

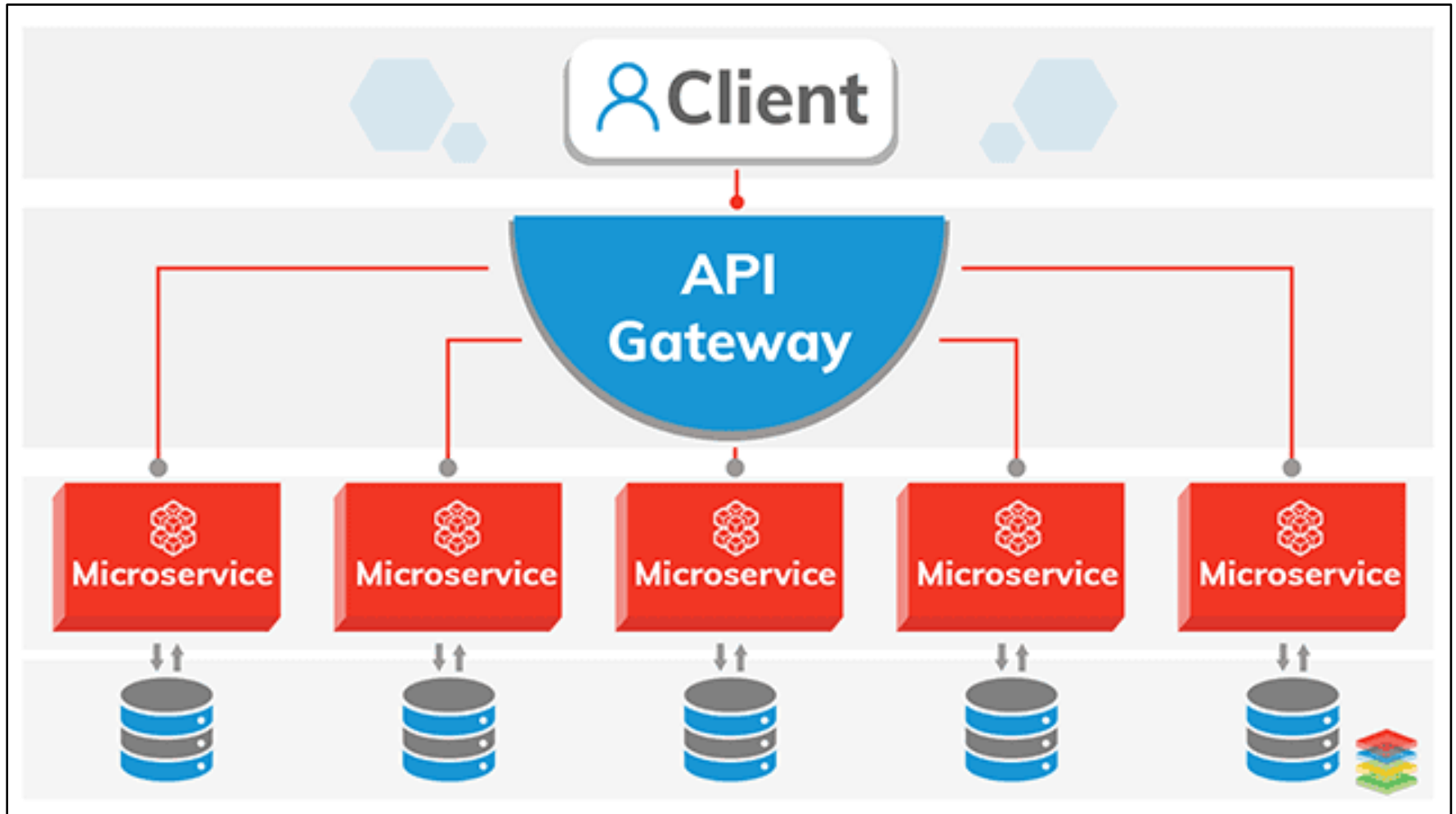
Introduction to Microservices, Spring Boot & Spring Data

