

LAB WORKBOOK

19CS2107ENTERPRISE PROGRAMMING



Team EP

K L UNIVERSITY | ENTERPRISE PROGRAMMING – 19CS2107

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**LABORATORY WORKBOOK**



STUDENT

NAME

REG. NO 

YEAR

SEMESTER 

SECTION

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**Organization of the STUDENT LAB WORKBOOK**

The laboratory framework includes a creative element but shifts the time-intensive aspects outside of the Two-Hour closed laboratory period. Within this structure, each laboratory includes three parts: Prelab, In-lab, and Post-lab.

**a. Pre-Lab**

The Prelab exercise is a homework assignment that links the lecture with the laboratory period - typically takes 2 hours to complete. The goal is to synthesize the information they learn in lecture with material from their textbook to produce a working piece of software. Prelab Students attending a two-hour closed laboratory are expected to make a good-faith effort to complete the Prelab exercise before coming to the lab. Their work need not be perfect, but their effort must be real (roughly 80 percent correct).

1. **In-Lab**

The In-lab section takes place during the actual laboratory period. The First hour of the laboratory period can be used to resolve any problems the students might have experienced in completing the Prelab exercises. The intent is to give constructive feedback so that students leave the lab with working Prelab software - a significant accomplishment on their part. During the second hour, students complete the In-lab exercise to reinforce the concepts learned in the Prelab. Students leave the lab having received feedback on their Prelab and In-lab work.

**c. Post-Lab**

The last phase of each laboratory is a homework assignment that is done following the laboratory period. In the Post-lab, students analyse the efficiency or utility of a given system call. Each Post-lab exercise should take roughly 120 minutes to complete.



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2019-20 EVEN SEMESTER LAB CONTINUOUS EVALUATION

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**SUBJECT CODE: 19CS2107**

**ENTERPRISE PROGRAMMING WORKBOOK**

**XML #1**

**Date of the Session: \_\_\_/\_\_\_/\_\_\_** **Time of the Session: \_\_\_\_\_to\_\_\_\_\_\_**

**Prerequisite:**

* **Basic understanding of HTML tags.**
* **Differences between HTML and XML and its uses.**
* **Idea on tags of XML.**

**Pre-Lab Task:**

1. What is the full form of XML?
2. What if the full form of DTD?

3)What is the full form of XSD?

4)What are the rules to be followed to create Well Formed XML Documents.

5)Write down the functionalities and syntax of the below mentioned.

1. XML Naming Rules
2. XML Element
3. XML attributes
4. <! DOCTYPE>

1. <! ELEMENT>
2. <! ATTLIST>



1. simpleType
2. complexType

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1. Write down the functionalities of the below mentioned in DTD - Attributes
   1. CDATA
   2. PCDATA
   3. Default value
   4. #REQUIRED
   5. #IMPLIED
   6. #FIXED *value*



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1. As you’re in the very beginning stage of learning how to create a XML document.

Write an XML to accept student details [Name, ID, Branch and CGPA] for minimum 5 students.

<class>

<student>

<name> ABC </name>

<id> 001 </id>

<branch> IT </branch>

<cgpa> 9 </cgpa>

</student>

<student>

</student>

….

</class>

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**In Lab Task:**

* 1. Write a program for Books store, and the XML file is created that contains the information about five books and displaying the XML file using CSS.

<books>

    <heading>Welcome ToEnterprise Programming</heading>

    <book>

        <title>Title -: Web Programming</title>

        <author>Author -: Chrisbates</author>

        <publisher>Publisher -: Wiley</publisher>

        <edition>Edition -: 3</edition>

        <price> Price -: 300</price>

    </book>

….

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</books>

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**Post Lab Task:**

1. Write a program for Books store, and the XML file is created that contains the information about five books of different categories and displaying the XML file using CSS.

* Action and **Adventure**.
* Classics.
* Comic Book or **Graphic Novel**.
* Detective and Mystery.
* Fantasy.
* Historical Fiction.
* Horror.
* Literary Fiction.



