## ACCEPTING INPUT FROM USER

- Using Command Line //before java 1.5
- Using Scanner Class// popular but not very efficient
- Using GUI (Applets.servlets,jsp…):

### Using Command line arguments:

The Java command-line argument is an argument i.e. passed at the time of running the Java program.

The arguments passed from the console can be received in the Java program and it can be used as an input.

So, it provides a convenient way to check the behavior of the program for the different values. You can pass **N** (1,2,3 and so on) numbers of arguments from the command prompt.

```
class CommandLine1{
public static void main(String args[]){
System.out.println("Your first argument is: "+args[0]);
}
}
```

args[]

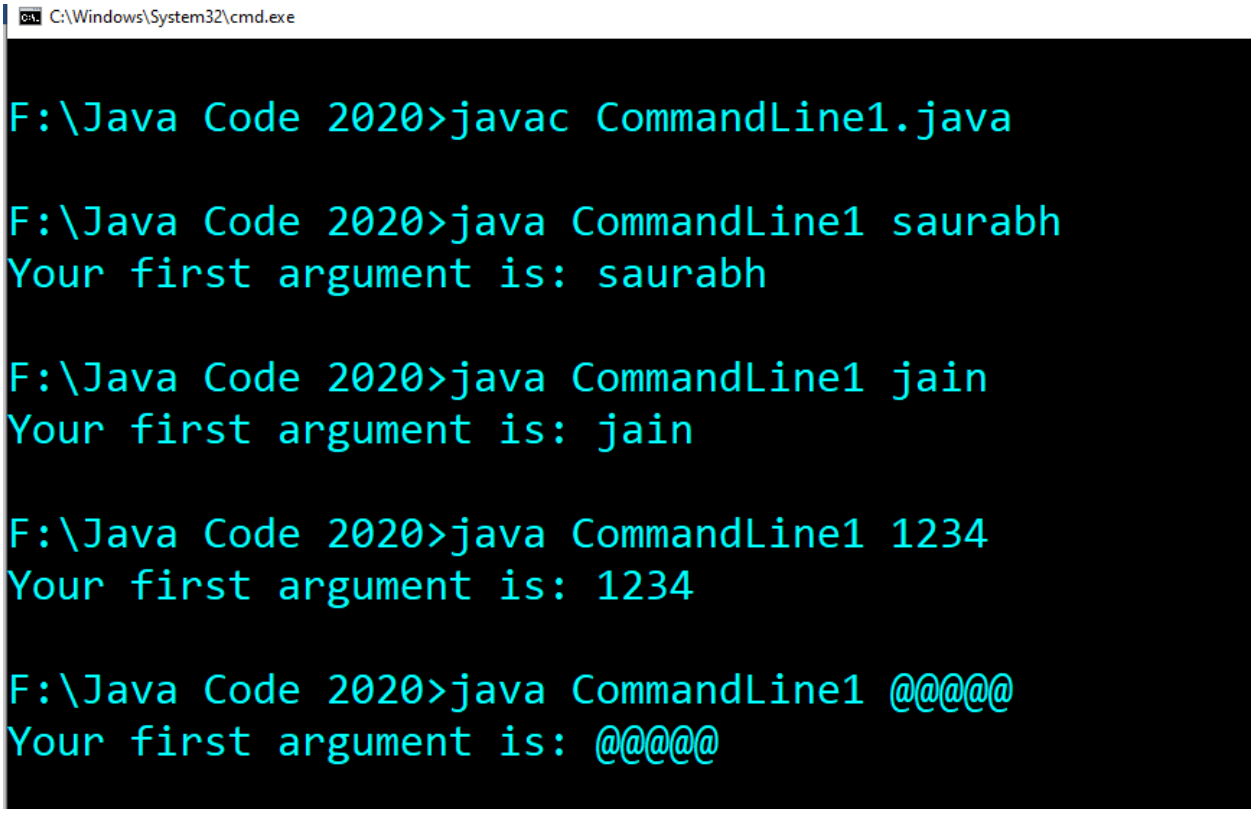
| saurabh | jain | 1234 | @@@@ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | | | | | n-1 |

