

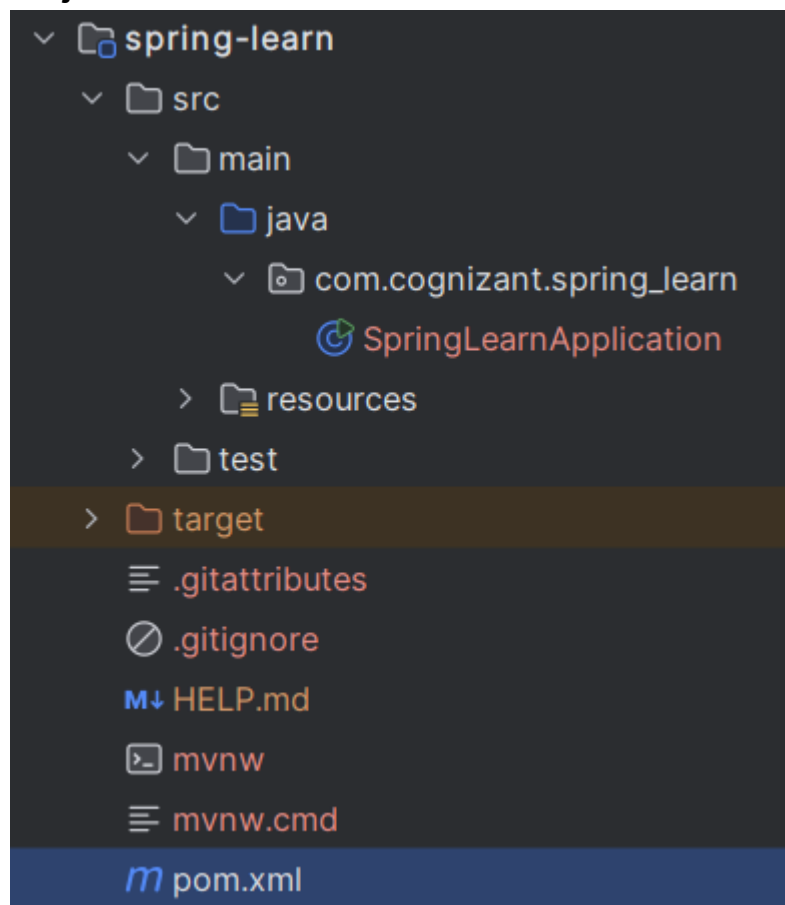
Spring Rest Hands on (XML Configuration)

Source Code: [Here](#)

Create a Spring Web Project using Maven

Output:

Project Structure:



Dependency Tree:

```

[INFO] --- dependency:3.8.1:tree (default-cli) @ spring-learn ---
[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
[INFO] +- org.springframework.boot:spring-boot-devtools:jar:3.5.3:runtime (optional)
[INFO] | +- org.springframework.boot:spring-boot:jar:3.5.3:compile
[INFO] | \- org.springframework.boot:spring-boot-autoconfigure:jar:3.5.3:compile
[INFO] \- org.springframework.boot:spring-boot-starter-test:jar:3.5.3:test
[INFO] +- org.springframework.boot:spring-boot-test:jar:3.5.3:test
[INFO] +- org.springframework.boot:spring-boot-test-autoconfigure:jar:3.5.3:test
[INFO] +- com.jayway.jsonpath:json-path:jar:2.9.0:test
[INFO] | \- org.slf4j:slf4j-api:jar:2.0.17:compile
[INFO] +- jakarta.xml.bind:jakarta.xml.bind-api:jar:4.0.2:test
[INFO] | \- jakarta.activation:jakarta.activation-api:jar:2.1.3:test
[INFO] +- net.minidev:json-smart:jar:2.5.2:test
[INFO] | \- net.minidev:accessors-smart:jar:2.5.2:test
[INFO] | \- org.ow2.asm:asm:jar:9.7.1:test
[INFO] +- org.assertj:assertj-core:jar:3.27.3:test
[INFO] | \- net.bytebuddy:byte-buddy:jar:1.17.6:test
[INFO] +- org.awaitility:awaitility:jar:4.2.2:test
[INFO] +- org.hamcrest:hamcrest:jar:3.0:test
[INFO] +- org.junit.jupiter:junit-jupiter:jar:5.12.2:test
[INFO] | +- org.junit.jupiter:junit-jupiter-api:jar:5.12.2:test
[INFO] | | +- org.opentest4j:opentest4j:jar:1.3.0:test
[INFO] | | +- org.junit.platform:junit-platform-commons:jar:1.12.2:test
[INFO] | | \- org.apiguardian:apiguardian-api:jar:1.1.2:test
[INFO] | +- org.junit.jupiter:junit-jupiter-params:jar:5.12.2:test
[INFO] | \- org.junit.jupiter:junit-jupiter-engine:jar:5.12.2:test
[INFO] | \- org.junit.platform:junit-platform-engine:jar:1.12.2:test
[INFO] +- org.mockito:mockito-core:jar:5.17.0:test
[INFO] | +- net.bytebuddy:byte-buddy-agent:jar:1.17.6:test
[INFO] | \- org.objenesis:objenesis:jar:3.3:test
[INFO] +- org.mockito:mockito-junit-jupiter:jar:5.17.0:test
[INFO] +- org.skyscreamer:jsonassert:jar:1.5.3:test
[INFO] | \- com.vaadin.external.google:android-json:jar:0.0.20131108.vaadin1:test
[INFO] +- org.springframework:spring-core:jar:6.2.8:compile
[INFO] | \- org.springframework:spring-jcl:jar:6.2.8:compile
[INFO] +- org.springframework:spring-test:jar:6.2.8:test
[INFO] \- org.xmlunit:xmlunit-core:jar:2.10.2:test
[INFO] BUILD SUCCESS