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**2.XML Validation #2**

**Date of the Session: \_\_\_/\_\_\_/\_\_\_** **Time of the Session: \_\_\_\_\_to\_\_\_\_\_\_**

**Prerequisite:**

* **Basic idea on XML Tags.**
* **Designing of Well-formed XML documents**
* **Knowledge on XML document validation against DTD & XSD**

**Pre-Lab Task:**

**Problem Description**

1. Write a program for Students information, and the XML file is created that contains **Student [id, regno, name, avg, dob, time, mobileno, distinction**], the information about five students of different categories and displaying the XML file.

Sample Template:

**<students\_info>**

**<student>**

<regno>170024</regno>

<name>ABC</name>

<avg>92</avg>

<dob>15-08-1992</dob>

<time></time>

<mobile no="9849984900"/>

<distinction>YES</distinction>

**</student>**

**<student>**

**</student>**

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…

**</students\_info>**

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**In Lab Task:**

1. Create a DTD for Student information and the XML file contains,

**Student[id, regno, name, avg,dob,time,mobileno,distinction**], the information about five students of different categories and displaying the XML file.for minimum 5 students.

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**Post Lab Task**

1. Create a **XSD** for Student information and the XML file contains,

**Student[id, regno, name, avg,dob,time,mobileno,distinction**], the information about five students of different categories and displaying the XML file.for minimum 5 students.

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**XSLT#3**

**Date of the Session: \_\_\_/\_\_\_/\_\_\_** **Time of the Session: \_\_\_\_\_to\_\_\_\_\_\_**

**Prerequisite:**

* **General Idea on HTML Tags.**
* **Idea on XML documents and Tags**
* **Basic idea on XML**Stylesheet Language Transformations

**Pre-Lab Task:**

1. Create XML document which store the information about Library/Bookstore. more than 5 books.

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**In Lab Task:**

1.Create XML document which store the information about Library/Bookstore. more than 5

books.to transform XML documents into other formats (like transforming XML into HTML).

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**Post Lab Task:**

1. Creating the XML file that contains the information about five students and displaying the XML file using XSLT.

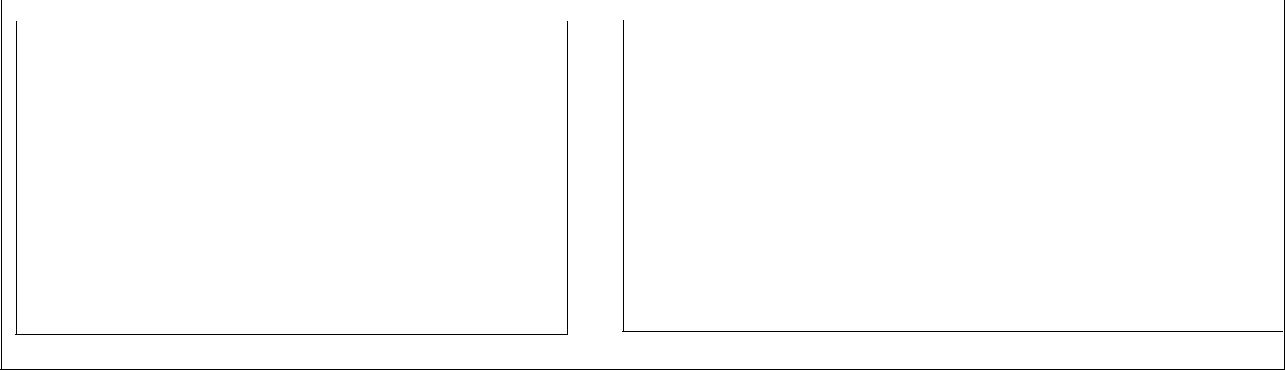
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**JDBC #4**

**Date of the Session: \_\_\_/\_\_\_/\_\_\_** **Time of the Session: \_\_\_\_\_to\_\_\_\_\_\_**

**Prerequisite:**

* **How a java program is connected to database**
* **Basic SQL commands to perform ‘CRUD’ operations**

**Pre-Lab Task:**

1.

a. List out different kinds of JDBC drivers.

b. Write the steps involved in connecting any java application with data base using JDBC.



