12-12-23

WRA 12-12-23

1) Write a program to print "Hello World"

```
import java.util.*;
class demo
{
    public static void main (String args[])
    {
        System.out.println ("hello world");
    }
}
```

output: hello world

2) Write a program to find the area of a rectangle using parseInt()

```
class area {
public static void main (String args [])·{
int length, breadth;
length = Integer.parseInt(args[0]);
breadth = Integer.parseInt(args[1]);
int area = length * breadth;
System.out.println ("length of rectangle = " + length);
System.out.println ("breadth of rectangle = " + breadth);
System.out.println ("area of rectangle = " + area);
}}
```

Output: length of rectangle = 10
breadth of rectangle = 8
area of rectangle = 80

3) Write a program to show example of scanner

```
import java.util.Scanner;
class scanner {
public static void main (String args [])
{
int a; float b; String s;
Scanner in = new Scanner (System.in);
System.out.println ("enter a string: ");
s = in.nextLine ();
System.out.println ("you entered string "+s);
System.out.println ("enter an integer");
a = in.nextInt ();
System.out.println ("you entered integer "+a);
System.out.println ("enter a float ");
b = in.nextFloat ();
System.out.println ("you entered float "+b);
}
}
```

Output: enter a string: java
you entered string java
enter an integer 100
you entered integer 100
enter a float 78.6
you entered float 78.6

4) Write a program to know the usage of array

```
class AutoArray {
public static void main (String args[]) {
int month_days[] = {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31};
System.out.println ("April has " + month_days[3] + "days");
}
```

Output: April has 31 days

5) Write a program to find the factorial of a given number

```
class factorial {
public static void main (String args[])
{
    int fac = 1;
    System.out.println("Enter a number: ");
    Scanner sc = new Scanner (System.in);
    int n = sc.nextInt();
    for(int i=1; i<=n; i++) {
        fac = fac * i;
    }
    System.out.println("The factorial: "+fac);
}
}
```

Output: enter a number: 5
the factorial: 120

6) Write a program to check if it is a palindrome

```
import java.util.Scanner;
class palindrome
{
    public static void main (String args[])
    {
        int n, t, rem, rev = 0;
        Scanner sc = new Scanner (System.in);
        System.out.println("enter a 5 digit number: ");
        n = sc.nextInt();
        t = n;
        while (t>0)
        {
            rem = t%10;
            rev = rev * 10 + rem;
            t = t/10;
```

```
        if (rev == n)
        {
            System.out.println("palindrome");
        }
        else
        {
            System.out.println("not palindrome");
        }
    }
}
```

Output: enter a 5 digit number: 12321
palindrome

7) Write a program to find the sum of 5 digits

```
import java.util.*;
class digits {
    public static void main(String args[]) {
        long number, sum;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a 5-digit number:");
        number = sc.nextLong();
        for(sum = 0; number != 0; number = number/10)
            sum = sum + number %10;
        }
        System.out.println("sum of digits: "+sum);
    }
}
```

Output: Enter a 5-digit number: 12345
Sum of digits: 15

12-12-23

LAB-1 Program

1) Quadratic equation

Develop a Java program that prints all real solutions of equation $ax^2+bx+c=0$.

```
import java.util.Scanner;
class Quadratic
{
    int a, b, c;
    double r1, r2, d;
    void getd()
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the coefficients of a, b, c");
        a = s.nextInt();
        b = s.nextInt();
        c = s.nextInt();
    }
    void compute()
    {
        while (a==0)
        {
            System.out.println("Not a quadratic equation");
            System.out.println("Enter a non zero value for a: ");
            Scanner s = new Scanner(System.in);
            a = s.nextInt();
        }
        d = b*b - 4*a*c;
        if(d==0)
        {
            r1 = (-b)/(2*a);
            System.out.println("Roots are real and equal");
            System.out.println("Root1 = Root2 = " + r1);
        }
```

```
        else if (d>0)
        {
            r1=((-b)+(Math.sqrt(d)))/(double)(2*a);
            r2=((-b)-(Math.sqrt(d)))/(double)(2*a);
            System.out.println("Roots are real and distinct");
            System.out.println("Root1 = "+r1+"Root 2 = "+r2);
        }
        else if(d<0)
        {   System.out.println("Roots are imaginary");
            r1 = (-b)/(2*a);
            r2 = Math.sqrt(-d)/(2*a);
            System.out.println("Root 1 = "+r1+"+i"+r2);
            System.out.println("Root2 = "+r1+"-i"+r2);
        }
    }
}
class QuadraticMain
{
    public static void main(String args[])
    {
        Quadratic q = new Quadratic();
        q.getd();
        q.compute();
        System.out.println("1BM22CS215 Rahul N Raju");
    }
}
```

Output:

i) enter the coefficients of a, b, c
1 2 1
roots are real and equal
root 1 = root 2 = -1.0

ii) enter the coefficients of a, b, c
2 4 5
roots are imaginary
root 1 = -1.0 + i 1.2247448 7139 1589
root 2 = -1.0 - i 1.2247448 7139 1589

iii) enter the coefficients of a, b, c
1 4 1
roots are real and distinct
root 1 = -0.2679491 9243 1122 8
root 2 = -3.7320 5080 75 6887 7

IBM22CS215 Rahul N Raju