```

XML Configuration:

```

<properties>
  <java.version>21</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>

```

Spring Core – Load Country from Spring Configuration XML

Code:

```

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);

    private String code;
    private String name;

    public Country() {
        logger.debug("Inside Country Constructor.");
    }

    // Getters and Setters
    public String getCode() {
        logger.debug("Inside country.getCode()");
        return code;
    }

    public void setCode(String code) {

```

```

        logger.debug("Inside country.setCode()");
        this.code = code;
    }

    public String getName() {
        logger.debug("Inside country.getName()");
        return name;
    }

    public void setName(String name) {
        logger.debug("Inside country.setName()");
        this.name = name;
    }

    @Override
    public String toString() {
        return "Code: " + code + "\tName: " + name;
    }
}

```

```

package com.cognizant.spring_learn;

// Import all the required packages

@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();
    }

    private static void displayCountry(){
        ApplicationContext context = new
        ClassPathXmlApplicationContext("country.xml");

        Country country = context.getBean("country", Country.class);
        logger.debug("Country: {}", country);
    }
}

```

Output

Here we can see that the `Country` class default constructor is invoked and its instance variables are invoked via setters which we can check logs.

```
Run SpringLearnApplication x
{ [/error]}: error(HttpServletRequest)
{ [/error], produces [text/html]}: errorHtml(HttpServletRequest,HttpServletResponse)
250709|16:11:32.255|restartedMain |DEBUG|.s.w.s.H.Mappings | detectHandlers|'beanNameHandlerMapping' {}
250709|16:11:32.307|restartedMain |DEBUG|o.a.c.webresources.Cache | log|Increased cache size by [501] for item [org.apache.catalina.webresources.Cac
250709|16:11:32.315|restartedMain |DEBUG|.s.w.s.H.Mappings | logMappings|'resourceHandlerMapping' {/webjars/**=ResourceHttpRequestHandler [classpath
250709|16:11:32.413|restartedMain |INFO|.OptionalLiveReloadServer| startServer|LiveReload server is running on port 35729
250709|16:11:32.452|restartedMain |INFO|.s.b.w.e.t.TomcatWebServer| start|Tomcat started on port 8080 (http) with context path '/'
250709|16:11:32.457|restartedMain |INFO|.s.SpringLearnApplication| logStarted|Started SpringLearnApplication in 1.612 seconds (process running for 1.978)
250709|16:11:32.544|restartedMain |DEBUG|.c.c.spring_learn.Country | <init>|Inside Country Constructor.
250709|16:11:32.545|restartedMain |DEBUG|.c.c.spring_learn.Country | setCode|Inside country.setCode()
250709|16:11:32.545|restartedMain |DEBUG|.c.c.spring_learn.Country | setName|Inside country.setName()
250709|16:11:32.547|restartedMain |DEBUG|.s.SpringLearnApplication| displayCountry|Country: Code: IN Name: India
```