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1. Write a small description and syntax for the following methods:
   1. forName()
   2. registerDriver()
2. getConnection()
3. createStatement()
4. prepareStatement()



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1. executeQuery()
2. executeUpdate()
3. close()
4. setBinaryStream()
5. setCharacterStream()
6. available()



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1. Write a java program which executes the given SQL queries.

(NOTE: create a table ‘student’ with attributes to store the student’s id(number),name(varchar2),age(number) manually in database)

 Add the following records into the ‘student’ table.

|  |  |  |
| --- | --- | --- |
| **Id** | **name** | **age** |
| 1 | Felix | 20 |
| 2 | jack | 19 |
| 3 | mark | 21 |

 Print the details of the students whose age is less than 21.

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**In Lab Task:**

1. Dany went to the kings landing supermarket and bought some groceries. As a vendor you have to ask the numbers of items she bought and store the itemid, itemname, cost of the items and store them in the ‘sales’ table of database and also execute an SQL query to find the total cost and list out the item she bought.

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2. A workshop based on web development is being conducted in the university. Now James wants to know how many members of his class are interested in it and their details.

* 1. He created a new table namely Student in the Oracle Database with columns: Student\_ID, Student\_Name, Email, Date\_of\_Birth.
  2. He stored some records into the Student table.
  3. He needs to collect ID numbers and contact numbers of the interested students in a new table called"Workshop".
  4. He wants to retrieve name and email address from the student table and update the Workshop table by creating 2 new columns and inserting the respective details.
  5. If a student, suddenly wants to drop from attending the workshop, James is supposed to delete the student's data from workshop table.

Write the Java programs for the above situations using JDBC API.

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**Post Lab Task**

1. Tony is a wildlife photographer. He went to Amazon rainforest to explore the beauty of the flora and fauna. He captured pictures of different trees and animals. He also described each animal and plant in a separate notepad. Now he wants to save the name, the category (animal
   * plant), its image and the description file of the species into a database. Help Tony by providing him with an executable java program.
     1. Create a table with columns Name, Category, Image and Description\_File before executing the file.
     2. The name, category, path of the image(.jpg), path of the description file (.txt) should be read as input from the console.

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1. After exploring the dense forest, Tony returns to home and wants to publish his work in a magazine. He is supposed to give the information to the publisher in the following way.
   1. Two folders namely Animals and Plants should be created on desktop
   2. The image of every animal should be saved as "animal\_name.jpg" and the description file as "animal\_name.txt" in the Animal folder
   3. Similarly, the image of every plant should be saved as "plant\_name.jpg" and the description file as "plant\_name.txt" in the Plant folder

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**Servlets #5**

**Date of the Session: \_\_\_/\_\_\_/\_\_\_** **Time of the Session: \_\_\_\_\_to\_\_\_\_\_\_**

**Prerequisite:**

* Servlets and their applications.
* ‘CRUD’ operations in SQL.

**Pre-Lab Task:**

1. Write a note on servlet and its life cycle.
2. Draw the Structure of directories that are to be created under Tomcat’s ‘webapps’ folder.



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1. Create a project named ‘myservice’ and using servlets make a service which prints “Welcome to Servlets!!” on to the server console. The class must be named ‘FirstServlet’ and the URL pattern must be ‘/your\_name’.

Add another service into the same ‘myservice’ project which prints “Bye to Servlets!!” on to the server console. Name the class ‘SecondServlet’ and set URL pattern to ‘/your\_name143’. (Hint: Modify the ‘web.xml’ file by adding another servlet name and URL pattern.)

Check the working condition of both the services.

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**In Lab Task:**

1. A professor from K L University after 21 years of Work he decided to retire from his job and before he leaves, he wants to get feedback about him from all his students. As you are his favorite student, he asked you for help, so, you decided to make a Web app using servlets in which the students must first register and then login into it with the registered credentials, which in turn gives a page and Asks for remarks , the students can type and submit their views in it and this login credentials and remarks must be stored into ‘farewell’ table in database. He wants everyone to register and login because he wants to know how every particular student think about him.

