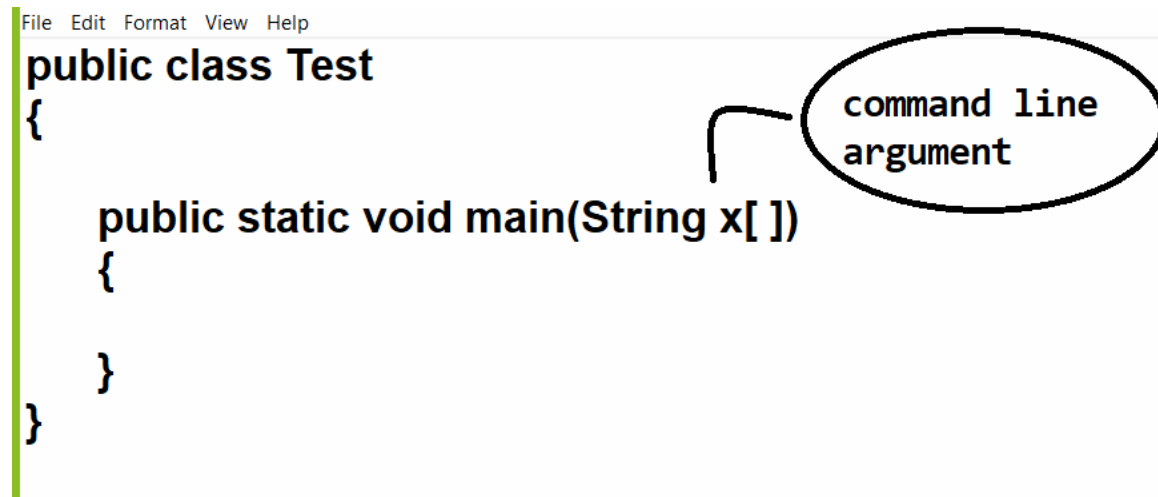## Command Line Arguments

Q. what is the command line arguments?

Command line argument is parameter passed

In main function of string array called as command line argument.

```
File  Edit  Format  View  Help
public class Test
{

    public static void main(String x[ ])
    {

    }
}
```

command line argument

Command line argument is infinite string array means we can accept the n number of input through the command line argument but the first input of command line argument is start from 0th location

Example:

We want to accept the two values from keyboard and calculate its addition.

If we use the command line argument then first input on 0th index ,second input on 1th index up to n-1 shown following example

```
public class Test
{
    public static void main(String x[ ])
    {
         int a,b,c;
        a=x[0]; //first input
        b=x[1];//second input
        c=a+b;
    System.out.printf("Addition is %d\n",c);
    }
}
```

```
Command Prompt

C:\Program Files\Java\jdk1.8.0_291\bin>javac Test.java
Test.java:6: error: incompatible types: String cannot be converted to int
              a=x[0]; //first input
                ^
Test.java:7: error: incompatible types: String cannot be converted to int
              b=x[1];//second input
                ^
2 errors
```

Above code generate the two error to us String cannot be converted to integer

Q.Why ?

Because we want to accept the input of type integer but we have the String for input and String cannot store in integer directly so compiler generate the incompatible type error to us

Q. How to Solve This Type Of Error in Java ?

If we want to solve this type of error in java we have the type casting technique.

Q. What Is The Type Casting?

Type Casting means convert the one type of data in to the another type for single line of code called as Type Casting.

Means As per our Example we required to convert the String to integer

Q. How To Convert String To Integer In Java?

If we want to convert the string to integer in java we have the Following Statement

Syntax: int variablename =Integer.parseInt(String);

Here Integer is classname and parseInt() is function which is used for convert the String to integer in java.

e.g   int a =Integer.parseInt(x[0]);

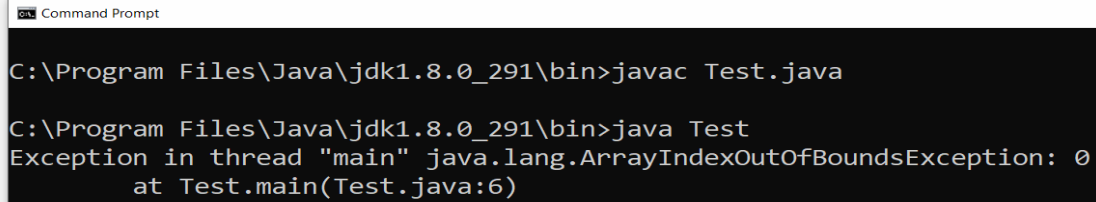if we want to convert the string to float we have the statement

syntax: float variable =Float.parseFloat(String);

if we want to convert the string to double we have the statement

Syntax: double variable=Double.parseDouble(String);

Following example demonstrate the conversion between string to integer for Addition Example

```
public class Test
{
    public static void main(String x[ ])
    {
         int a,b,c;
        a=Integer.parseInt(x[0]); //first input
        b=Integer.parseInt(x[1]);//second input
        c=a+b;
    System.out.printf("Addition is %d\n",c);
    }
}
```

```
Command Prompt

C:\Program Files\Java\jdk1.8.0_291\bin>javac Test.java

C:\Program Files\Java\jdk1.8.0_291\bin>java Test
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: 0
        at Test.main(Test.java:6)
```

