School of Information Technology & Engineering

Winter Semester 2021-2022

ITA5004 – Object Oriented Programming using JAVA

DIGITAL ASSIGNMENT THEORY -01

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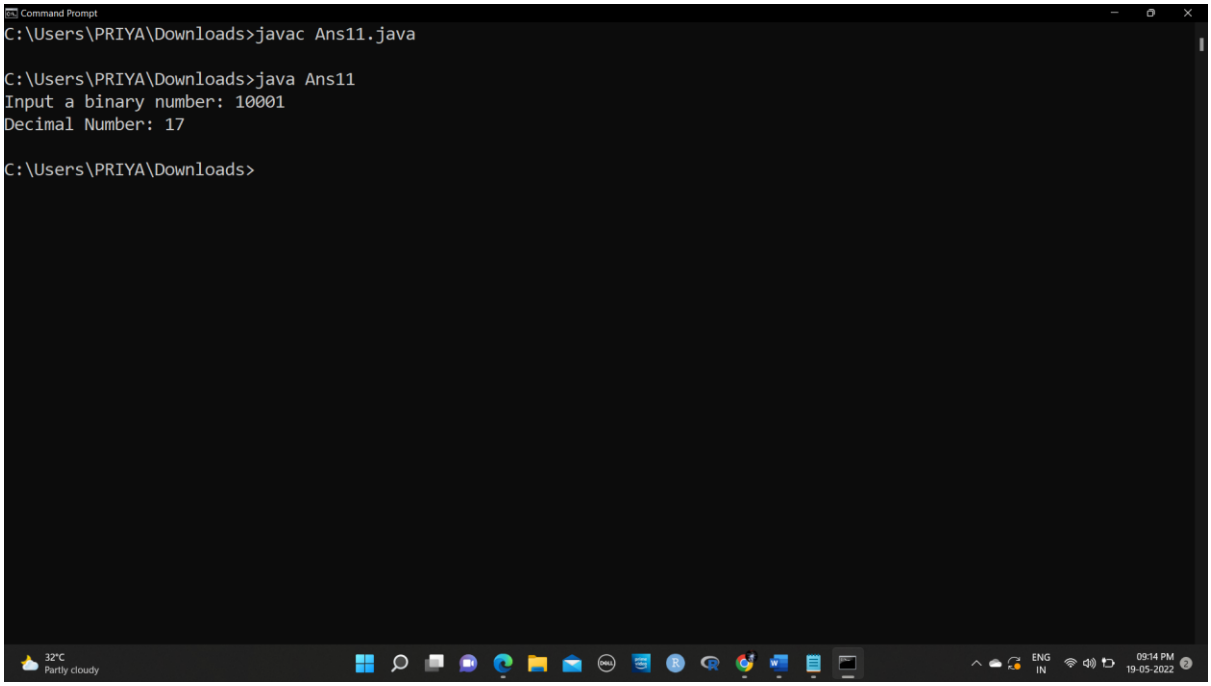
SLOT:A2

1. Write a static method that converts binary number into decimal number. Invoke this in the main() function. For example, for the binary number 10001, the method should return 17.

CODE:

```
import java.util.Scanner;
public class Ans11 {
 public static void main(String[] args)
 {
  Scanner sc = new Scanner(System.in);
  long binaryNumber, decimalNumber = 0, j = 1, remainder;
  System.out.print("Input a binary number: ");
  binaryNumber = sc.nextLong();

  while (binaryNumber != 0)
  {
   remainder = binaryNumber % 10;
   decimalNumber = decimalNumber + remainder * j;
   j = j * 2;
   binaryNumber = binaryNumber / 10;
  }
  System.out.println("Decimal Number: " + decimalNumber);
 }
}
```

OUTPUT:



2. Develop a class TelephoneIndex with two String objects as members. One should hold people's name and the other should hold their phone number. The class should have appropriate constructor, input and display methods. Create array of objects for TelephoneIndex and do the following: a. Your program should ask the user to enter a name or the first few characters of a name to search for it in the array. b. The program should display all of the names that match the user's input and their corresponding phone numbers.

