

Hibernate – L1: Trend.Nxt Hands-on Assignments

Estimated Efforts: 2 PDs

TrendNxt Url : https://wipro365.sharepoint.com/sites/ku-practice-4101/KMSitesContent/gdo1/JavaSkills/Skills_TOC/Hibernate_L1_LG.aspx

Author: saigeetha.danda@wipro.com

Date: 6th June 2018

ToC :

Topic No.	Topic	Sub Topics	Min No.of Assignments
1	ORM Overview,Hibernate Overview& Architecture	1. Pros and Cons of JDBC, Why ORM, What is ORM, Java ORM Frameworks 2. Hibernate Advantages, Supported Databases, Supported Technologies 3. Configuration Object, SessionFactory Object, Session Object, Transaction Object, Query Object, Criteria Object	1
2	Hibernate Configuration ,Sessions ,Mapping Files & Mapping Types	1. Hibernate Properties, Hibernate with MySQL database 2. Hibernate Sessions, Session Interface Methods 3. Hibernate Mapping Files 4. Primitive types, Date and time types, Binary and large object types, JDK-related types	1
3	Hibernate O/R Mapping - Collection Mappings	1. Collections Mappings - Hibernate Set Mappings; Hibernate SortedSet Mappings; Hibernate List Mappings; Hibernate Bag Mappings; Hibernate Map Mappings; Hibernate SortedMap Mappings;	2
4	Hibernate O/R Mapping - Association Mappings	1. Association Mappings - Many to One; One to One; One to Many; Many to Many	2
5	Hibernate Query Language	1. FROM Clause, AS Clause, SELECT Clause, WHERE Clause, ORDER BY Clause, GROUP BY Clause, Using named parameters - UPDATE Clause, DELETE Clause, INSERT Clause, Aggregate Methods, Pagination using Query	2
6	Hibernate O/R Mapping - Component Mappings	1. Component Mappings	2
Total Min No.of Assignments			10

Topic 1: ORM Overview, Hibernate Overview & Architecture

Assignment 1:

Write a Hibernate program to create an employee table in the backend and insert 5 employee objects into the database.

The following are the details of the employee table.

Name Varchar2, EmpId Number(should be auto incremented), Designation Varchar2, Salary Number

Assignment 2:

Write a Hibernate program to create a Product table in the backend and insert 10 product objects into the database.

The following are the details of the Product table.

ProductName varchar2, ProductId Number, Price Number

The value of the ProductId should be taken from a sequence which is created at the backend

Topic 2: Hibernate Configuration & Sessions

Assignment 1:

Write an Employee class with the Members employee ID, employeeName and employeeBand.

Implement a client Code to Save, Delete, Update and Read Employee Object.

Assignment 2:

The ABC LTD Company hires employees and wants to computerize employee-salary record maintenance. The company maintains a database of employees in Oracle. The employee table contains information related to employee and is shown in the following employee table structure.

Column Name	Type	Constraint
Empcode	Number (4)	Primary Key
EmpName	Varchar (20)	Not Null
EmpDesignation	Varchar (4)	Not Null

EmpDOB	Date	Not Null
EmpJOD	Date	Not Null
EmpAge	Number (2)	Not Null
EmpBasic_Pay	Decimal (8,2)	Not Null

When a new employee joins the company, the employee record is created in the employee table. EmpCode should be auto generated using sequences. The valid employee details are as follows:

- Empname: Valid value can contain maximum 20 letters in uppercase
- EmpDesignation: Valid value is one of these - SE, SSE, SS, SSS
- Age: Must be in the range ≥ 18 and ≤ 60
- Basic_Pay: Must be greater than or equal to 6000

And last difference between employee joining date and date of birth must be greater than 18 years

Write a Java program to insert some records to the table

When an employee leaves the company, the record related to that employee needs to be deleted from the employee table.

Upon deletion the employee details must be stored in another table named employeeLogTab which will maintain the details such as Employee Code, Employee Name, Designation, Last drawn salary, and Leaving_date.

Topic 3 : Hibernate O/R Mapping - Collection Mappings

Assignment 1:

Create a program to persist the following class object using Collection Mapping:

```
Public class Question{  
Private int id;  
Private String qname;  
Private List options;  
Private String answer.  
}
```

Assignment 2 :

Create a program to persist the following class 10 objects using Collection Mapping:

```
Public class Continent{  
Private String cname;  
Private Map<Country,Capital> countries;  
}
```

Note : Countries property should of type Map object with Country class object as key and Capital class object as value

Assignment 3:

Create a program to persist the following class 10 objects using Collection Mapping:

```
Public class Album{  
Private int albumid;  
Private String aname;  
Private Map<String,List<String>> photos;  
}
```

Note : photos property should be of type Map. Key is event name like Engagement, Marriage & Reception etc... and the Value is list of photos for each and every event like e1,e2,m1,m2,r1,r2 etc..

Topic 4: Hibernate O/R Mapping - Association Mappings

Assignment 1:

Write a Department class and Employee class such that one department can hold multiple Employee objects. (One-to-Many)

Implement a client code such that, when we save or delete Department object, automatically Employees of the Department should be stored or deleted in a related table.

Note: you can add any appropriate class members.

Assignment 2:

Write an Employee class and Passport class such that, one employee object should hold only one passport object (one-to-one).

Implement a client code such that when we save or delete Employee object, automatically passport object should be stored or deleted in a related table.

Note: you can add any appropriate class members

Assignment 3:

Write a Student and Course class such that one student can hold multiple course object. Implement a Client code such that one student can opt for multiple courses. Similarly same course be opted by multiple students (many-to-many).

Note: you can add any appropriate class members

Topic 5: Hibernate Query Language

Create a Car table like below...

RegNo	Model	Color	Manufacturer	Price
KL-07 AB 123	Polo	White	Volkswagen	700000
KL-07 AB 234	Vento	Black	Volkswagen	600000
KL-07 AC 345	Corolla	Silver	Toyota	1000000
KL-07 BC 123	Sail Uva	Red	Chevrolet	500000

Assignment 1 :

Write a Hibernate program Display the details of all the cars from the above table by using HQL

Assignment 2:

Write a Hibernate program to display only the Manufacturer's names which are starting with 'V' from above table

Assignment 3:

Write a Hibernate program which will ask the user to enter a registration number and display the details of that Vehicle. Assign the value to the query using a label.

Assignment 4:

Write a Hibernate program to display only the list of cars which are having price less than 6 lacs from above table

Topic 6: Hibernate O/R Mapping - Component Mappings

Assignment 1:

Write an Employee class with the Members employeeID, employeeName, and employeeSalary. Implement a Two subclass by name RegularEmployee with the member name *qplc* and ContractEmployee with the member name *allowance*. Write a client class such that, when you save/delete Regular Employee or Contract employee class object, appropriate information should be stored or deleted from the related table using "Table per subclass Approach".

Assignment 2:

Write an Employee class with the Members employeeID, employeeName, and employeeSalary. Implement a Two subclass by name RegularEmployee with the member name *qplc* and ContractEmployee with the member name *allowance*. Write a client class such that, when you save/delete Regular Employee or Contract employee class object, appropriate information should be stored or deleted from the related table using "Table per hierarchy Approach".

Assignment 3:

Write an Employee class with the Members employeeID, employeeName, and employeeSalary. Implement a Two subclass by name RegularEmployee with the member name *qplc* and ContractEmployee with the member name *allowance*. Write a client class such that, when you save/delete Regular Employee or Contract employee class object, appropriate information should be stored or deleted from the related table using "Table per concrete class Approach".