Save it: CommandLine1.java

Compile it: javac CommandLine1.java

**Execute it: java CommandLine1**

```
F:\Java Code 2020>java CommandLine1
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: 0
        at CommandLine1.main(CommandLine1.java:3)
```




```
class CommandLine2{
public static void main(String args[]){

for(int i=0;i<args.length;i++) //you can pass any number of values
System.out.println(args[i]);

}
}
```

```
F:\Java Code 2020>javac CommandLine2.java

F:\Java Code 2020>java CommandLine2

F:\Java Code 2020>java CommandLine2 saurabh
saurabh

F:\Java Code 2020>java CommandLine2 saurabh jain
saurabh
jain

F:\Java Code 2020>java CommandLine2 saurabh jain 123
saurabh
jain
123
```

```
class AddCline
 {
public static void main(String args[])
  {
 double a =Double.parseDouble(args[0]);//convert the String Value in double
 double b =Double.parseDouble(args[1]);
 double c = a + b;
 System.out.println("Sum of a and b is :"+ c);
  }
 }
```

args

| 23.5 | 44.6 |
|---|---|
| 0 | 1 |

```
F:\Java Code 2020>java AddCline
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: 0
        at AddCline.main(AddCline.java:5)

F:\Java Code 2020>java AddCline 23.5  44.6
Sum of a and b is :68.1

F:\Java Code 2020>java AddCline 23.5
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: 1
        at AddCline.main(AddCline.java:6)

F:\Java Code 2020>java AddCline 23.5  23.5 45.7
Sum of a and b is :47.0
```

## Using Scanner class:

Using the Scanner class, we Accept input from the user in an interactive manner. A separate Scanner class is defined in the 'java.util.Scanner' package, which defines various methods for taking different data values from the user. Using the Scanner class in Java is the easiest way to read input in a Java program.

**Java Scanner Input Types**

The Scanner class helps take the standard input stream in Java. So, we need some methods to extract data from the stream. Methods used for extracting data are mentioned below:

| Sr no | Method | Description |
|---|---|---|
| 1 | nextBoolean() | Used for reading Boolean value |
| 2 | nextByte() | Used for reading Byte value |
| 3 | nextDouble() | Used for reading Double value |
| 4 | nextFloat() | Used for reading Float value |
| 5 | nextInt() | Used for reading Int value |
| 6 | nextLine(), next() | Used for reading Line value |
| 7 | nextLong() | Used for reading Long value |
| 8 | nextShort() | Used for reading Short value |

**Note:**

In order to use the nextXYZ() method, we also need to create an instance of the Scanner class.

**WAP in JAVA that takes two integer values from the user using Scanner class and print their sum.**

```
import java.util.*;
class UsingScanner
{
public static void main(String args[])
{
Scanner s=new Scanner(System.in);
int a,b;
System.out.println("Enter first number");
a=s.nextInt();
System.out.println("Enter Second number");
b=s.nextInt();
int c=a+b;
System.out.println("Addition is:"+c);
}
}
```

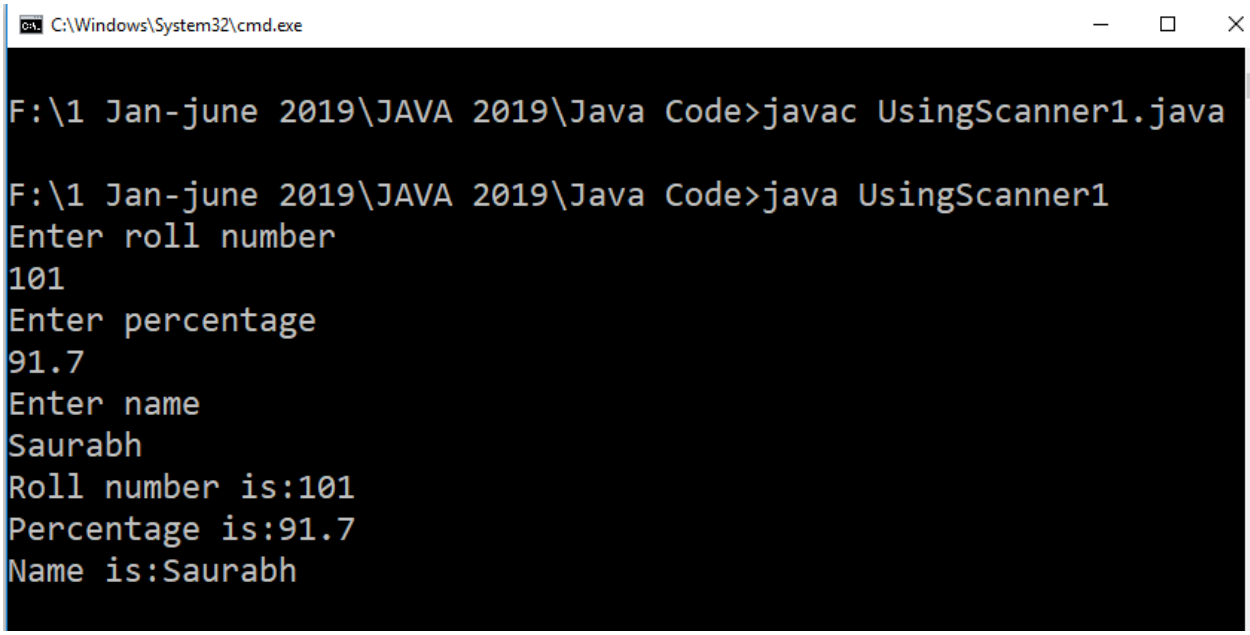
```
F:\Java Code 2020>java UsingScanner
Enter first number
23
Enter Second number
34
Addition is:57
```

```
F:\Java Code 2020>java UsingScanner
Enter first number
aaa
Exception in thread "main" java.util.InputMismatchException
```

```
F:\Java Code 2020>java UsingScanner
Enter first number
30.5
Exception in thread "main" java.util.InputMismatchException
```

