**Hibernate**:

* Hibernate is an open source Object Relational Mapping Framework, simplifying creating Data Access Layer of an Enterprise application.
* A collection of small and large components coming together ,working together providing a software solutions for a given business requirement is called an Enterprise Application.
* If these components are developed using Java technologies, then it is called as Java Enterprise Application.
* For parallel development, easy testing, future easy extension etc.. Enterprise applications are divided into multiple layers/tiers.
* For most of the enterprise application we find a common layered architecture is it is divided into mainly 3 Layers/Tiers namely **Presentation ,Business/Service and DataAccess/Integration** Layer.
* Hibernate is the framework which is going to help us in implementing DataAccess Layer of the application.
* Hibernate doesn’t provide any service in Service and presentation layer. Its scope is limited to only DataAccess layer.
* Most of the Enterprise application are using Relational database for management o the business data.
* In an Object-Oriented-Application Design with this kind of layering architecture ,the business data is represented in the form of Domain Object Model(DOM)/Value Object for transferring the data comfortably across the layers, whereas when it comes to Database the data is represented following the Relational database rules. And thus there is chance of Mismatch problem between Object Model and Relational model.
* Hibernate provides readymade solution out-of-the-box for most of the common mismatch problems,in mapping the data between these two different models, as follows:

1. Problem Of Identity
2. Problem Of Granularity
3. Problem Of Subtype
4. Problem Of Relationships
5. Problem Of Object Graph Loading

* To make hirbernate help us in mapping the Object model data into Relational Model ,we need to provide the information about the object model in the form of xml configuraion /Annotation .
* These are the different configuration files that we use in hibernate :

1. hibernate-config.xml : Which contain the information about External resources such as driver\_class\_name, connection url,username,password,jndi properties etc.. , hibernate system properties , dialect class details..etc.
2. Hibernate hbm.xml : which contains information about the object model such as information about which property is mapped to which table,colum , information about primay key and relationships etc..
3. hibernate.properties : here the name of the file should be same as hibernate.properties. It contains all the information same like hibernate-cfg.xml configuration file except that it can contain information about resource mapping information about object . that is reason why it cann’t be used independently in the application, it is always used in combination with Programatic approach or hibernate-cfg.xml file.

* Key Components of Hibernate API:
* Configuration
* SessionFactory
* Session
* Transaction
* Query
* Criteria
* All of these above information can be described using programmatic approach also.
* With Respect to hibernate as object can be there in 3 states:

1. Transient State
2. Persistent state
3. Detached state