**Open Source Tools for the NextGen Technologies:**

Spring Boot Framework:

Spring Boot tutorial provides basic and advanced concepts of Spring Boot Framework. Our Spring Boot Tutorial is designed for beginners and professionals both.

Spring Boot is a Spring module that provides the **RAD (Rapid Application Development)** feature to the Spring framework.

Our Spring Boot Tutorial includes all topics of Spring Boot such, as features, project, maven project, starter project wizard, Spring Initializr, CLI, applications, annotations, dependency management, properties, starters, Actuator, JPA, JDBC, etc.

It is a Spring module that provides the **RAD (*Rapid Application Development*)** feature to the Spring Framework. It is used to create a stand-alone Spring-based application that you can just run because it needs minimal Spring configuration.
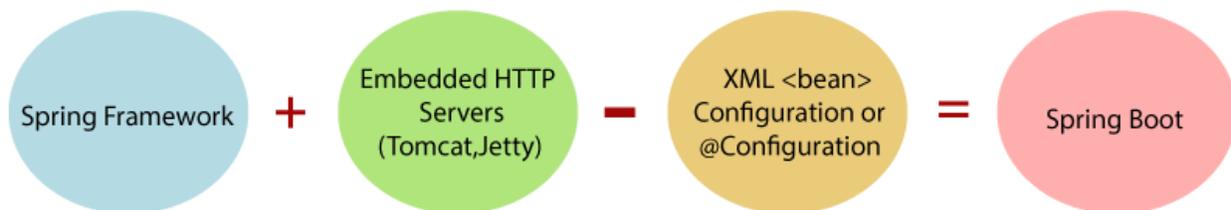
In short, Spring Boot is the combination of **Spring Framework** and **Embedded Servers**.

In Spring Boot, there is no requirement for XML configuration (deployment descriptor). It uses convention over configuration software design paradigm that means it decreases the effort of the developer.

We can use Spring **STS IDE** or **Spring Initializr** to develop Spring Boot Java applications.

We should use **Spring Boot Framework because**:

- o The dependency injection approach is used in Spring Boot.

- o It contains powerful database transaction management capabilities.
- o It simplifies integration with other Java frameworks like JPA/Hibernate ORM, Struts, etc.
- o It reduces the cost and development time of the application.

Along with the Spring Boot Framework, many other Spring sister projects help to build applications addressing modern business needs.

There are the following Spring sister projects are as follows:

- o **Spring Data:** It simplifies data access from the relational and **NoSQL** databases.
- o **Spring Batch:** It provides powerful **batch** processing.
- o **Spring Security:** It is a security framework that provides robust **security** to applications.
- o **Spring Social:** It supports integration with **social networking** like LinkedIn.
- o **Spring Integration:** It is an implementation of Enterprise Integration Patterns. It facilitates integration with other **enterprise applications** using lightweight messaging and declarative adapters.

Advantages of Spring Boot

- o It creates **stand-alone** Spring applications that can be started using Java **-jar**.
- o It tests web applications easily with the help of different **Embedded** HTTP servers such as **Tomcat, Jetty,** etc. We don't need to deploy WAR files.
- o It provides opinionated '**starter**' POMs to simplify our Maven configuration.
- o It provides **production-ready** features such as **metrics, health checks,** and **externalized configuration**.
- o There is no requirement for **XML** configuration.
- o It offers a **CLI** tool for developing and testing the Spring Boot application.
- o It offers the number of **plug-ins**.
- o It also minimizes writing multiple **boilerplate codes** (the code that has to be included in many places with little or no alteration), XML configuration, and annotations.
- o It **increases productivity** and reduces development time.