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**Post Lab Task**

1. Create a login Servlet which on login retrieves and Displays the Previous Remark Given by you. You must also provide an Update Remark Text Field in which the student can type a new remark and replace the previous remark with it. For login, use the credentials that are in the ‘farewell’ table.

**Use Eclipse IDE for ease of the task.**

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**JSP(Java Server Pages) #6**

**Date of the Session: \_\_\_/\_\_\_/\_\_\_** **Time of the Session: \_\_\_\_\_to\_\_\_\_\_\_**

**Prerequisite:**

* **Knowledge of JSP.**
* **Basic SQL commands to perform ‘CRUDs’ operations**

**Pre-Lab Task:**

1. Clarify in detail each phase of JSP lifecycle.



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2. Print Current date and time on the screen utilizing JSP.



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**In Lab Task:**

1. Julie needs to set up a startup. Make Registration for web based shopping entrance made by her. Make an enrolment page where users can create an account for themselves.



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**Post Lab Task**

1. From previous problem, after client registers, demonstrate a login page where client can login just on the off chance that he submits right certifications.

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**SUBJECT CODE: 19CS2107**

**ENTERPRISE PROGRAMMING WORKBOOK**

**SESSION HANDLING#7**

**Date of the Session:** **/** **/** **Time of the Session: \_\_\_to\_\_\_**

**Prerequisite:**

* Basic idea on Session handling techniques.

**Pre-Lab Task:**

1. What is session tracking? Why is session tracking used?

1. What are different types of session tracking techniques? Write few real-life examples for each session tracking technique.
2. Understand how a cookie works. Write syntax to create a cookie and store values, access and delete them.



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**In Lab Task:**

1. Kamal needs to login to his Gmail account but he forgot his secret password. Create a login form where he enters his username and password. As password is wrong, show a message which says

“Wrong Password” and forgot password link is shown. When user clicks it, use URL redirect method to display username entered in login form and change his password by displaying password field.

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1. Udemy is a site which gives online courses of various domains. This site chooses the cost of the course dependent on number of visits to the site from your account. If number of visits are more, cost is more. Discover number of times client tapped on any course from his account.

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**Post Lab Task:**

1. Sharan needs to pay his college fee on the web. So, he opens online banking site and logins with right accreditations. In the wake of signing in, show another structure which contains fields like username, college name, amount to be paid. After that, put username, school name and amount to be paid in session scope. Show a message "You are paying to 'college name' Rs. 'amount' " and a continue button. If client clicks continue, show a bill and end the session.

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**ENTERPRISE PROGRAMMING WORKBOOK**

**HIBERNATE-1#8**

**Date of the Session:** **/** **/** **Time of the Session: \_\_\_to\_\_\_**

**Prerequisite:**

* Basic idea on Hibernate

**Pre-Lab Task:**

1. What is ORM tool?
2. Disadvantages of JDBC/ Advantages of Hibernate/ Difference between the JDBC and Hibernate
3. Name the 4 layers of hibernate architecture



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4. Write the syntax of mapping of xml and configuration of xml?



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**In Lab Task:**

1. Sreenivas, the proprietor of a rice mill, needs to keep up the information about the rice bags produced at his mill. He wants to save the cost, type of the rice (polished/ non-polished) and amount in kilograms for each bag. Write a hibernate application to insert the details of bags manufactured. The application should ask the user whether he wants to insert a details of a bag each time until he says 'no'. For every 'yes' it should gather the details of the bag i.e, the id number, amount, cost and type.