**WAP in JAVA takes student information from the user and prints their record.**

```
1  import java.util.*;
2  import java.lang.*;//default package
3  class UsingScanner1
4  {
5  public static void main(String args[])
6  {
7  Scanner s=new Scanner(System.in);
8  int roll;
9  double per;
10 String name;
11 System.out.println("Enter roll number");
12 roll=s.nextInt();
13 System.out.println("Enter percentage");
14 per=s.nextDouble();
15 System.out.println("Enter name");
16 name=s.next();
17 System.out.println("Roll number is:"+roll);
18 System.out.println("Percentage is:"+per);
19 System.out.println("Name is:"+name);
20 }
21 }
```


C:\Windows\System32\cmd.exe
F:\1 Jan-june 2019\JAVA 2019\Java Code>javac UsingScanner1.java
F:\1 Jan-june 2019\JAVA 2019\Java Code>java UsingScanner1
Enter roll number
101
Enter percentage
91.7
Enter name
Saurabh
Roll number is:101
Percentage is:91.7
Name is:Saurabh

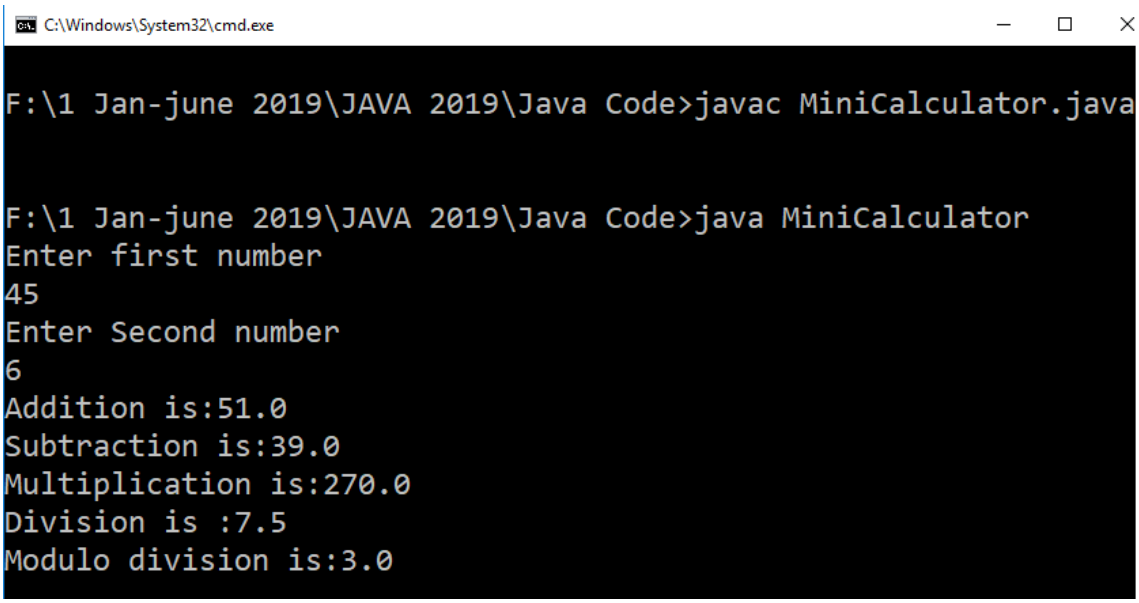
**Class Work:**

- WAP in JAVA shows arithmetic operations. (Take inputs from the user using the Scanner class).
- WAP in JAVA takes the radius as input from the user and prints the area and circumference.
- WAP to find the largest of three numbers.

