OBject oriented programming with java

Lab manual

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**Course Title:** Object Oriented Programming

**Course Code:**

**Course Outcomes:**

At the end of the course the student should be able to:

1. Apply Object Oriented Programming concepts to solve a given problem.
2. Apply design patterns to design a solution for a given problem.
3. Apply inheritance, polymorphism and exception handling mechanism to implement reusable, robust java programs.
4. Implement user interface java programs for a given scenario.

**List of Practical**

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| **Sr.#** | **Week** | **Topics** |
| 1 | One | Introduction to IDE-NetBeans, Getting Started with Java |
| 2 | Two | Java Basics (Input/output, variable declaration and initialization, strings and arrays) |
| 3 | Three | Java Basics (Selection Structure and Iterative Structure, functions) |
| 4 | Four | OOP (creating classes, objects, constructors) |
| 5 | Five | access modifiers, inheritance |
| 6 | Six | multiple/multilevel inheritance |
| 7 | Seven | Function overriding |
| 8 | Eight | Polymorphism |
| 9 | Nine | abstract classes and interfaces |
| 10 | Ten | exception handling and Java file handling |

**Introduction to NetBeans and Java**

**LAB-1**

**OOP (polymorphism)**

**LAB-8**

Polymorphism is the ability of an object to take on many forms. The most common use of polymorphism in OOP occurs when a parent class reference is used to refer to a child class object.

class Animal {

public void animalSound() {

System.out.println("The animal makes a sound");

}

}

class Pig extends Animal {

public void animalSound() {

System.out.println("The pig says: wee wee");

}

}

class Dog extends Animal {

public void animalSound() {

System.out.println("The dog says: bow wow");

}

}

class MyMainClass {

public static void main(String[] args) {

Animal myAnimal = new Animal(); // Create a Animal object

Animal myPig = new Pig(); // Create a Pig object

Animal myDog = new Dog(); // Create a Dog object

myAnimal.animalSound();

myPig.animalSound();

myDog.animalSound();

}

}

**Task-1**

Write a program that have three Classes “Animal” “Horse” “Duck” takes number of legs from the user according the nature of the animal and then display the legs according to the nature of the animal.

**Task-2**

Write the above program and in main using array take 10 choices from the user “1” for Horse “2” for Duck and finally display the Choices that how many time Duck select and how many time Horse select and display number of legs.