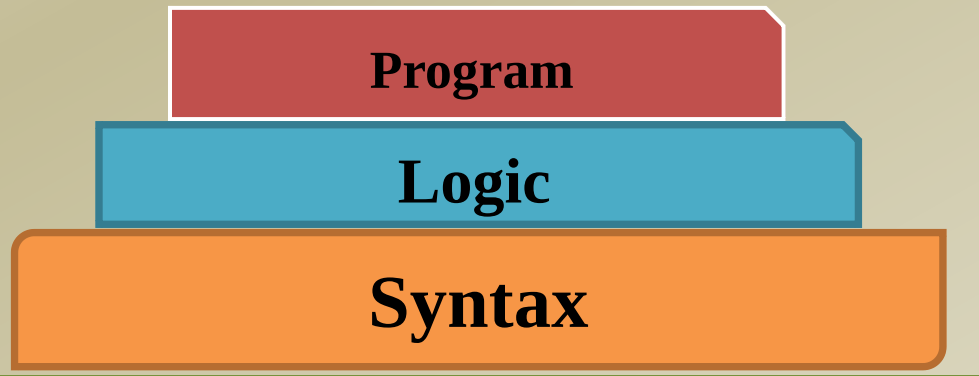
Code at Random (OPC) PVT. LTD.

Programming with Functions



Pre- Defined Functions

- These function are the **built-in functions** i.e., they are **predefined** in the library of the Java.
- These are used to perform the most common operations like calculations, updation, etc.
- Some of the library functions are **SOPln(), pow(), sqrt(),nextInt() etc.**
- To use this function we have to import them from the library of Java.
- For example, we have to import util package to use Scanner class and it's functions.
- They are also known as **Library Functions.**

User Defined Functions

- These functions are designed by the user when they are writing any program because for every task we do not have a library of functions where their definitions are predefined.
- To perform the according to the **requirement of user** the user have to develop some functions by itself, these functions are called **user-defined functions**.
- For such functions the user have to define the **proper definition of the function**.
- For Example:- If we have to add two numbers , to print the Fibonacci series or print a certain pattern then these type of function is known as user-defined function.

Some Programs Of User- Defined Functions

- Write a function **void swap(int a, int b)** to print the swapped values of a and b (by using third variable), and then call it from the main() function by taking the values of a and b from the user.
- Write a function **void largest(int a, int b, int c)** to print the largest number among a, b and c, and then call it from the main() function by taking the values of a, b and c from the user.
- Write a function **void position(char ch)** to print the respective position of ch as in English vocabulary, and then call it from the main() function by taking the value of ch from the user.
- Write a function **void isAuto(int n)** to check whether the number n is Automorphic or not, and then call it from the main() function by taking the value of n from the user.
- Write a function **void factorial (int n)** to print the odd factors of n, and then call it from the main() function by taking the value of n from the user.
- Write a function **void isprime(int n)** to print the factorial of n, and then call it from the main() function by taking the value of n from the user.

Program for void swap( )

```
import java.util.*;
class program1 {
    void swap(int a, int b) {
        int t;
        t=a;
        a=b;
        b=t;
        System.out.println("a= "+a+" b= "+b);
    }
    public static void main(String Args[])  {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter two numbers");
        int x,y;
        x= sc.nextInt();
        y= sc.nextInt();
        program1 ob= new program1();
        ob.swap(x,y);
       sc.close( );
    }
}
```

Program for void largest( )

```
import java.util.*;
class program2 {
    void largest(int a, int b, int c)  {
        if(a>b&&a>c)
            System.out.println(a);
        else if(b>a&&b>c)
            System.out.println(b);
        else
            System.out.println(c);
      }
     public static void main(String Args[])  {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter three numbers");
        int x,y,z;
        x= sc.nextInt();
        y= sc.nextInt();
        z= sc.nextInt();
        program2 ob= new program2();
        ob.largest(x,y,z);
    }
}
```

Program for void position( )

```
import java.util.*;
class program3 {
    void position(char ch) {
        int pos=0;
        if(ch>=65 && ch<=90)
            pos= (int)ch-64;
        else if(ch>=97 && ch<=122)
            pos= (int)ch-96;
        else
          System.out.println("Invalid Choice");
     System.out.println(pos);
    }
    public static void main(String Args[])  {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter a letter");
        char x;
        x= sc.next().charAt(0);
        program3 ob= new program3();
        ob.position(x);
    }
}
```

Program for void factorial( )

```
import java.util.*;
class program5 {
    void factorial(int n)  {
         int f=1;
         for(int i=1; i<=n; i++) {
            f = f*i;
          }
     System.out.println(f);
    }
    public static void main(String Args[])  {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter the  number");
        int n;
        n= sc.nextInt();
        program5 ob= new program5();
        ob.factorial(n);
    }
}
```

Program for void isAuto( )

```
import java.util.*;
class program4 {
    void isAuto(int n)  {
        int c=0, sqr = n*n;
        int temp=n;
        while(temp>0) {
            c++;
            temp/=10;
        }
     double lastSquareDigits = sqr%(Math.pow(10,c));
    if(num==lastSquareDigits)
        System.out.println(“Automorphic Number");
     else
        System.out.println(“Not a Automorphic Number");
    }
```

```
public static void main(String Args[])  {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter the  number");
        int n;
        n= sc.nextInt();
        program4 ob= new program4();
        ob.isAuto(n);
    }
}
```

Program for void isPrime( )

```
import java.util.*;
class program6 {
    void isPrime(int n)  {
        int c=0;
        for(int i=2 ; i<n ; i++) {
            if(n%i==0) {
              c++;
              break;
            }
        }
     if(c==0)
    {
       System.out.println(“Prime”);
    }
    else
    {
        System.out.println(“Not Prime”);
     }
```

```
public static void main(String Args[])  {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter the  number");
        int n;
        n= sc.nextInt();
        program6 ob= new program6();
        ob.isPrime(n);
    }
}
```

Happy Learning!!

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