
parsed Date : Mon Dec 31 00:00:00 IST 2018

```

Hands on 3

Spring Core - Incorporate Logging

Application.properties:

```
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
logging.level.com.cognizant.spring_learn=DEBUG
```

SpringLearnApplication.java

```
// Shaik Shafana Shihaam
package com.cognizant.spring_learn;

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.ParseException;
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);
        displayDate();
    }
}
```

```

public static void displayDate(){
    LOGGER.info("Start....");
    ApplicationContext context = new ClassPathXmlApplicationContext("date-format.xml");
    SimpleDateFormat format = context.getBean("dateFormat",SimpleDateFormat.class);
    Date parsedDate = null;
    String dateString = "31/12/2018";
    LOGGER.debug("Attempting to parse date string {}", dateString);
    try{
        parsedDate = format.parse(dateString);
//        System.out.println("parsed Date : " +parsedDate);
        LOGGER.debug("Parsed date string {}",parsedDate);
    } catch (ParseException e) {
        throw new RuntimeException(e);
    }
    LOGGER.info("END///");
}
}

```

Output :

```

:: Spring Boot ::      (v3.5.3)

250711|17:30:50.737|restartedMain | INFO |s.SpringLearnApplication| logStarting|Starting SpringLearnApplication using Java 21.0.1 with PID 14504 (C:\SpringB
250711|17:30:50.741|restartedMain | DEBUG |s.SpringLearnApplication| logStarting|Running with Spring Boot v3.5.3, Spring v6.2.8
250711|17:30:50.744|restartedMain | INFO |s.SpringLearnApplication| logStartupProfileInfo|No active profile set, falling back to 1 default profile: "default"
250711|17:30:50.819|restartedMain | INFO |ertyDefaultsPostProcessor| logTo|Devtools property defaults active! Set 'spring.devtools.add-properties' to '
250711|17:30:50.820|restartedMain | INFO |ertyDefaultsPostProcessor| logTo|For additional web related logging consider setting the 'logging.level.web' ;
250711|17:30:52.202|restartedMain | INFO |s.b.w.e.t.TomcatWebServer| initialize|Tomcat initialized with port 8080 (http)
250711|17:30:52.236|restartedMain | INFO |o.a.c.c.StandardService | log|Starting service [Tomcat]
250711|17:30:52.236|restartedMain | INFO |o.a.c.c.core.StandardEngine| log|Starting Servlet engine: [Apache Tomcat/10.1.42]
250711|17:30:52.288|restartedMain | INFO |o.a.c.c.C.[.][/] | log|Initializing Spring embedded WebApplicationContext
250711|17:30:52.289|restartedMain | INFO |bServerApplicationContext|prepareWebApplicationContext|Root WebApplicationContext: initialization completed in 1468 ms
250711|17:30:53.012|restartedMain | INFO |OptionalLiveReloadServer| startServer|LiveReload server is running on port 35729
250711|17:30:53.056|restartedMain | INFO |s.b.w.e.t.TomcatWebServer| start|Tomcat started on port 8080 (http) with context path '/'
250711|17:30:53.068|restartedMain | INFO |s.SpringLearnApplication| logStarted|Started SpringLearnApplication in 2.983 seconds (process running for 3.608)
250711|17:30:53.073|restartedMain | INFO |s.SpringLearnApplication| displayDate|Start....
250711|17:30:53.221|restartedMain | DEBUG |s.SpringLearnApplication| displayDate|Attempting to parse date string 31/12/2018
250711|17:30:53.225|restartedMain | DEBUG |s.SpringLearnApplication| displayDate|Parsed date string Mon Dec 31 00:00:00 IST 2018
250711|17:30:53.225|restartedMain | INFO |s.SpringLearnApplication| displayDate|END///

```

Spring Core – Load Country from Spring Configuration XML

country.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="country" class="com.cognizant.spring_learn.Country">
    <property name="code" value="IND"/>
    <property name="name" value="India"/>
  </bean>
</beans>
```

Country.class:

```
package com.cognizant.spring_learn;

import org.slf4j.Logger;
import org.slf4j.LoggerFactory;

public class Country {
  private static final Logger LOGGER = LoggerFactory.getLogger(Country.class);
  String code;
  String name;
  Country(){
    LOGGER.debug("Inside Country Counstructor");
  }

  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 toString(){
    return "Country {code: '"+code+"', name: '"+name+"'}";
}
}
```