Additional Hands on

Spring Core – Load SimpleDateFormat from Spring Configuration XML

Code:

```
<?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.spring_learn;

// Import all the required packages

@SpringBootApplication
public class SpringLearnApplication {

    public static void main(String[] args) {
        SpringApplication.run(SpringLearnApplication.class, args);
        displayDate();
    }

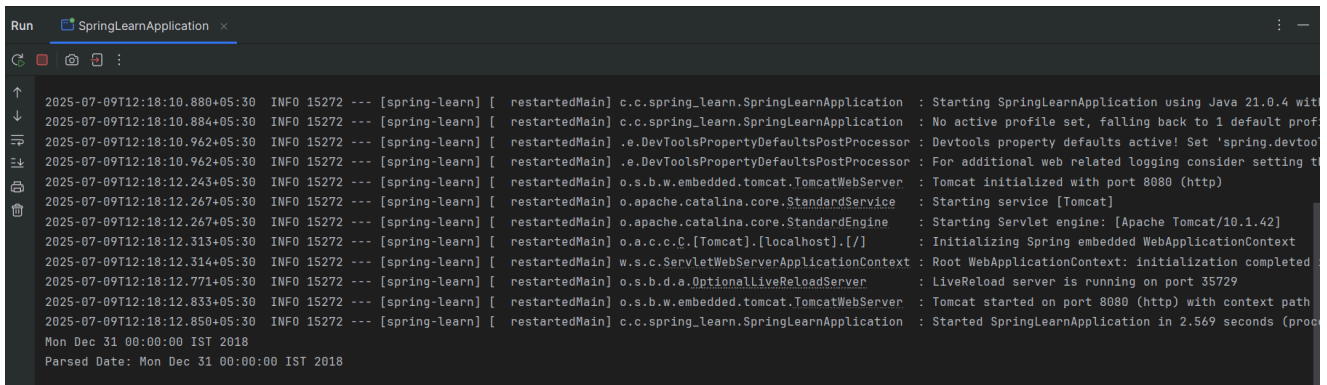
    private static void displayDate(){
        ApplicationContext context = new
        ClassPathXmlApplicationContext("date-format.xml");
        SimpleDateFormat dateFormat = context.getBean("dateFormat",
        SimpleDateFormat.class);
```

```

try{
    Date date = dateFormat.parse("31/12/2018");
    System.out.println(date);
    System.out.println("Parsed Date: " + date);
}
catch (Exception e){
    System.out.println("Failed to format date due to " + e);
}
}
}

```

Output:



```

2025-07-09T12:18:10.880+05:30 INFO 15272 --- [spring-learn] [ restartedMain] c.c.spring_learn.SpringLearnApplication : Starting SpringLearnApplication using Java 21.0.4 with
2025-07-09T12:18:10.884+05:30 INFO 15272 --- [spring-learn] [ restartedMain] c.c.spring_learn.SpringLearnApplication : No active profile set, falling back to 1 default profile
2025-07-09T12:18:10.962+05:30 INFO 15272 --- [spring-learn] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.devtools.restart.enabled' to 'true' in your application's
2025-07-09T12:18:10.962+05:30 INFO 15272 --- [spring-learn] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider setting the property 'logging.level.org.springframework.web' to 'DEBUG'
2025-07-09T12:18:12.243+05:30 INFO 15272 --- [spring-learn] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2025-07-09T12:18:12.267+05:30 INFO 15272 --- [spring-learn] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-09T12:18:12.267+05:30 INFO 15272 --- [spring-learn] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42]
2025-07-09T12:18:12.313+05:30 INFO 15272 --- [spring-learn] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2025-07-09T12:18:12.314+05:30 INFO 15272 --- [spring-learn] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed
2025-07-09T12:18:12.771+05:30 INFO 15272 --- [spring-learn] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : LiveReload server is running on port 35729
2025-07-09T12:18:12.833+05:30 INFO 15272 --- [spring-learn] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8080 (http) with context path ''
2025-07-09T12:18:12.850+05:30 INFO 15272 --- [spring-learn] [ restartedMain] c.c.spring_learn.SpringLearnApplication : Started SpringLearnApplication in 2.569 seconds (process running for 3.07)
Mon Dec 31 00:00:00 IST 2018
Parsed Date: Mon Dec 31 00:00:00 IST 2018