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1. Now Sreenivas, wants to sell a bag to a customer. he knows the id number of the bag and needs to retrieve the cost. Sreenivas doesn't encourage bargaining. So if the customer wants to buy the bag at the same value then he sells the bag and erases information about that bag. Write the hibernate application which asks the id number of the bag, displays the price of that bag, and then asks whether the customer wants to purchase the bag or not. If 'yes' then the details of the bag should be erased. (Note: Write only the java file with logic. While executing, implement the POJO, mapping, configuration files of previous question, since we are operating on same data)

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**Post Lab Task:**

1. Gokul Fabrics has wide range of various fabrics in different colours. The owner of the shop needs to keep up the information of the fabrics he have. He want to save the type, colour, available length and cost per metre for each fabric. He also wants to update the length of the fabric when he sells it to the customer.
   1. Write a Hibernate application to insert the details of the fabric.
   2. Write a Hibernate application which requests the id number of the fabric and its length sold, displays the total selling cost and then updates the data with the remaining length.

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**HQL, HCQL #9**

**Date of the Session:** **/** **/** **Time of the Session: \_\_\_to\_\_\_**

**Prerequisite:**

* Basic idea on Hibernate Query Language, Query Interface
* Basic idea on hibernate Criteria Query Language

**Pre-Lab Task:**

1. Write the HQL query to find the count of red colored bottles and of quantity 1 litre.

1. Write the HQL query to get data of the first 10 bottles which are microwave safe ( i.e, the value of microwave safe is “yes”) in ascending order with respect to the quantity.
2. Write the HCQL query to get the 15th to 30th record.



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1. Write the HCQL query to get the records who salary is greater than 150000.

5. Write the HCQL query to get the records in ascending order on the basis of salary.



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**In Lab Task:**

1. Stoins is the manager of Minimal Cube company. He maintains the records of employees working in his company. Create a java class where he gets and sets the values of EmpID, EmpName, EmpSalary, EmpAddress. Use Hibernate Frame-work to reduce manual work. When employees are terminated he is likely to delete the record of employee in his database and update the data when it is required. After performing all the operations he is likely to know the employees working in his company at the end of every month, so retrieve the data those who are working in his company. Create separate java class for retrieving, updating and deleting so that the Mr. Stoins can easily work when an employee data needs to update, delete or retrieve. Use Concept of HCQL (Hibernate Criteria Query Language).

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**Post Lab Task:**

1. Mr. Deekshit is running an Online Shopping website where shopping take place in his website regularly. So he decided to maintain two different tables namely ORDER containing attributes like ID, ORDERDATE, ORDRENUMBER, CUSTOMERID, TOTALAMOUNT where ID is primary key and another table describing CUSTOMER (ID, FIRSTNAME, LASTNAME, CITY, COUNTRY, PHONE) where ID will not have a null value. By using JOINS through Hibernate Frame-work help Mr.Deekshit to know the details of customer and items customer purchased. Display Order-number, Total-amount, First-name, Last-name, City, Country using ORDER.ID and CUSTOMER.ID.

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**INHERITANCE MAPPING #10**

**Date of the Session:** **/** **/** **Time of the Session:** \_\_\_**to**\_\_\_

**Prerequisite:**

* Basic idea on Hibernate Framework

**Pre-Lab Task:**

1. What is Inheritance Mapping and List out Inheritance Mapping Hierarchy.

2. Explain each Type of Hierarchy.



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In Lab Task:

1. A Bank Customer wants to try Inheritance through Table per class Hierarchy so he created a base class named Payment, containing attributes like paymentId, amount and two derived classes namely CreditCard consisting type of CreditCard they used and Cheque containing type of cheque. So, when the object of derived class is saved, object of base class will also get stored in the database in a single table. To know the Object of which class is stored we must use the Discriminator column. Apply Concept of Table per Class Hierarchy through Hibernate Frame Work.

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1. Mr. Robert Hiezman is a Manager at Company. Create a class where it gets and set the values like name and Id of employee. They hire different types of employees like regular employee who has salary, bonus they get and contract employee who has amount they earn per hour and time duration they work. Use Concept of Table per Concrete Class Hierarchy through Hibernate FrameWork and observe the Structure of data stored in the database.

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Post Lab Task:

1. From the Bank-Payment Scenario use the concept of table per subclass Hierarchy using Hibernate FrameWork and observe how it works and storing data in database.

