Spring Boot - Application Properties

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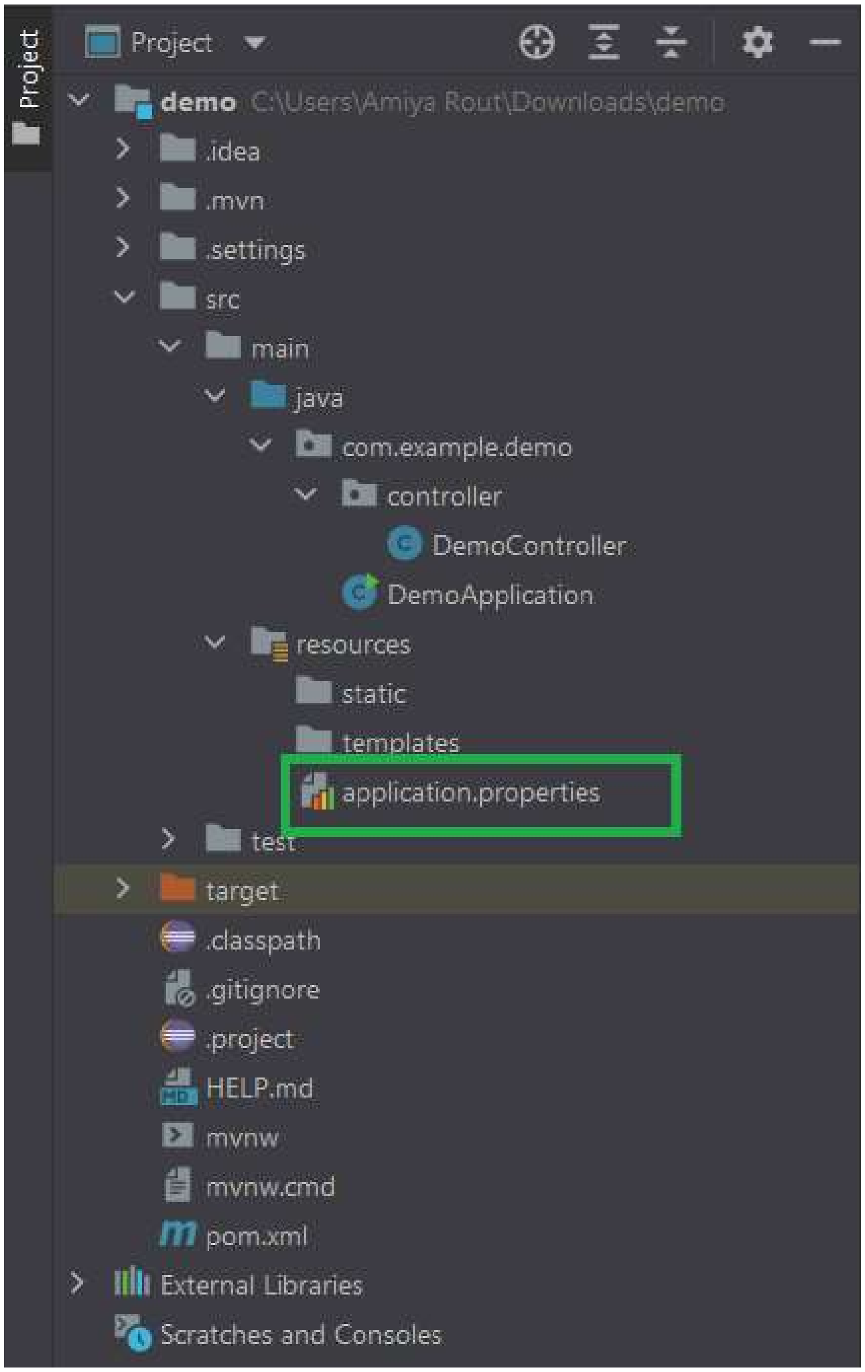
In Spring Boot applications, configuration plays a very important role in customizing the behavior of the application. Instead of hardcoding values in the code, Spring Boot provides a flexible way to configure application settings using the **application.properties** or **application.yml file**.

These files allow developers to manage environment-specific settings such as database configuration, server port, logging level and much more, making the application more maintainable and portable. The image below describes the Location of application.properties.



