**R&D Spring boot**

Spring Boot is a powerful framework for building backend applications with Java. It is part of the larger Spring Framework ecosystem and simplifies the development of new Spring applications by reducing the amount of boilerplate code required. Here are some key aspects and features of Spring Boot for backend development:

**Key Features**

1. Auto Configuration:

* Automatically configures your Spring application based on the dependencies you have added.
* Reduces the need for extensive configuration and setup.

1. Embedded Servers:

* Comes with embedded servers such as Tomcat, Jetty, or Undertow, allowing you to run your Spring Boot application as a standalone application.
* No need to deploy WAR files to an external server.

1. Production-Ready Features:

* Includes metrics, health checks, and externalized configuration.
* Provides tools for monitoring and managing your application in production.

1. Spring Boot Starters:

* Starters are a set of convenient dependency descriptors you can include in your application. For example, including spring-boot-starter-web will bring in all dependencies for a web application.

1. Spring Boot CLI:

* A command-line tool that can be used to quickly prototype with Spring.

**Building Spring Boot Backend Application**

1. **Using Spring Initializr:**

* Go to Spring Initializr
* Select the following:
  + Project: Maven Project
  + Language: Java
  + Spring Boot: (latest stable version)
  + Dependencies: Spring Web, Spring Data JPA, H2 Database (for in-memory database)
* Click "Generate" to download the project zip file.

1. Setting Up the Project:

* Extract the downloaded zip file.
* Open the extracted project folder in VS Code.

1. Running the Application:

* Open the terminal in VS Code.
* Run the application
* This will start the embedded server (e.g., Tomcat) and you can access your application at http://localhost:8080.

1. Creating an index.html Page:

* Create an index.html file in the src/main/resources/static directory.
* Add some basic HTML content to index.html
* Run the application again.