SpringLearnApplication.class:

```
// Shaik Shafana Shihaam
package com.cognizant.spring_learn;

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);
displayCountry();
}

public static void displayCountry(){
    ApplicationContext context = new ClassPathXmlApplicationContext("country.xml");
    Country country = context.getBean("country",Country.class);
    LOGGER.debug("{} ",country.toString());
}
}

```

Output :

```

:: Spring Boot ::                (v3.5.3)

250711|18:52:15.615|restartedMain|INFO|s.SpringLearnApplication|logStarting|Starting SpringLearnApplication using Java 21.0.1 with PID 5324 (C:\SpringBoo
250711|18:52:15.619|restartedMain|DEBUG|s.SpringLearnApplication|logStarting|Running with Spring Boot v3.5.3, Spring v6.2.8
250711|18:52:15.620|restartedMain|INFO|s.SpringLearnApplication|logStartupProfileInfo|No active profile set, falling back to 1 default profile: "default"
250711|18:52:15.766|restartedMain|INFO|ertyDefaultsPostProcessor|logTo|Devtools property defaults active! Set 'spring.devtools.add-properties' to '
250711|18:52:15.766|restartedMain|INFO|ertyDefaultsPostProcessor|logTo|For additional web related logging consider setting the 'logging.level.web' ;
250711|18:52:17.531|restartedMain|INFO|s.b.w.e.t.TomcatWebServer|initialize|Tomcat initialized with port 8080 (http)
250711|18:52:17.551|restartedMain|INFO|o.a.c.c.StandardService|log|Starting service [Tomcat]
250711|18:52:17.552|restartedMain|INFO|o.a.c.c.core.StandardEngine|log|Starting Servlet engine: [Apache Tomcat/10.1.42]
250711|18:52:17.609|restartedMain|INFO|o.a.c.c.C.[.][/] |log|Initializing Spring embedded WebApplicationContext
250711|18:52:17.610|restartedMain|INFO|bServerApplicationContext|prepareWebApplicationContext|Root WebApplicationContext: initialization completed in 1840 ms
250711|18:52:18.130|restartedMain|INFO|OptionalLiveReloadServer|startServer|LiveReload server is running on port 35729
250711|18:52:18.175|restartedMain|INFO|s.b.w.e.t.TomcatWebServer|start|Tomcat started on port 8080 (http) with context path '/'
250711|18:52:18.191|restartedMain|INFO|s.SpringLearnApplication|logStarted|Started SpringLearnApplication in 3.269 seconds (process running for 3.92)
250711|18:52:18.396|restartedMain|DEBUG|c.c.Spring_Learn.Country |<init>|Inside Country Counstructor
250711|18:52:18.399|restartedMain|DEBUG|s.SpringLearnApplication|displayCountry|Country {code: 'IND', name: India}
250711|18:52:23.068|licatonShutdownHook|INFO|s.b.w.e.t.GracefulShutdown|shutdownGracefully|Commencing graceful shutdown. Waiting for active requests to complete
250711|18:52:23.080|tomcat-shutdown|INFO|b.w.e.t.GracefulShutdown|doShutdown|Graceful shutdown complete

Process finished with exit code 130

```

Spring Core – Demonstration of Singleton Scope and Prototype Scope

country.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="country1" class="com.cognizant.spring_learn.Country" scope="prototype">
    <property name="code" value="IND"/>
    <property name="name" value="India"/>
  </bean>

  <bean id="country2" class="com.cognizant.spring_learn.Country" scope="prototype">
    <property name="code" value="US"/>
    <property name="name" value="United States"/>
  </bean>

  <bean id="country3" class="com.cognizant.spring_learn.Country" scope="prototype">
    <property name="code" value="DE"/>
    <property name="name" value="Germany"/>
  </bean>

</beans>
```

SpringLearnApplication.class :

```
// Shaik Shafana Shihaam
package com.cognizant.spring_learn;

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);
        displayCountry();
    }
    public static void displayCountry(){
        ApplicationContext context = new ClassPathXmlApplicationContext("country.xml");
        Country country = context.getBean("country1",Country.class);
        Country anotherCountry = context.getBean("country3", Country.class);
        LOGGER.debug("{} ",country.toString());
        LOGGER.debug("{} ",anotherCountry.toString());
    }
}

```

Output :