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**SPRING FRAMEWORK #11**

**Date of the Session: \_\_\_/\_\_\_/\_\_\_** **Time of the Session: \_\_\_\_\_to\_\_\_\_\_\_**

**Prerequisite:**

* General idea on Spring Framework
* Modules of Spring Framework

**Pre-Lab Task:**

1. What is a spring?
2. Name some of the important spring Modules?

3. What are the tasks performed by IOC container?

4. How many types of IOC containers are there? Explain them?



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**In Lab Task:**

1. Geetha is creating a website which displays the marks of student from two different java classes. So, define two different java beans and input attributes in Student.java like studentId, studentName and Marks.java which containing clear segregation of marks scored in each subject. Use Spring FrameWork to display all the details of each student to the browser.



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1. Mr.Deepak is very keen and interested to overcome tightcoupling in java so he used Spring Framework with Dependency injection mechanism, he created a class traveler containing an interface vehicle and a method startJourney calling a move method when a journey starts. He creates another two classes bike and car which implements the vehicle class, creates a object for vehicle when a journey starts. To know which vehicle is being used he is calling the method move with vehicle object so that the message will display which is present in implemented classes.



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**Post Lab Task:**

1. Ms.Varsha wants to develop an application using Spring FrameWork to display all the details of each employee to the browser. It displays the address of employee from two different java class, so define different java beans and input attributes in Employee.java like empId, empName and Address.java which contains clear address of each person.



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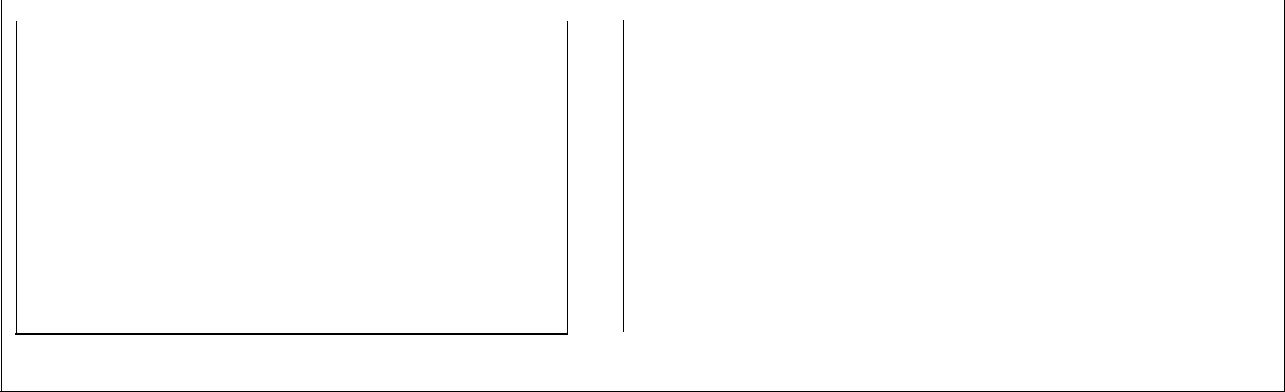
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**HIBERNATE-SPRING INTEGRATION #12**

**Date of the Session: \_\_\_/\_\_\_/\_\_\_** **Time of the Session: \_\_\_\_\_to\_\_\_\_\_\_**

**Prerequisite:**

* **Basic knowledge on hibernate and spring integration**

**Pre-Lab Task:**

1. Explain the concept of Integration of Spring-Hibernate Framework.

2. List out few advantages of Integration.



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1. List out Methods of Hibernate-template class and write description about it.



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**In Lab Task:**

1. The NavodayaJohar school is wanting to direct a get-together of their 2014-2015 batch students. To design this occasion and oversee, principal appointed a student from a similar batch. To do this the student needed to make hibernate application with spring application. He initially made a table in database to store the subtleties of his companions who are going to the gathering. He made the table with the name Reunion with properties ID No, Name, Contact Number, Amount paid, and Status. ID.NO being the primary key has the most extreme size of 4 digits and Status speaks to how much sum has been paid i.e; completely paid, or partially paid, or not paid. Note that the sum should be paid to go to the gathering is 2000 rupees. Now he needs to make a java project with springs and hibernate integration. Help him in Creating three unique classes for inserting subtleties in database. First make a class for inserting the details of the students who are going to the get-together gathering. Presently make another class for retrieving the amount paid by the students.