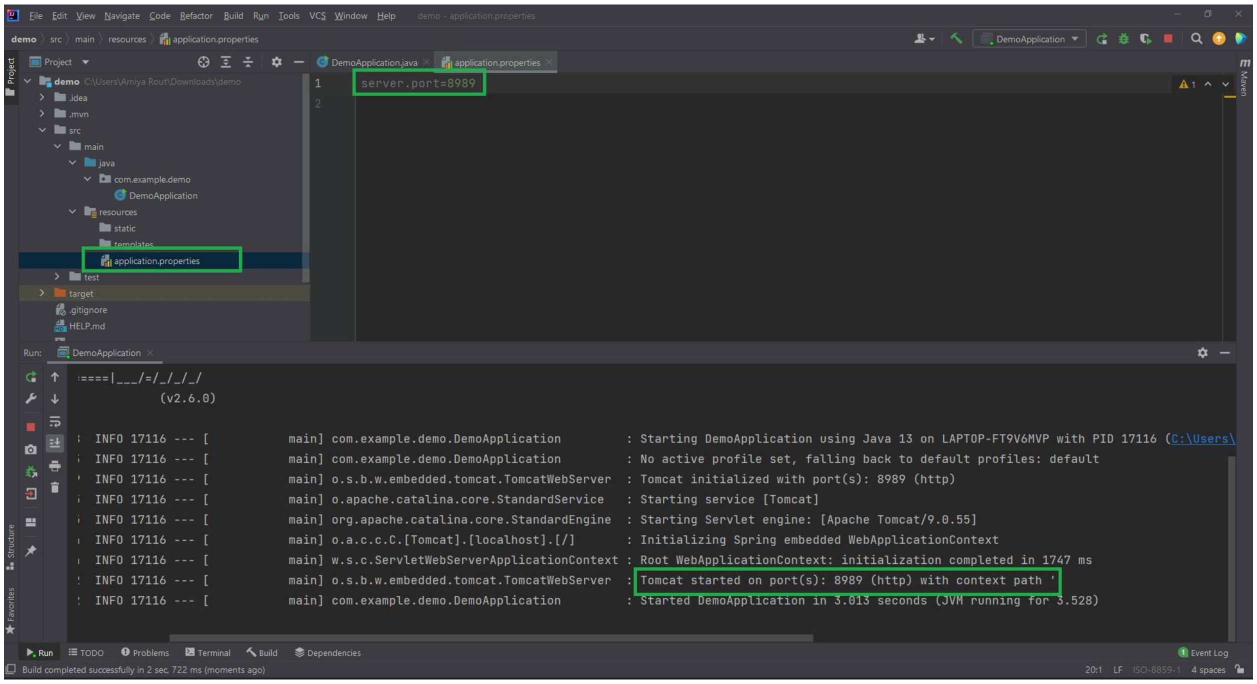
Why Use application.properties?

- Centralized configuration management.
- Easy to override default Spring Boot settings.
- Provides flexibility for different environments (dev, test, prod).
- Reduces hardcoding in source code.

Commonly Used Properties

1. Server Configuration

You can change the default port (8080) of a Spring Boot application by setting the property server.port in the application.properties file. For example: server.port=8989



```
server.port=8989
```

```
 :====|___/=/_/_/_/
          (v2.6.0)

 INFO 17116 --- [           main] com.example.demo.DemoApplication        : Starting DemoApplication using Java 13 on LAPTOP-FT9V6MVP with PID 17116 (C:\Users\
 INFO 17116 --- [           main] com.example.demo.DemoApplication        : No active profile set, falling back to default profiles: default
 INFO 17116 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(s): 8989 (http)
 INFO 17116 --- [           main] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
 INFO 17116 --- [           main] org.apache.catalina.core.StandardEngine  : Starting Servlet engine: [Apache Tomcat/9.0.55]
 INFO 17116 --- [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded WebApplicationContext
 INFO 17116 --- [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1747 ms
 INFO 17116 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port(s): 8989 (http) with context path '
 INFO 17116 --- [           main] com.example.demo.DemoApplication        : Started DemoApplication in 3.013 seconds (JVM running for 3.528)
```

Build completed successfully in 2 sec, 722 ms (moments ago)

2. Defining the Application Name

We can set a custom name for your Spring Boot application using the spring.application.name property in the application.properties.

Example:

> *spring.application.name=userservice*

This represents the property as a key-value pair, where each key is associated with a corresponding value.

2. Database Configuration

To connect your Spring Boot application with a database, specify the required properties such as spring.datasource.url, spring.datasource.username and spring.datasource.password in the application.properties file. These properties vary depending on the database (e.g., MySQL, PostgreSQL, Oracle).

For MySQL Database:

```
spring.datasource.url=jdbc:mysql://localhost:3306/mydb
spring.datasource.username=root
spring.datasource.password=admin
spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
```

For PostgreSQL Database

```
spring.datasource.url=jdbc:postgresql://localhost:5432/Postgres
atasource.username=postgres
spring.datasource.password=postgres
spring.jpa.database-
platform=org.hibernate.dialect.PostgreSQLDialect
spring.jpa.show-sql=true
```

For MongoDB

```
spring.data.mongodb.host=localhost
spring.data.mongodb.port=27017
spring.data.mongodb.database=BookStore
```

Hibernate (JPA) Settings

```
spring.jpa.hibernate.ddl-auto=update
spring.jpa.show-sql=true
```

3. Connecting with an Eureka Server

Eureka Server acts as a service registry in microservices architecture. Each microservice registers itself to Eureka, which maintains service discovery details.

```
eureka.client.register-with-eureka=true
eureka.client.fetch-registry=true
eureka.client.service-url.defaultZone=http://localhost:9096/eureka/
eureka.instance.hostname=localhost
```

> ***Note:*** *The values provided are sample data. Please update them according to your database configuration. However, the keys remain the same.*

Using application.yml Instead of application.properties

The application.properties file is not very readable when dealing with complex configurations. Most developers prefer using application.yml (YAML format) instead. YAML is a superset of JSON and provides a more structured and readable way to define hierarchical configuration data. Let's convert some of the previous examples into YAML format.

Case 1: Connecting with a MySQL Database

Let’s pick above example 3 where we were connecting with the MySQL Database, the corresponding properties will be as follows:

```
spring:
  datasource:
    url: jdbc:mysql://${MYSQL_HOST:localhost}:3306/db_example
    username: springuser
    password: ThePassword
    driver-class-name: com.mysql.cj.jdbc.Driver
  jpa:
    hibernate:
      ddl-auto: update
```

Case 2: Connecting with an Eureka Server

Let's pick above example 6 where we were connecting with the Eureka Server, the corresponding properties will be as follows:

```
eureka:
  client:
    register-with-eureka: true
  fetch-registry: true
  service-url:
    defaultZone: http://localhost:9096/eureka/
instance:
  hostname: localhost
```