**WAP in JAVA shows arithmetic operations. (Take inputs from the user using the Scanner class).**

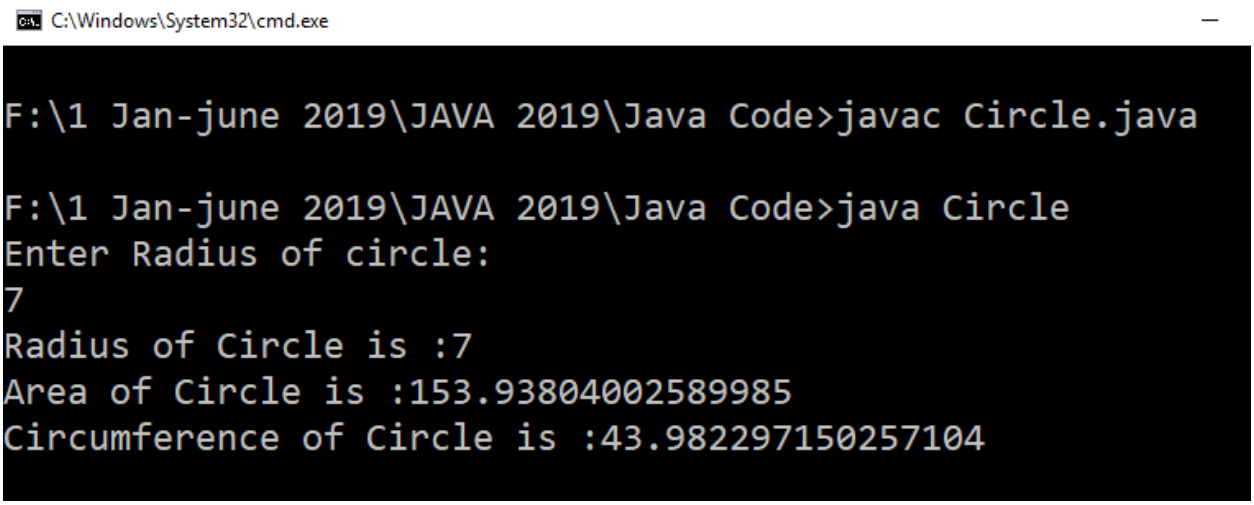
```
1  import java.util.Scanner;
2  class MiniCalculator
3   {
4    public static void main(String args[])
5     {
6      Scanner s=new Scanner(System.in);
7      double a,b;
8      System.out.println("Enter first number");
9      a=s.nextDouble();
10     System.out.println("Enter Second number");
11     b=s.nextDouble();
12     double c=a+b;
13     double d=a-b;
14     double e=a*b;
15     double f=a/b;
16     double g=a%b;
17     System.out.println("Addition is:"+c);
18     System.out.println("Subtraction is:"+d);
19     System.out.println("Multiplication is:"+e);
20     System.out.println("Division is :"+f);
21     System.out.println("Modulo division is:"+g);
22    }
23  }
```