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**Post Lab Task:**

1. Now to the extension to the last question create a class file in the same java project for updating the database If the student want to pay the amount then update the amount in data base and print the total amount he paid till then and if he had paid the total amount the change the status to fully paid. If not then show the amount that need to be paid by him. Also create a class file for deleting the details of students who cancelled their plan of going go get-together as a result of some issues.

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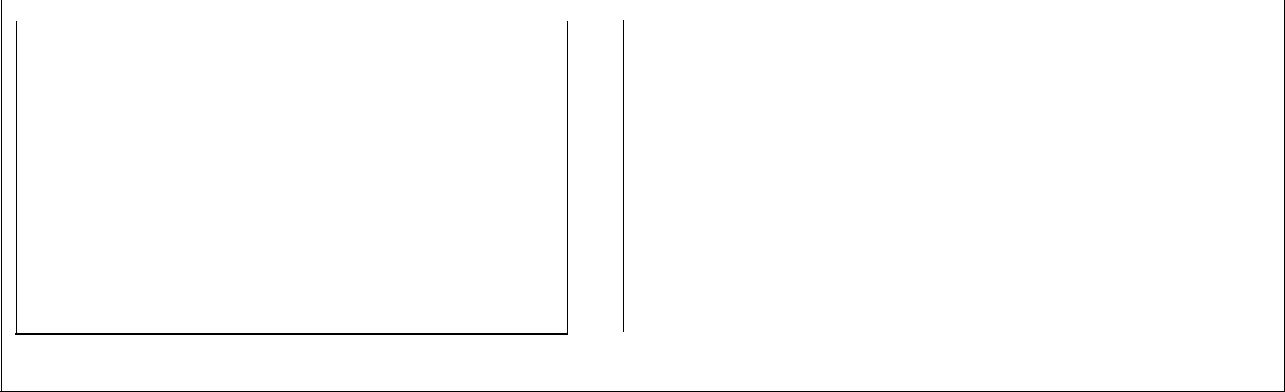
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**SPRING-DAO #13**

**Date of the Session:** **/** **/** **Time of the Session: \_\_\_to\_\_\_**

**Prerequisite:**

* Basic idea on Spring -DAO

**Pre-Lab Task:**

1. What is DAO?

2. Why do we use DAO?

3. What are the problems faced if data is accessed directly without objects?



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4. write a short note on the participants in DAO pattern.



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**In Lab Task:**

1. Revanth is a student who has a great startup plan but he wants students to work with him. So, students who are interested in startup can contact him. Revanth decided to conduct an interview for the interns and store the details who appeared (Name, ID,

Mail, skills of every student) in the “student” table (Name varchar2(30), ID number,

Mail varchar2(30), skills varchar2(100)). He Inserts all the details of people during interview and deletes the details people who are below par at the end of the day. So, by using “Data Access object” pattern create a student object which act as a model and create a concrete class and implement Data Access Object Interface and use a Democlass to access the insert, delete methods.

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**Post Lab Task:**

1. To continue with the previous problem, later some students approached Revanth to add some changes to their details and he also wants to display the people who are in list at the end of every day. So Revanth decided to add update and display methods to the DAO pattern.

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19CS2107 ENTERPRISE PROGRAMMING

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*(For Evaluator’s use only)*

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|  |  |  |  |  |  |  |  |  |  |
|  | Comment of the Evaluator (if Any) | | |  |  | Evaluator’s Observation | |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Marks Secured: \_\_\_\_\_\_\_ out of \_\_\_\_\_\_\_\_ | | |  |  |
|  |  |  |  |  | Full Name of the Evaluator: | | |  |  |
|  |  |  |  |  | Signature of the Evaluator Date of Evaluation: | | |  |  |
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