By

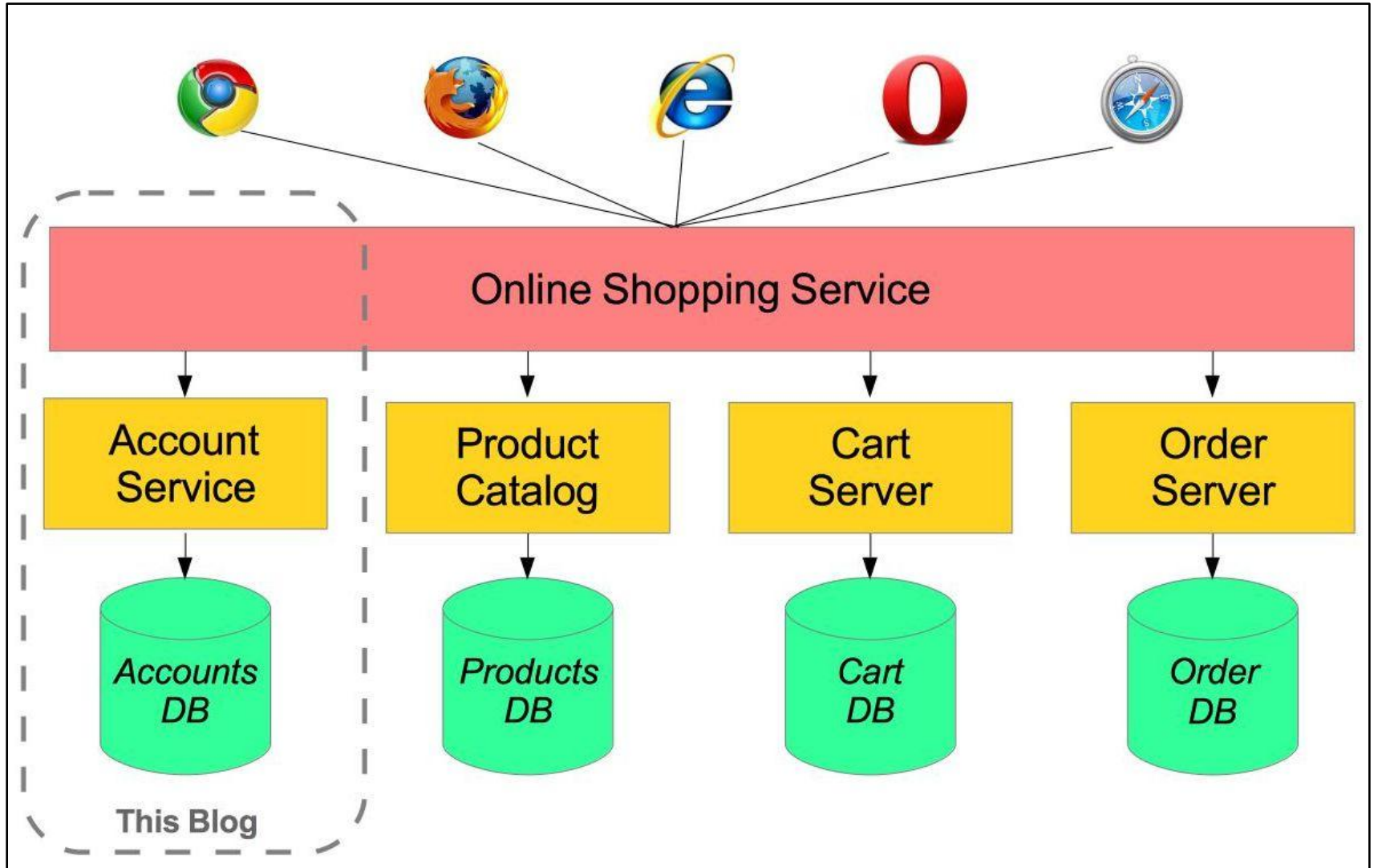
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Microservices

Microservices Architecture



Microservices in Shopping Cart App



What is Microservice?

Microservice is an architectural style that structures an application as a collection of services that are:

- 1) Highly maintainable and testable
- 2) Loosely coupled
- 3) Independently deployable
- 4) Organized around business capabilities
- 5) Owned by a small team

The microservice architecture enables the rapid, frequent and reliable delivery of large, complex applications.

