Assignment:
Java Advanced

Overview: This assignment has four exercises, each for around 60 minutes. You are expected to complete the course/ reference reading before attempting the exercise. On completion of the exercises, you will be able to achieve the following objectives.

S.No	**Exercise**	**Description**	**Learning Objective**
1	Develop a Persistent Java application to develop user management system	This exercise is to use JDBC API and its operations in a Java application.	Use the Java Database Connectivity API and its operations in Java application.
2	Develop a Persistent Java application JDBC CRUD Operations	This exercise is to use the JDBC API and its operations in a Java application.	Switch between the directories to locate the files from different locations.
3	Write jUnit test cases for the java application modules.	This exercise is to write the jUnit test cases for the functionalities captured in java code.	Use jUnit test cases for the java code.
4	Configure Log4J for any existing java projects.	This exercise is to configure Log4J for any existing java project.	Use Log4J for existing java project.

Java with Database Connectivity, jUnit, Log4J

Exercise 1: Implement Java Database connectivity

Your website needs to maintain a database for all registered users visiting the site. For this purpose, as an

administrator of the website you need to save the data of a new user in the user's database and allow them to Login for all subsequent visit.

i) During Registration, the following data need to be captured:

First Name, Last Name, Date of Birth, Email ID, Contact Number, Choosen username, Choosen password

ii) During Login, the following data need to be captured:

Username, Password

Verify the user login details against database user entity values. If the credentials will match, report the user on successful login otherwise report an error message to user.

Implement the above use case in a Java Application using JDBC API.

Recommended duration: *60 minutes*
Solution Guidance (if applicable): Use **Oracle database.**

Exercise 2: JDBC CRUD Operations

Write a Java application using JDBC API to implement CRUD operations on a Product object.

A Product entity has the following attributes: Product code, Product Name and Product Price. Your application should provide below functionalities:

i) Add a new product
ii) Update/Modify an existing product details
iii) Delete a product no longer being used in the system
iv) List all available products
v) Search a product by product code.

Recommended duration: *60 minutes*
Solution Guidance (if applicable): Use **Oracle database**

Exercise 3: jUnit testing

Write jUnit test cases for the Data Access Objects identified for User management and Product management system.

Recommended duration: *60 minutes*
Solution Guidance: Use jUnit 4.0 in Eclipse IDE

Exercise 4: Configure Logging using Log4J
Create a **log4j.properties** file and configure logging using property based configuration for an existing java project.
Recommended duration: *60 minutes*
Solution Guidance (if applicable): Use jUnit 4.0 in Eclipse IDE