Object Oriented Programming in Java Lab Sheet
II Year /I Part
Faculty: BCA

Lab sheet 3

Objectives:

1. To Familiarize with class and methods
2. To understand the concept of abstraction and encapsulation.
3. To understand the concepts of constructors
4. To Familiarize with polymorphism

Objective 1:

```
public class ClassAndMethodCreation {

	private void employeeInfo(String name, int age) {
		System.out.println("Name : " + name);
		System.out.println("Age : " + age);
	}

	private static void employeeContactInfo(String contactNo, String email) {
		System.out.println("Contact No : " + contactNo);
		System.out.println("Email : " + email);
	}

	public static void main(String[] args) {

		employeeContactInfo("123456789","ram@gmail.com");
		employeeInfo("Ram Dahal",40);
	}
}
```

Assignment:

1.1 What is the difference between employeeInfo and employeeContactInfo methods?
Correct the above code and display both employee and contact information.

1.2 Write a program to create a Student class, the attributes of this class is name, rollNo, faculty and phoneNo. In this class the member functions are setdata and displaydata.

1.3 Write a Java program to implement class mechanism. Create class, methods and invoke them inside the main method.

Objective 2:

```
abstract class EmpDetails {
	abstract void DisplayEmployeeInfo(String name, String address);
}

public class Employee extends  EmpDetails{
	@Override
	void DisplayEmployeeInfo(String name, String address) {
		System.out.println("Name : "+name);
		System.out.println("Address : "+address);
	}
	public static void main(String[] args) {
		Employee employee = new Employee();
		employee.DisplayEmployeeInfo("Ram Shrestha", "Baneshwor 1");
	}
    }
```

Assignment:

2.0 Explain abstract class. Execute the above program and write a correct output.

2.1 Write a program in java to generate an abstract class A also class B inherits the class A. generate the object for class B and display the text “call me from B”.

2.2 Write a java program in which you will declare an abstract class Vehicle inherits this class from two classes car and truck using the method engine in both display “car has good engine” and “truck has bad engine”.

Objective 3:

```
public class Employee {
	private String name;
	private String address;

	public Employee() {
		name = "Shankar Dahal";
		address = "Baneshwor 1";
	}

	public Employee(String name, String address) {
		this.name = name;
		this.address = address;
	}

	public String toString() {
		return "Name : "+name+"\nAddress : "+address;
	}

	public static void main(String[] args) {
		Employee employee1 = new Employee();
		System.out.println(employee1);
		employee1 = new Employee("Ramhari Dahal", "Banesshwor 11");
		System.out.println(employee1);
	}
}
```

Assignment:

3.0 Explain constructor and parametrized constructor. Execute the above code and write an output.

3.1 Write a program in JAVA to demonstrate the method and constructor overloading.

Objective 4:

Assignment:

4.0 Write a JAVA program that implements Compile time and Run time polymorphism.