```

// Shaik Shafana Shihaam
package com.cognizant.spring.learn;

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);
        displayCountry();
    }
    public static void displayCountry(){
        ApplicationContext context = new ClassPathXmlApplicationContext("country.xml");
        Country country = context.getBean("country1",Country.class);
        Country anotherCountry = context.getBean("country3", Country.class);
        LOGGER.debug("{} ",country.toString());
        LOGGER.debug("{} ",anotherCountry.toString());
    }
}

```

```

:: Spring Boot :: (v3.5.3)

250711|19:06:12.797|restartedMain | INFO |s.SpringLearnApplication| logStarting|Starting SpringLearnApplication using Java 21.0.1 with PID 444 (C:\SpringBoot
250711|19:06:12.802|restartedMain | DEBUG |s.SpringLearnApplication| logStarting|Running with Spring Boot v3.5.3, Spring v6.2.8
250711|19:06:12.803|restartedMain | INFO |s.SpringLearnApplication| logStartupProfileInfo|No active profile set, falling back to 1 default profile: "default"
250711|19:06:12.945|restartedMain | INFO |ertyDefaultsPostProcessor| logToDevtools property defaults active! Set 'spring.devtools.add-properties' to 'f
250711|19:06:12.945|restartedMain | INFO |ertyDefaultsPostProcessor| logTo|For additional web related logging consider setting the 'logging.level.web' ;
250711|19:06:14.712|restartedMain | INFO |s.b.w.e.t.TomcatWebServer| initialize|Tomcat initialized with port 8080 (http)
250711|19:06:14.735|restartedMain | INFO |o.a.c.c.StandardService | log|Starting service [Tomcat]
250711|19:06:14.735|restartedMain | INFO |o.a.c.c.core.StandardEngine| log|Starting Servlet engine: [Apache Tomcat/10.1.42]
250711|19:06:14.790|restartedMain | INFO |o.a.c.c.C.[.[./] | log|Initializing Spring embedded WebApplicationContext
250711|19:06:14.791|restartedMain | INFO |bServerApplicationContext|prepareWebApplicationContext|Root WebApplicationContext: initialization completed in 1844 ms
250711|19:06:15.339|restartedMain | INFO |OptionalLiveReloadServer| startServer|LiveReload server is running on port 35729
250711|19:06:15.384|restartedMain | INFO |s.b.w.e.t.TomcatWebServer| start|Tomcat started on port 8080 (http) with context path '/'
250711|19:06:15.399|restartedMain | INFO |s.SpringLearnApplication| logStarted|Started SpringLearnApplication in 3.28 seconds (process running for 3.959)
250711|19:06:15.542|restartedMain | DEBUG |c.c.spring_learn.Country | <init>|Inside Country Counstructor
250711|19:06:15.543|restartedMain | DEBUG |c.c.spring_learn.Country | <init>|Inside Country Counstructor
250711|19:06:15.544|restartedMain | DEBUG |s.SpringLearnApplication| displayCountry|Country {code: 'IND', name: India}
250711|19:06:15.546|restartedMain | DEBUG |s.SpringLearnApplication| displayCountry|Country {code: 'DE', name: Germany}

```

Spring Core – Load list of countries from Spring Configuration XML

Country.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.spring_learn.Country">
    <property name="code" value="IND"/>
    <property name="name" value="India"/>
  </bean>

  <bean id="de" class="com.cognizant.spring_learn.Country" >
    <property name="code" value="US"/>
    <property name="name" value="United States"/>
  </bean>

  <bean id="jp" class="com.cognizant.spring_learn.Country">
    <property name="code" value="DE"/>
    <property name="name" value="Germany"/>
  </bean>

  <bean id="us" class="com.cognizant.spring_learn.Country">
    <property name="code" value="DE"/>
    <property name="name" value="Germany"/>
  </bean>

  <bean id="countryList" class="java.util.ArrayList">
    <constructor-arg>
      <list>
        <ref bean="in"></ref>
        <ref bean="de"></ref>
        <ref bean="us"></ref>
      </list>
    </constructor-arg>
  </bean>
</beans>
```

```
        <ref bean="jp"></ref>
    </list>
</constructor-arg>
</bean>
</beans>
```

