Week-3 Lab Assignment   **Date: April 25, 2025**

Note:

1. Students will write the JAVA code for the following programming assignments and will execute through Command Prompt or Eclipse IDE.

2. After successful execution, all the executed code and output needs to combine in a single PDF file to submit.

3. Submit the pdf file on Moodle link:

    http://moodle.kiet.edu/moodle/mod/assign/view.php?id=26731

Problem Statements:

3.1   Write a Java program to create a class called "Person" with a name and age attribute. Create two instances of the "Person" class, set their attributes using the constructor, and print their name and age.

3.2   Write a Java program to create a class called "Dog" with a name and breed attribute. Create two instances of the "Dog" class, set their attributes using the constructor and modify the attributes using the setter methods and print the updated values.

3.3   Write a java program to illustrate the concept of method overloading without constructor.

3.4   Write a Java program to demonstrate constructor overloading using both default constructor and parameterized constructor.

3.5   Write a Java program to create a class known as "BankAccount" with methods called deposit() and withdraw(). Create a subclass called SavingsAccount that overrides the withdraw() method to prevent withdrawals if the account balance falls below one hundred.

3.6   Write a Java program to create a class called Animal with a method named move(). Create a subclass called Cheetah that overrides the move() method to run.

3.7   Write a Java program to create a class known as Person with methods called getFirstName() and getLastName(). Create a subclass called Employee that adds a new method named getEmployeeId() and overrides the getLastName() method to include the employee's job title.

3.8   Write a Java program to create a class called Shape with methods called getPerimeter() and getArea(). Create a subclass called Circle that overrides the getPerimeter() and getArea() methods to calculate the area and perimeter of a circle.

3.9 Write a Java program to create a vehicle class hierarchy. The base class should be Vehicle, with subclasses Truck, Car and Motorcycle. Each subclass should have properties such as make, model, year, and fuel type. Implement methods for calculating fuel efficiency, distance traveled, and maximum speed.

3.10 Write a Java program that creates a class hierarchy for employees of a company. The base class should be Employee, with subclasses Manager, Developer, and Programmer. Each subclass should have properties such as name, address, salary, and job title. Implement methods for calculating bonuses, generating performance reports, and managing projects.