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**Difference between JPA, Hibernate and Spring Data JPA**

| **JPA** | **Hibernate** | **Spring Data JPA** |
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| JPA is a specification that defines standard APIs for ORM in Java. | Hibernate is an implementation of the JPA specification. | Spring Data JPA is a Spring-based framework built on top of JPA and Hibernate. |
| JPA itself does not contain any implementation logic. | Hibernate provides the actual implementation of the ORM logic defined by JPA. | Spring Data JPA uses Hibernate as the default implementation for JPA. |
| JPA requires developers to write full repository/DAO code manually. | Hibernate helps reduce the amount of code through ORM features but still needs boilerplate. | Spring Data JPA reduces boilerplate using auto-implemented repository interfaces. |
| JPA supports annotations like @Entity, @Table, @Id, etc. | Hibernate supports all JPA annotations and also includes additional annotations. | Spring Data JPA relies on standard JPA annotations and Spring-specific ones like @Repository. |
| JPA requires a provider to actually work (e.g., Hibernate or EclipseLink). | Hibernate is a provider that implements the JPA interface. | Spring Data JPA configures the JPA provider (like Hibernate) and integrates with Spring Boot. |
| JPA does not provide its own query language. | Hibernate introduces HQL (Hibernate Query Language) for advanced querying. | Spring Data JPA allows query methods using naming conventions and also supports JPQL and native queries. |
| JPA has no support for caching by default. | Hibernate includes first-level and optional second-level caching features. | Spring Data JPA inherits Hibernate’s caching and adds Spring's cache abstraction. |
| JPA cannot be used directly without configuration. | Hibernate can work standalone or through integration with Spring or JPA. | Spring Data JPA simplifies configuration via Spring Boot starters. |
| JPA is purely an abstraction and has no tools or utilities. | Hibernate provides utilities like SessionFactory and Criteria API for advanced ORM control. | Spring Data JPA abstracts most Hibernate complexity and promotes clean repository usage. |
| JPA focuses only on standardizing ORM across Java EE applications. | Hibernate offers full ORM capabilities and additional tools beyond JPA. | Spring Data JPA enables rapid development of data access layers in Spring applications. |