Benefits of Microservices

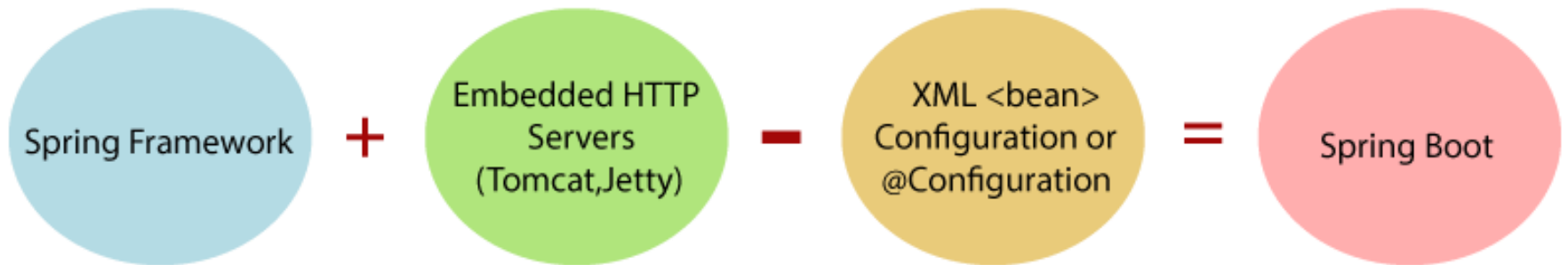
- **Simple To Deploy** - Deploy in pieces without affecting other services.
- **Simpler To Understand** - Follow code easier since the function is isolated and less dependent.
- **Reusability Across Business** - Share small services like payment or login systems across the business.
- **Faster Defect Isolation** - When a test fails or service goes down, isolate it quickly with microservices.
- **Minimized Risk Of Change** - Avoid locking in technologies or languages - change on the fly without risk.

Spring Boot

What is Spring Boot?

- 1) Spring Boot provides an easier and faster way to set up, configure, and run both simple and web-based applications.
- 2) Spring Boot is a Spring module that provides the RAD (Rapid Application Development) feature to the Spring framework.
- 3) Spring Boot is the combination of Spring Framework and Embedded Servers.
- 4) Spring Boot uses convention over configuration that means it decreases the effort of the developer. Hence, there is no need of writing XML deployment descriptor.

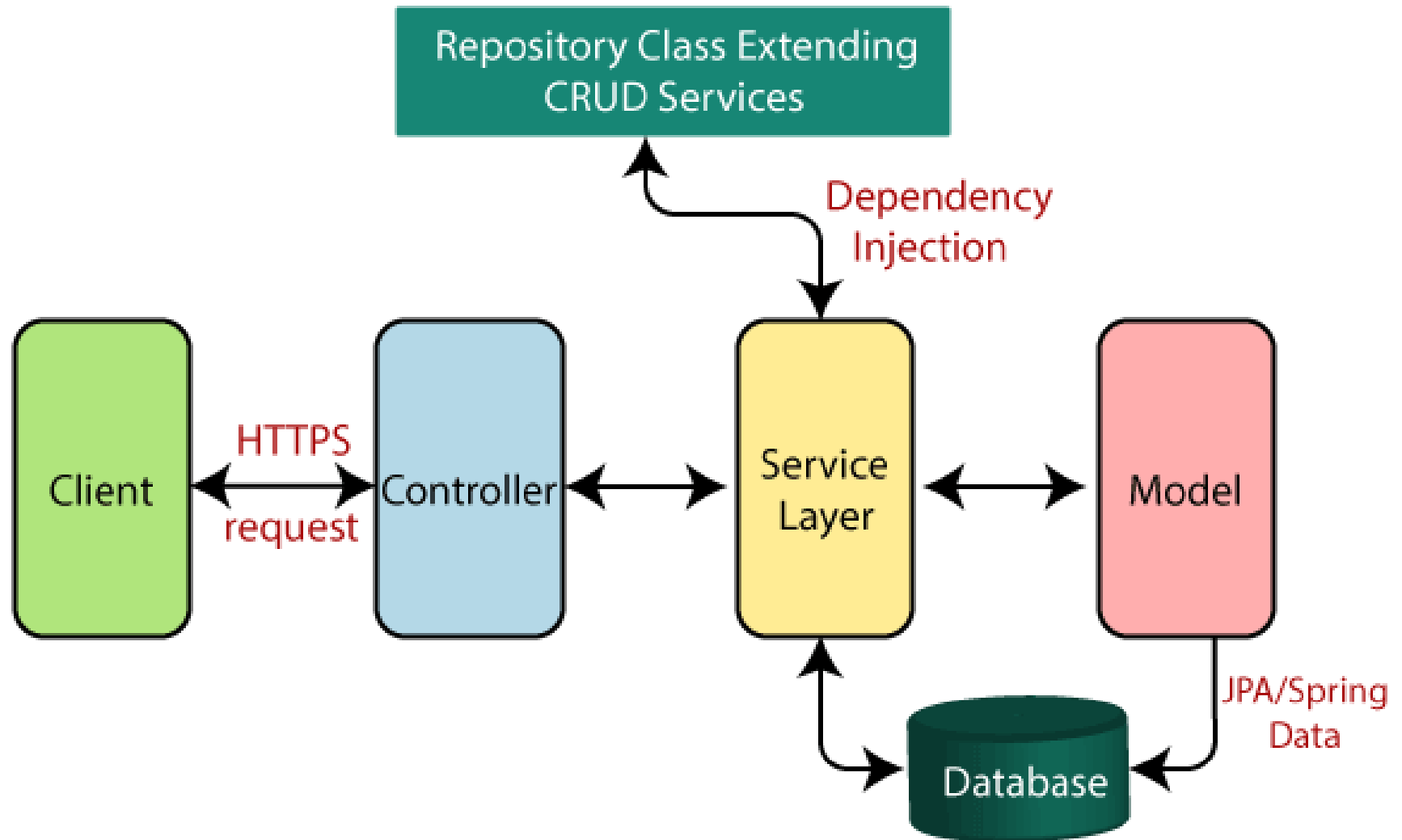
What is Spring Boot?