**Output:**



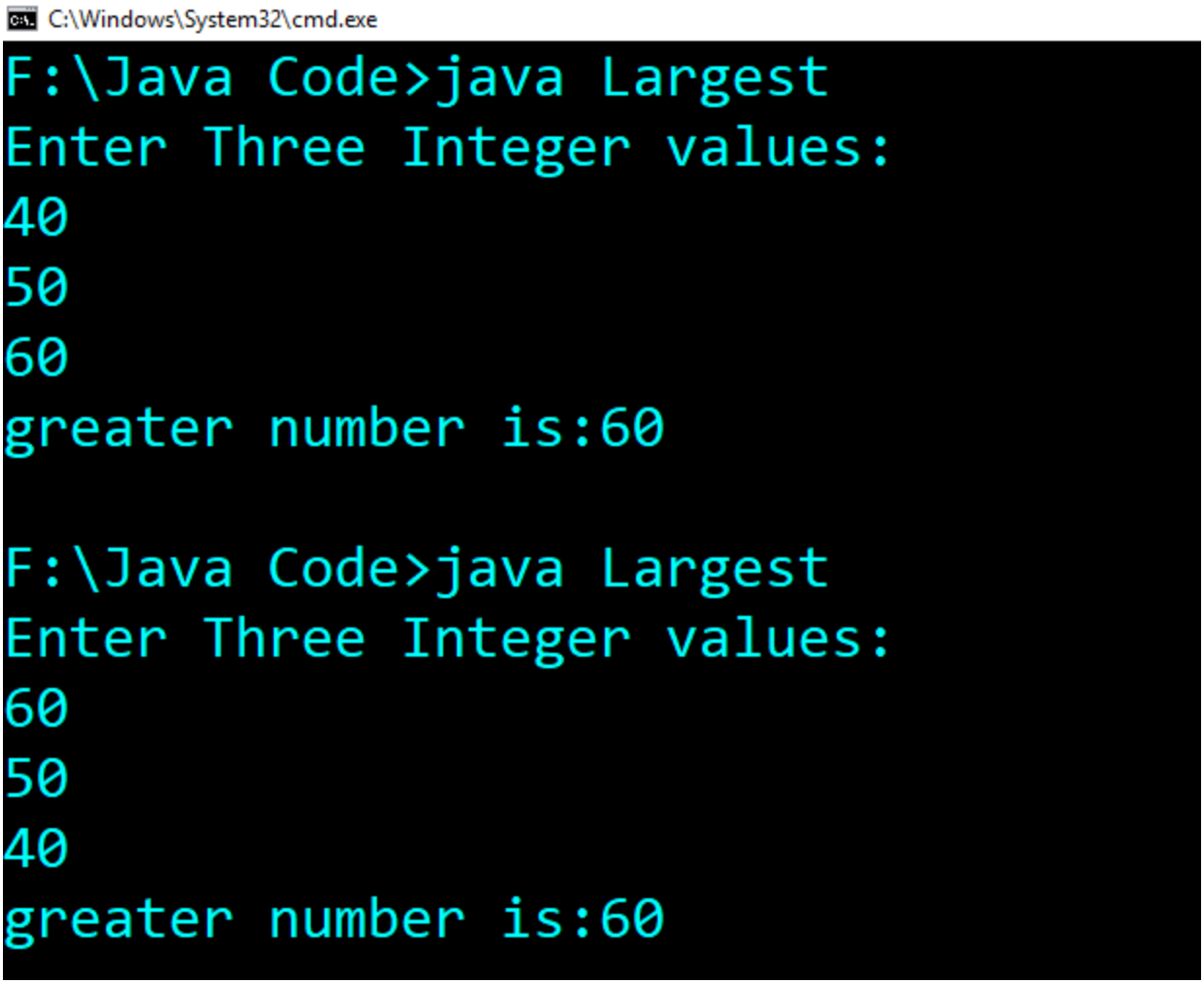

**WAP in JAVA takes the radius as input from the user and prints the area and circumference.**

```
1  import java.util.Scanner;
2  class Circle
3   {
4    public static void main(String args[])
5     {
6       int radius;
7       double area,circum;
8       Scanner s=new Scanner(System.in);
9       System.out.println("Enter Radius of circle:");
10      radius=s.nextInt();
11      area=Math.PI*Math.pow(radius,2);
12      circum=2*Math.PI*radius;
13      System.out.println("Radius of Circle is :"+radius);
14      System.out.println("Area of Circle is :"+area);
15      System.out.println("Circumference of Circle is :"+circum);
16    }
17  }
```


C:\Windows\System32\cmd.exe
F:\1 Jan-june 2019\JAVA 2019\Java Code>javac Circle.java
F:\1 Jan-june 2019\JAVA 2019\Java Code>java Circle
Enter Radius of circle:
7
Radius of Circle is :7
Area of Circle is :153.93804002589985
Circumference of Circle is :43.982297150257104

**WAP to find the largest of three numbers.**

```
import java.util.*;
class Largest
{
public static void main(String args[])
{
Scanner s=new Scanner(System.in);
System.out.println("Enter Three Integer values:");
int a=s.nextInt();
int b=s.nextInt();
int c=s.nextInt();
if(a>b && a>c)
{
System.out.println("greater number is:"+a);
}
else if (b>a && b>c)
{
System.out.println("greater number is:"+b);
}
else
{
System.out.println("greater number is:"+c);
}}}
```




**3. Using GUI: We will discuss this later. (Topics Included-Applets/Swing/ JSP/ Servlets)**