Name-Priyansh Salian

Class-C3

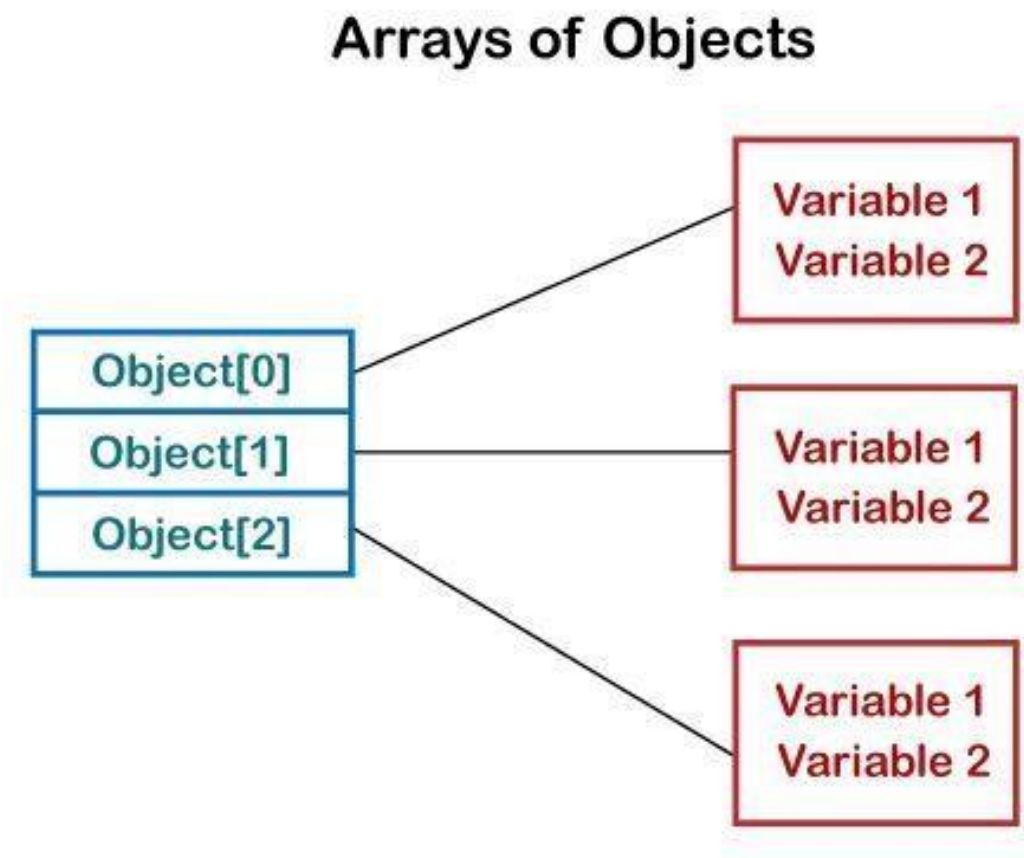
Roll No-2003148

EXPERIMENT-7

Array of Objects in Java

Java is an object-oriented programming language. Most of the work done with the help of **objects**. We know that an array is a collection of the same data type that dynamically creates objects and can have elements of primitive types. Java allows us to store objects in an array.

In Java, the class is also a user-defined data type. An array that conations **class type elements** are known as an **array of objects**. It stores the reference variable of the object.



Creating an Array of Objects

Before creating an array of objects, we must create an instance of the class by using the new keyword. We can use any of the following statements to create an array of objects.

Syntax:

ClassName obj[]=**new** ClassName[array_length];

OR

ClassName[] objArray;

OR

ClassName objeArray[];

Suppose, we have created a class named Employee. We want to keep records of 20 employees of a company having three departments. In this case, we will not create 20 separate variables. Instead of this, we will create an array of objects, as follows.

Employee department1[20];
Employee department2[20];
Employee department3[20];

The above statements create an array of objects with 20 elements.

A.