Advantages of Spring Boot

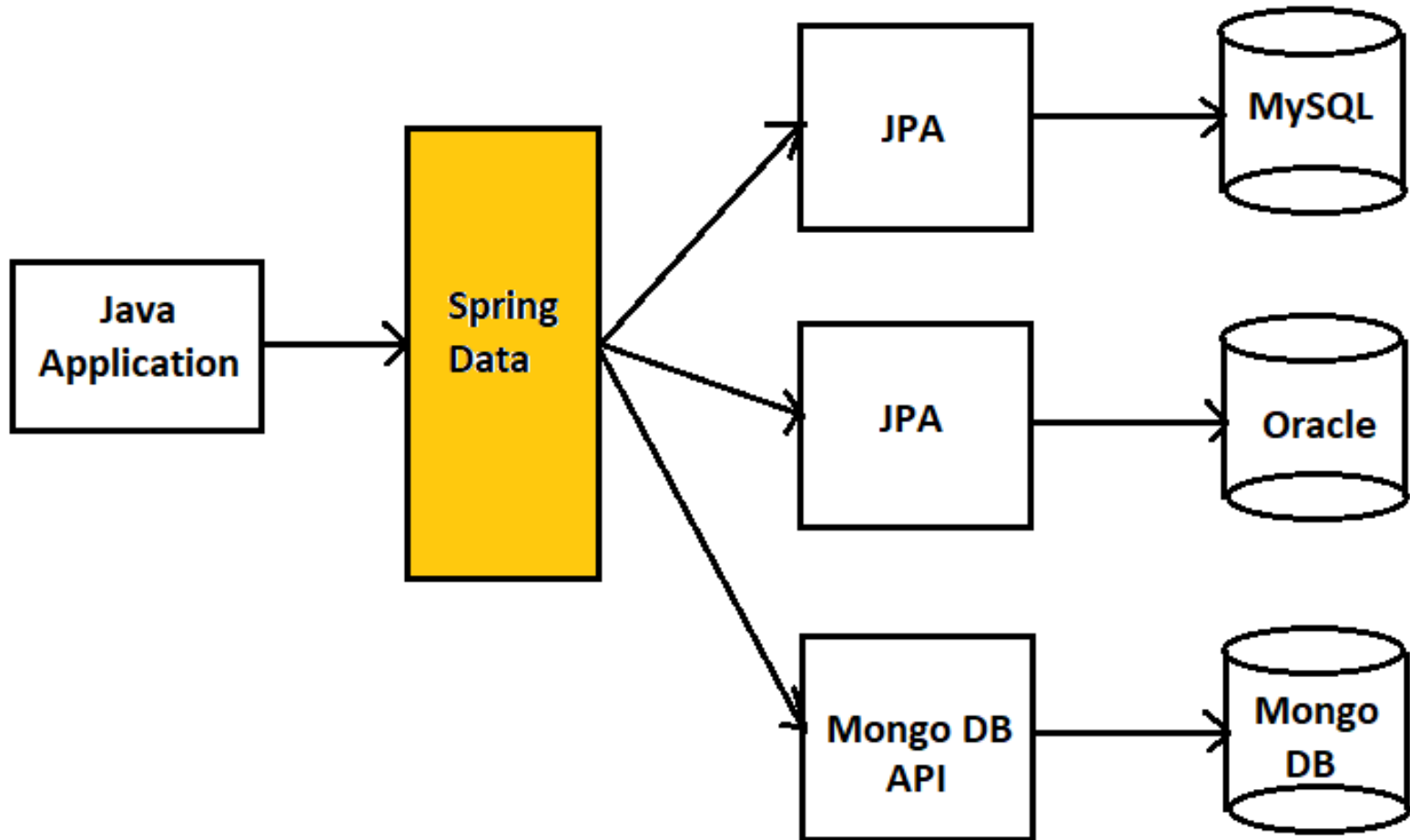
- 1) It creates stand-alone Spring applications that can be started using Java -jar.
- 2) It tests web applications easily with the help of different Embedded HTTP servers such as Tomcat, Jetty, etc. We don't need to deploy WAR files.
- 3) There is no requirement for XML configuration.
- 4) It offers the number of plug-ins.
- 5) It increases productivity and reduces development time.