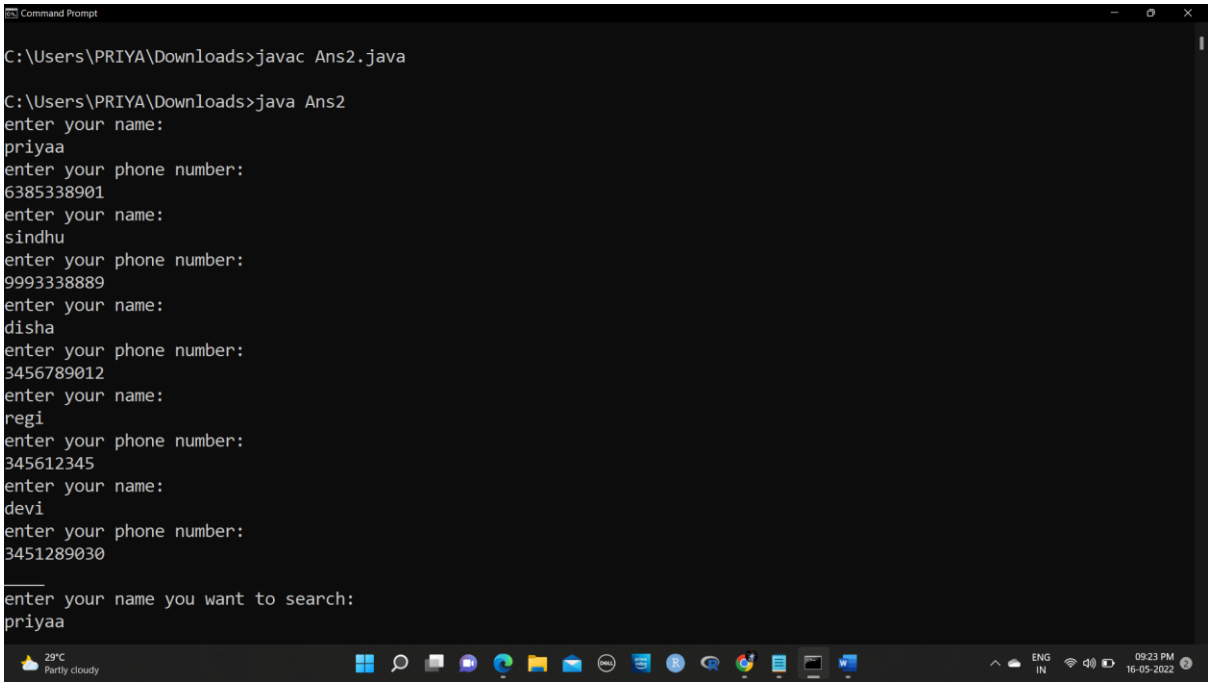
CODE:

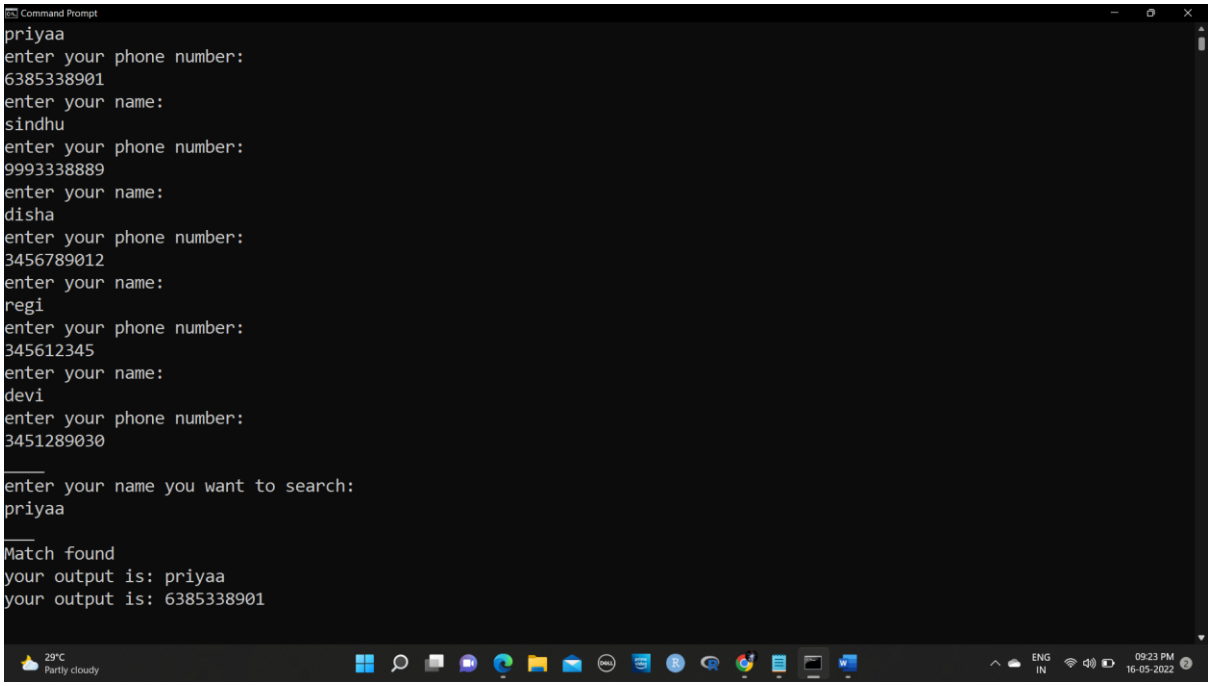
```
import java.util.*;

class Ans2

{

String name;

String phno;

Ans2(String x1, String x2)

{

name = x1;

phno = x2;

}

void input()

{
```

```
Scanner sa = new Scanner(System.in);
System.out.println("enter your name: ");
String s1 = sa.next();
System.out.println("enter your phone number: ");
String s2 = sa.next();
}
void display()
{
System.out.println("your output is: "+this.name);
System.out.println("your output is: "+this.phno);
}
public static void main(String ards[])
{
Scanner sa = new Scanner(System.in);
Ans2 obj[] = new Ans2[5];
for(int i = 0 ; i < 5 ; i++)
{
System.out.println("enter your name: ");
String s1 = sa.next();
System.out.println("enter your phone number: ");
String s2 = sa.next();
obj[i] = new Ans2(s1,s2);
}
System.out.println("____");
System.out.println("enter your name you want to search: ");
String ser = sa.next();
System.out.println("___");
for(int i = 0 ; i < 5 ; i++)
{
if( obj[i].name.equals(ser))
{
```

```
System.out.println("Match found");
obj[i].display();
}
}
}
}
```