SpringLearnApplication.class:

```
// Shaik Shafana Shihaam
package com.cognizant.spring_learn;

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.ArrayList;
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);
        displayCountries();
    }

    public static void displayCountries() {
        LOGGER.info("Retrieving the list of four countries for the airlines website...");
        ApplicationContext context = new ClassPathXmlApplicationContext("date-format.xml");
        List<Country> countries = context.getBean("countryList", List.class);
        for(Country country:countries){
            LOGGER.debug("{} ",country.toString());
        }
    }
}
```

```

}
    LOGGER.info("DONE.");
}
}

```

Output:

```

:: Spring Boot ::                (v3.5.3)

250711|19:56:36.783|restartMain    | INFO|s.SpringLearnApplication|    logStarting|Starting SpringLearnApplication using Java 21.0.1 with PID 27176 (C:\SpringBc
250711|19:56:36.790|restartMain    | DEBUG|s.SpringLearnApplication|    logStarting|Running with Spring Boot v3.5.3, Spring v6.2.8
250711|19:56:36.808|restartMain    | INFO|s.SpringLearnApplication|    logStartupProfileInfo|No active profile set, falling back to 1 default profile: "default"
250711|19:56:37.084|restartMain    | INFO|ertyDefaultsPostProcessor|    logTo|Devtools property defaults active! Set 'spring.devtools.add-properties' to 'f
250711|19:56:37.084|restartMain    | INFO|ertyDefaultsPostProcessor|    logTo|For additional web related logging consider setting the 'logging.level.web' p
250711|19:56:39.029|restartMain    | INFO|s.b.w.e.t.TomcatWebServer|    initialize|Tomcat initialized with port 8080 (http)
250711|19:56:39.056|restartMain    | INFO|o.a.c.c.StandardService|    log|Starting service [Tomcat]
250711|19:56:39.057|restartMain    | INFO|o.a.c.c.core.StandardEngine|    log|Starting Servlet engine: [Apache Tomcat/10.1.42]
250711|19:56:39.132|restartMain    | INFO|o.a.c.c.C.[.[/]|    log|Initializing Spring embedded WebApplicationContext
250711|19:56:39.133|restartMain    | INFO|bServerApplicationContext|prepareWebApplicationContext|Root WebApplicationContext: initialization completed in 2047 ms
250711|19:56:39.757|restartMain    | INFO|.OptionalLiveReloadServer|    startServer|LiveReload server is running on port 35729
250711|19:56:39.809|restartMain    | INFO|s.b.w.e.t.TomcatWebServer|    start|Tomcat started on port 8080 (http) with context path '/'
250711|19:56:39.824|restartMain    | INFO|s.SpringLearnApplication|    logStarted|Started SpringLearnApplication in 4.127 seconds (process running for 4.867)
250711|19:56:39.829|restartMain    | INFO|s.SpringLearnApplication|    displayCountries|Retrieving the list of four countries for the airlines website...
250711|19:56:40.045|restartMain    | DEBUG|c.c.spring_learn.Country|    <init>|Inside Country Counstructor
250711|19:56:40.046|restartMain    | DEBUG|c.c.spring_learn.Country|    <init>|Inside Country Counstructor
250711|19:56:40.047|restartMain    | DEBUG|c.c.spring_learn.Country|    <init>|Inside Country Counstructor
250711|19:56:40.047|restartMain    | DEBUG|c.c.spring_learn.Country|    <init>|Inside Country Counstructor
250711|19:56:40.052|restartMain    | DEBUG|.s.SpringLearnApplication|    displayCountries|Country {code: 'IND', name: India}
250711|19:56:40.054|restartMain    | DEBUG|.s.SpringLearnApplication|    displayCountries|Country {code: 'US', name: United States}
250711|19:56:40.054|restartMain    | DEBUG|.s.SpringLearnApplication|    displayCountries|Country {code: 'DE', name: Germany}
250711|19:56:40.054|restartMain    | DEBUG|.s.SpringLearnApplication|    displayCountries|Country {code: 'DE', name: Germany}
250711|19:56:40.054|restartMain    | INFO|.s.SpringLearnApplication|    displayCountries|DONE.

```