WAP to accept details of 5 employees like name, id, nohr. Depending upon the number of hours a prson has worked, calculate his wages for a particular day @100 Rs. Per hr. Display the information in tabular format as:

Id	Name	No. of Hours	Wages

Also display the details of the employee who got highest payment amongst all

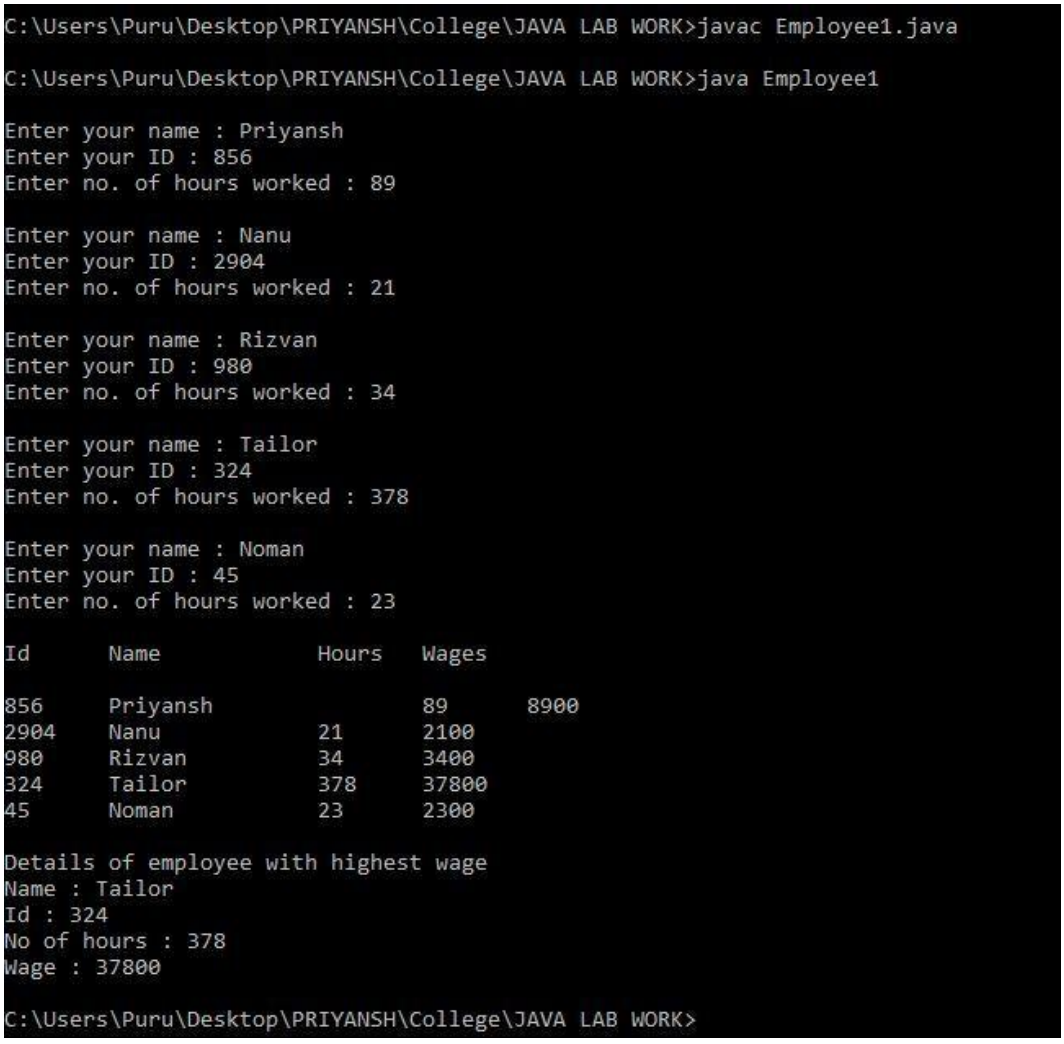
Program :

```
import java.util.Scanner;

class emp{
```

```
   int id,hours,wages;
   String name;
}

public class Employee1 {
   public static void main(String[] args) {
Scanner sc = new Scanner(System.in);        int
n=5,maxWage=0;
       emp[] e = new emp[n];

       for(int i=0;i<n;i++){
          e[i]=new emp();
          System.out.print("\nEnter your name : ");
          e[i].name=sc.next();
          System.out.print("Enter your ID : ");
          e[i].id=sc.nextInt();
          System.out.print("Enter no. of hours worked : ");
e[i].hours=sc.nextInt();
       }
       System.out.println("\nId\tName\t\tHours\tWages\n");
for(int i=0;i<n;i++){
          e[i].wages=e[i].hours*100;
          System.out.println(e[i].id+"\t"+e[i].name+"\t\t"+e[i].hou
rs+"\t"+e[i].wages);
maxWage=(e[i].wages>e[maxWage].wages) ? i : maxWage;
       }
       System.out.println("\nDetails of employee with highest
wage");
```

```
        System.out.println("Name : "+e[maxWage].name+"\nId :
"+e[maxWage].id+"\nNo of hours :
"+e[maxWage].hours+"\nWage : "+e[maxWage].wages);

    }
}
```