OUTPUT:





3. The process of finding the largest value is used frequently in computer applications. For example, a program that determines the winner of a sales contest would input the number of units sold by each salesperson. The salesperson who sells the most units wins the contest. Write a Java application that inputs a series of 10 integers and determines and prints the largest integer. Your program should use at least the following three variables:

a) counter: A counter to count to 10 (i.e., to keep track of how many numbers have been input and to determine when all 10 numbers have been processed).

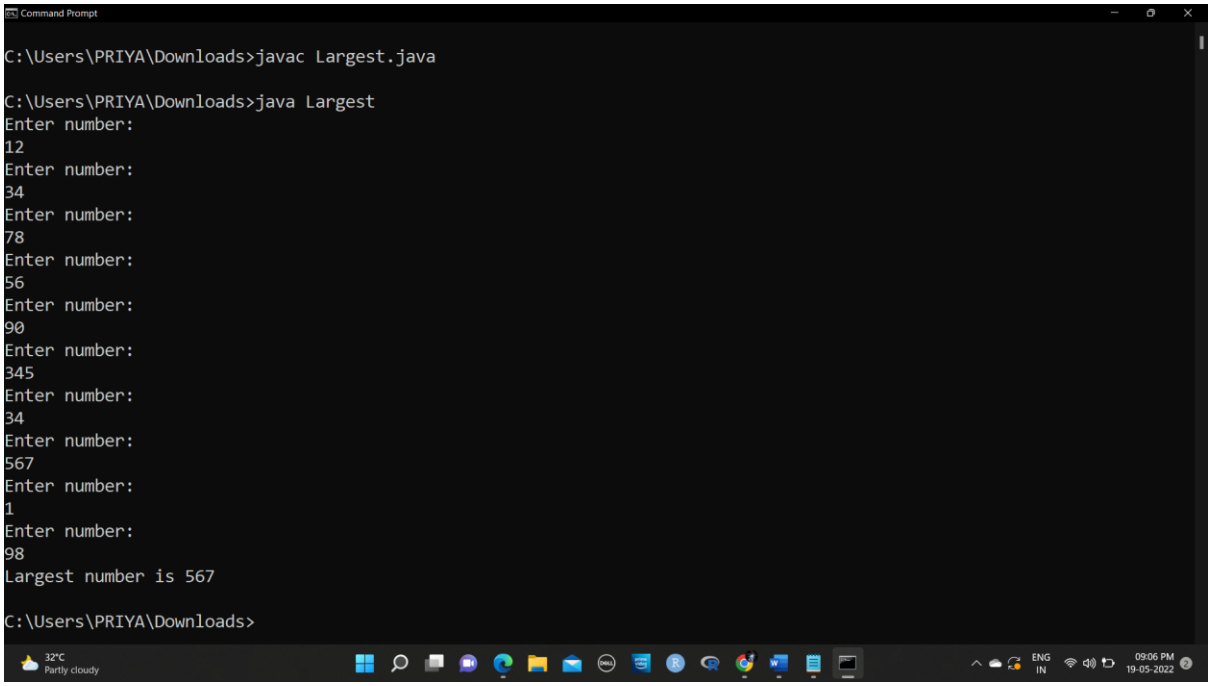
b) number: The integer most recently input by the user.

c) largest: The largest number found so far.

