

Today's Topic

- Functions Returning Value

functions

```
returntype function_name (datatype argsl ,....)
{
    Statements
    -----
    -----
    -----

    return value ;
}
```

Functions returning value

- ex: $Z = 100 + \text{fact}(5)$;
- If function is returning a value then it can be any datatype indicating the type of value the function is going to return such as **int, long, float, double, char, boolean** etc.
- Such functions are used in expression.

Functions not returning value

- ex: `graphics.drawLine (10 , 20 , 50 , 80) ;`
- If function is not returning any value then return type must be **void**.
- Such functions cannot be used in expression.

Functions returning value

- ex: **Z = 100 + fact (5) ;**
- If we want to use our function in an expression then such function must return a value by using return statement.
Syntax: return value ;
- The return statement returns value at the point from where function is called.

```
returntype function_name (datatype argsl , ... )  
{  
    Statements  
    -----  
    -----  
    -----  
    return value ;  
}
```

```
class demo
{
    public static void main(String args[])
    {
        int z = area(5,7) + area(3,4) + area(6,8) ;
        System.out.println( "Total area is " + z );
    }

    static int area ( int L, int B )
    {
        int a = L * B ;
        return a ;
    }
}
```

Design a function area which will return area of rectangle when L and B is passed as argument.

5 x 7

3 x 4

6 x 8

Output :

Total area is 95

```
returntype function_name (datatype args1 , ... )
{
    Statements
    -----
    return value ;
}
```

```
class demo
{
    public static void main(String args[])
    {
        int z = volume(5,4,7) + volume(8,7,3);
        System.out.println( "Total volume is " + z );
    }

    static int volume ( int L, int B,int H )
    {
        int v = L * B * H ;
        return v ;
    }
}
```

Design a function volume which will return volume of box when L B and H is passed as argument.



L=5 B=4 H=7



L=8 B=7 H=3

Output :

Total volume is 308

```
returntype function_name (datatype args1 , ... )
{
    Statements
    -----
    return value ;
}
```

```
class demo
{
    public static void main(String args[])
    {
        double z = interest( 5000, 10.25, 3 );
        System.out.println( "Simple interest is " + z);
    }

    static double interest (int P, double R, int N )
    {
        double si = P * R * N / 100.0;
        return si ;
    }
}
```

Design a function interest which will calculate and return simple interest from 3 arguments P R and N.

Output :
Simple Interest is 1537.50

```
returntype function_name (datatype args1 , ... )
{
    Statements
    -----
    return value ;
}
```

```
class demo
{
    public static void main(String args[])
    {
        double z = volume( 5.6 );
        System.out.println( "Volume of sphere is " + z );
    }

    static double volume (double R )
    {
        double v = 4/3.0 * 3.14 * R * R *R ;
        return v ;
    }
}
```

Design a function volume which will calculate and return volume of sphere from specified radius which is passed as argument.

Output :
volume of sphere is 733.40

```
returntype function_name (datatype args1 , ... )
{
    Statements
    -----
    return value ;
}
```

```

import java.util.Scanner;
class demo
{
    public static void main(String args[])
    {
        Scanner stdin=new Scanner(System.in);
        System.out.println( "Enter Radius : " );
        double n = stdin.nextDouble( );
        double z = volume( n );
        System.out.println("volume of sphere is " + z );
    }
    static double volume( double R )
    {
        double v = 4/3.0 * 3.14 * R * R * R ;
        return v ;
    }
}

```

Note: whenever a primitive type of variable is passed as argument , then actually the value of variable is passed to function.

Design a function volume which will calculate and return volume of sphere from specified radius which is passed as argument.

Output :

Enter Radius : 4
volume of sphere is 267.87

```

returntype function_name (datatype args1 , ... )
{
    Statements
    -----
    return value ;
}

```



```

import java.util.Scanner;
class demo
{
public static void main(String args[])
{
Scanner stdin=new Scanner(System.in);
System.out.println( "Enter Radius : " );
double n = stdin.nextDouble( );
double p= area( n );
double q = circumference( n );
System.out.println("Area is " + p + "\nCircumference is " + q );
}
static double area (double R )
{
double a = 3.14 * R * R ;
return a ;
}
static double circumference (double R )
{
double c = 2 * 3.14 * R ;
return c ;
}
}

```

Design 2 functions area and circumference which will calculate and return area and circumference of circle from specified radius which is passed as argument.

Output :

Enter Radius : 5

Area is 78.5

Circumference is 31.4

```

returntype function_name (datatype args1 , ... )
{
    Statements
    -----
    return value ;
}

```

```
class demo
{
    public static void main(String args[])
    {
        int z = sum( 10 );
        System.out.println( " sum is " + z );
    }

    static int sum ( int n )
    {
        int s = 0 ;
        for( int i=1 ; i<=n ; i++ )
            s = s + i ;
        return s ;
    }
}
```

Design a function sum which will return sum of all numbers from 1 to specified number.

Output :

Sum is 55

```
returntype function_name (datatype args1 , ... )
{
    Statements
    -----
    return value ;
}
```

```
class demo
{
    public static void main(String args[])
    {
        int z = fact( 5 );
        System.out.println( " result is "+ z );
    }

    static int fact ( int n )
    {
        int s = 1 ;
        for( int i=1 ; i<=n ; i++ )
            s = s * i ;
        return s ;
    }
}
```

Design a function fact which will return factorial of specified number which is passed as argument.

Output :
result is 120

```
returntype function_name (datatype args1 , ... )
{
    Statements
    -----
    return value ;
}
```

Today's Topic End