Output:



```
C:\Users\Puru\Desktop\PRIYANSH\College\JAVA LAB WORK>javac Employee1.java

C:\Users\Puru\Desktop\PRIYANSH\College\JAVA LAB WORK>java Employee1

Enter your name : Priyansh
Enter your ID : 856
Enter no. of hours worked : 89

Enter your name : Nanu
Enter your ID : 2904
Enter no. of hours worked : 21

Enter your name : Rizvan
Enter your ID : 980
Enter no. of hours worked : 34

Enter your name : Tailor
Enter your ID : 324
Enter no. of hours worked : 378

Enter your name : Noman
Enter your ID : 45
Enter no. of hours worked : 23

Id      Name            Hours   Wages

856     Priyansh                89      8900
2904    Nanu            21      2100
980     Rizvan          34      3400
324     Tailor          378     37800
45      Noman           23      2300

Details of employee with highest wage
Name : Tailor
Id : 324
No of hours : 378
Wage : 37800

C:\Users\Puru\Desktop\PRIYANSH\College\JAVA LAB WORK>
```

B.

Aim : For Annual Examination results of 5 students, taking into consideration marks obtained in three subjects, WAP to determine i . Determine Total marks obtained by each student ii. The student who obtained highest total marks.

Program :

```
import java.util.Scanner;

   class Student{
      int phy,chem,math,total;
      Scanner sc = new Scanner(System.in);

      Student(int i){
         System.out.println("Student "+(i+1)+" enter your marks in ");
         System.out.print("physics : ");
phy=sc.nextInt();
         System.out.print("Chemistry : ");
chem=sc.nextInt();
         System.out.print("Maths : ");
math=sc.nextInt();
         total= phy+chem+math;
      }
   }
```

```
   public class AnnualExamination {
public static void main(String[] args) {
int n=5,max=0;
        Student[] s = new Student[n];

        for(int i=0;i<n;i++) s[i] =new Student(i);

        System.out.println("\nStudent\tPhy\tChem\tMath\tTotal\n");
for(int i=0;i<n;i++){
           System.out.println((i+1)+"\t"+s[i].phy+"\t"+s[i].chem+"\t"+s[i].
math+"\t"+s[i].total);
           max = (s[i].total>s[max].total) ? i : max;
        }
        System.out.println("\nHighest marks("+s[max].total+") are scored
by student "+(max+1)+".");
      }
   }
```

Output :

```
C:\Users\Puru\Desktop\PRIYANSH\College\JAVA LAB WORK>javac AnnualExamination.java

C:\Users\Puru\Desktop\PRIYANSH\College\JAVA LAB WORK>java AnnualExamination
Student 1 enter your marks in
physics : 56
Chemistry : 76
Maths : 36
Student 2 enter your marks in
physics : 34
Chemistry : 67
Maths : 70
Student 3 enter your marks in
physics : 67
Chemistry : 90
Maths : 43
Student 4 enter your marks in
physics : 46
Chemistry : 76
Maths : 52
Student 5 enter your marks in
physics : 45
Chemistry : 67
Maths : 76

Student Phy     Chem    Math    Total

1       56      76      36      168
2       34      67      70      171
3       67      90      43      200
4       46      76      52      174
5       45      67      76      188

Highest marks(200) are scored by student 3.

C:\Users\Puru\Desktop\PRIYANSH\College\JAVA LAB WORK>
```

THANK YOU