CODE:

```
import java.util.Scanner;

public class Largest

{

public static void main(String[] args)

{

Scanner input = new Scanner(System.in);

int number, count = 0;

int largest = -100000000;

do

{

System.out.println("Enter number: ");

number = input.nextInt();

if (number > largest)

{

largest = number;

}

count++;

}

while (count<10);

System.out.println("Largest number is " + largest);

}

}
```

OUTPUT:



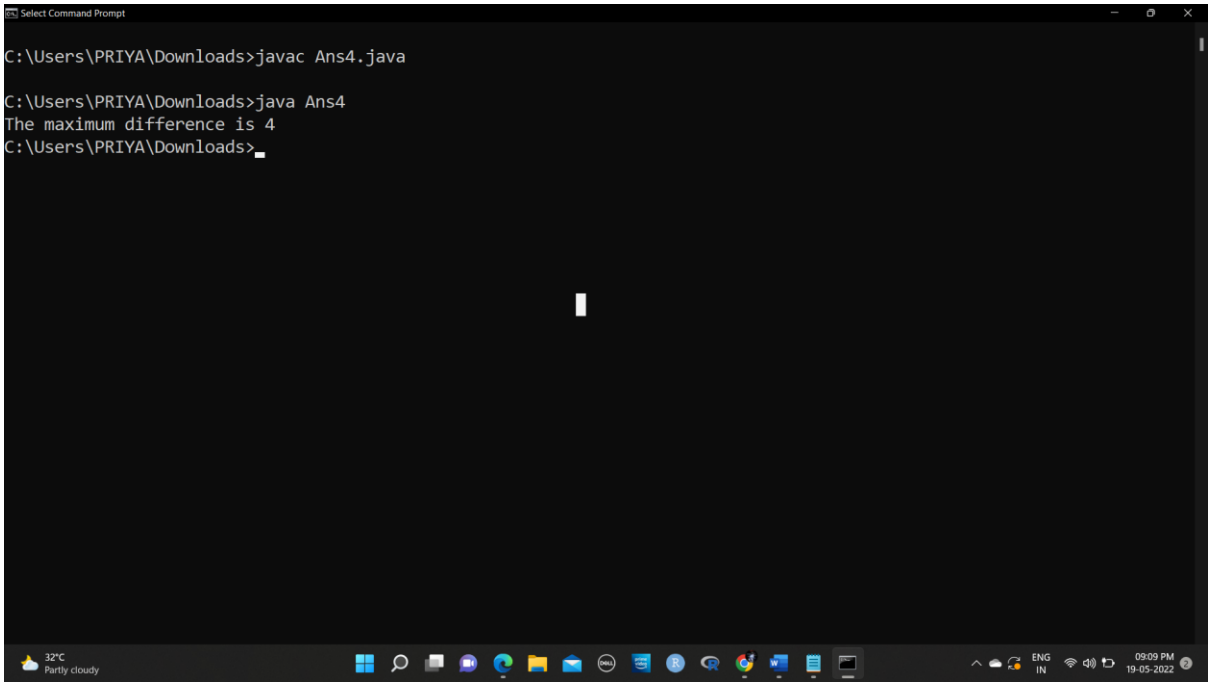
4. Given an array of N integers. Write a Java program to find the maximum absolute difference between any two elements of the array. Example if array[]={2,1,5,3} output should be 4

CODE:

```
public class Ans4
{
   public static int getMaxDiff(int[] A)
   {
      int diff = Integer.MIN_VALUE;

      int n = A.length;
      if (n == 0)
                     {
         return diff;
      }

      for (int i = 0; i < n - 1; i++)
      {
         for (int j = i + 1; j < n; j++)
                              {
```

```
            if (A[j] > A[i])
                                        {
                diff = Integer.max(diff, A[j] - A[i]);
            }
          }
        }

        return diff;
    }

    public static void main(String[] args)
    {
        int[] A = { 2, 1, 3, 5 };

        int diff = getMaxDiff(A);
        if (diff != Integer.MIN_VALUE)
                    {
            System.out.print("The maximum difference is " + diff);
        }
    }
}
```

OUTPUT:


Select Command Prompt
C:\Users\PRIYA\Downloads>javac Ans4.java
C:\Users\PRIYA\Downloads>java Ans4
The maximum difference is 4
C:\Users\PRIYA\Downloads>
32°C
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ENG
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19-05-2022