```

Spring Core - Incorporate Logging

Code:

```

# application.properties
spring.application.name=spring-learn
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

```

```

package com.cognizant.spring_learn;

// Import all the required packages

@SpringBootApplication
public class SpringLearnApplication {
    private static final Logger logger =
        LoggerFactory.getLogger(SpringLearnApplication.class);

    public static void main(String[] args) {
        SpringApplication.run(SpringLearnApplication.class, args);
        displayDateWithLogger();
    }
}

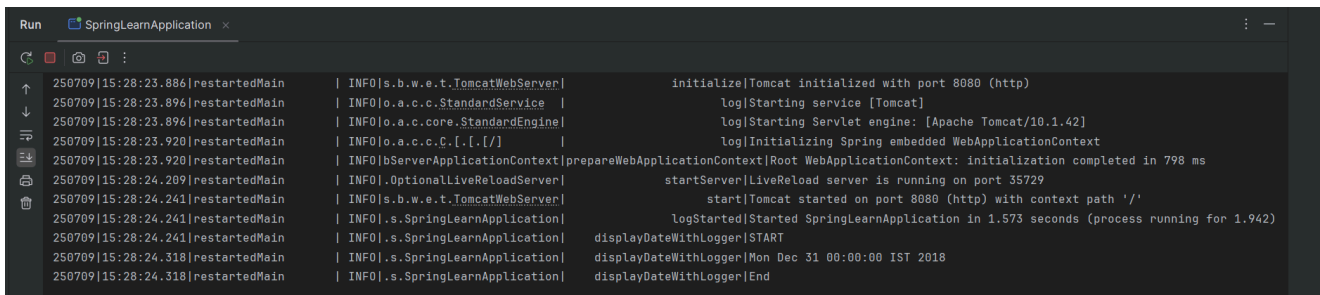
```

```

private static void displayDateWithLogger(){
    logger.info("START");
    ApplicationContext context = new
ClassPathXmlApplicationContext("date-format.xml");
    SimpleDateFormat dateFormat = context.getBean("dateFormat",
SimpleDateFormat.class);
    try{
        Date date = dateFormat.parse("31/12/2018");
        logger.info(date.toString());
    }
    catch (Exception e){
        logger.error(e.toString());
        System.out.println("Failed to format date due to " + e);
    }
    logger.info("End");
}
}

```

Output:



```

Run SpringLearnApplication x
250709|15:28:23.886|restartMain | INFO|s.b.w.e.t.TomcatWebServer| initialize|Tomcat initialized with port 8080 (http)
250709|15:28:23.896|restartMain | INFO|o.a.c.c.StandardService | log|Starting service [Tomcat]
250709|15:28:23.896|restartMain | INFO|o.a.c.core.StandardEngine| log|Starting Servlet engine: [Apache Tomcat/10.1.42]
250709|15:28:23.920|restartMain | INFO|o.a.c.c.C.[.[./]| log|Initializing Spring embedded WebApplicationContext
250709|15:28:23.920|restartMain | INFO|bServerApplicationContext|prepareWebApplicationContext|Root WebApplicationContext: initialization completed in 798 ms
250709|15:28:24.209|restartMain | INFO|.OptionalLiveReloadServer| startServer|LiveReload server is running on port 35729
250709|15:28:24.241|restartMain | INFO|s.b.w.e.t.TomcatWebServer| start|Tomcat started on port 8080 (http) with context path '/'
250709|15:28:24.241|restartMain | INFO|.s.SpringLearnApplication| logStarted|Started SpringLearnApplication in 1.573 seconds (process running for 1.942)
250709|15:28:24.241|restartMain | INFO|.s.SpringLearnApplication| displayDateWithLogger|START
250709|15:28:24.318|restartMain | INFO|.s.SpringLearnApplication| displayDateWithLogger|Mon Dec 31 00:00:00 IST 2018
250709|15:28:24.318|restartMain | INFO|.s.SpringLearnApplication| displayDateWithLogger|End

```