Spring Boot flow architecture



Spring Data

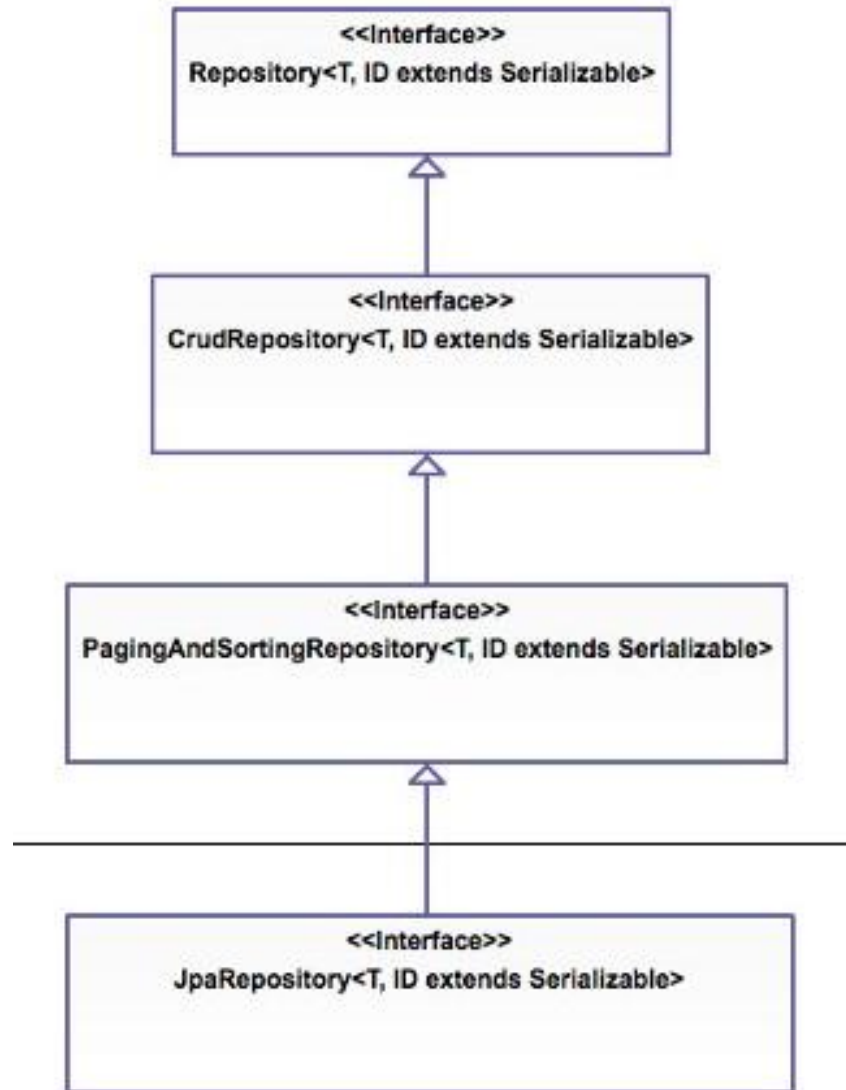
What is Spring Data?



What is Spring Data?

- 1) Spring Data is a part of the Spring Framework.
- 2) Spring Data provides abstraction layer over SQL as well as NoSQL databases.
- 3) The goal of Spring Data abstraction is to significantly reduce the amount of boilerplate code required to implement data access layers for various persistence stores.
- 4) Spring Data provides abstraction is in the form of Repository API.

Spring Data JPA Repository API



Spring Data JPA Application Flow