If we think about above code then program get compile successfully
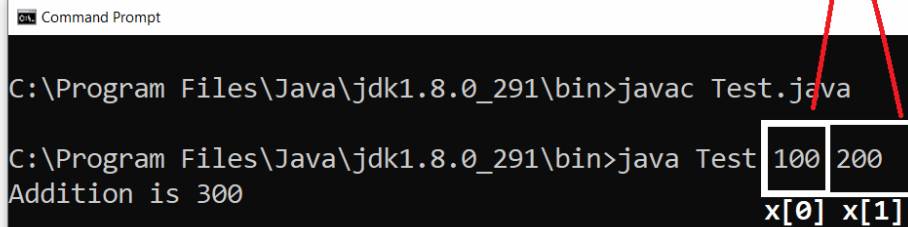
But program generate the error at runtime

Q. why ?

Because if we use the Command Line Argument then we need to accept the input on same line where we run the program

Shown below

```
public class Test
{
    public static void main(String x[ ])
    {
         int a,b,c;
        a=Integer.parseInt(x[0]); //first input
        b=Integer.parseInt(x[1]);//second input
        c=a+b;
      System.out.printf("Addition is %d\n",c);
    }
}
```

```
Command Prompt

C:\Program Files\Java\jdk1.8.0_291\bin>javac Test.java

C:\Program Files\Java\jdk1.8.0_291\bin>java Test 100 200
Addition is 300
                                           x[0] x[1]
```
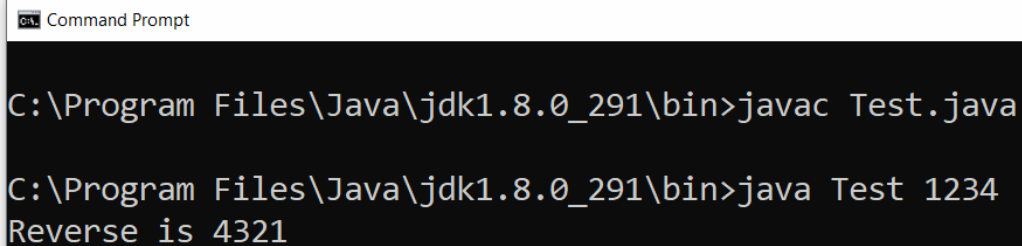
If we use the command then we must be give all input in single line where we execute the program

Now We Will See The Some Example Using Command Line Arguments

Example1

WAP to input the number and reverse it using command line argument?

```
public class Test
{
    public static void main(String x[ ])
    {
        int no = Integer.parseInt(x[0]);
        int r=0,rem;
        while(no!=0)
        {
            rem = no % 10;
            no  = no /10;
            r = r *10 + rem;
        }
    System.out.printf("Reverse is %d\n",r);

    }
}
```

```
Command Prompt

C:\Program Files\Java\jdk1.8.0_291\bin>javac Test.java

C:\Program Files\Java\jdk1.8.0_291\bin>java Test 1234
Reverse is 4321
```

_____

Example2

WAP Input The Two Values Consider First As Base And Second As Index And Calculate The Power of Number

e.g 5 4

$5^4 = 5 \times 5 \times 5 \times 5 = 625$

```
public class PowerApp
{
    public static void main(String x[])
    {
        int base,index,p=1;

        base =Integer.parseInt(x[0]);

        index=Integer.parseInt(x[1]);

        for(int i=1; i<=index; i++)
        {
            p = p * base;
        }
        System.out.printf("Power is %d\n",p);
    }
}
```

```
Command Prompt

C:\Program Files\Java\jdk1.8.0_291\bin>javac PowerApp.java

C:\Program Files\Java\jdk1.8.0_291\bin>java PowerApp 5 4
Power is 625
```

Example 3

WAP to input the number and calculate its Factorial using Command Line Argument?

```
public class FactorialApp
{
    public static void main(String x[])
    {
        int no=Integer.parseInt(x[0]);

        int f=1,i;

        for(i=1;i<=no;i++)
        {
          f = f * i;
        }
    System.out.printf("Factorial of number is %d\n",f);
    }
}
```
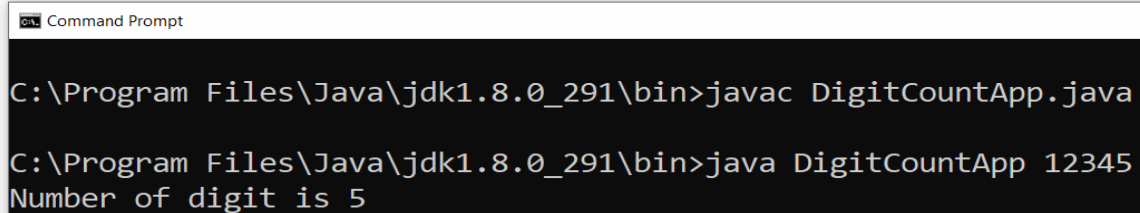
Command Prompt

```
C:\Program Files\Java\jdk1.8.0_291\bin>javac FactorialApp.java

C:\Program Files\Java\jdk1.8.0_291\bin>java FactorialApp 5
Factorial of number is 120
```

Example 4

WAP to input the number and count its digit using command line argument ?

```
public class DigitCountApp
{
    public static void main(String x[])
    {
        int no =Integer.parseInt(x[0]);
        int count=0;
        while(no!=0)
        {
            no  = no /10;
            ++count;
        }
    System.out.printf("Number of digit is %d\n",count);
    }
}
```

```
Command Prompt

C:\Program Files\Java\jdk1.8.0_291\bin>javac DigitCountApp.java

C:\Program Files\Java\jdk1.8.0_291\bin>java DigitCountApp 12345
Number of digit is 5
```

Example 5

WAP to input the number using command line argument and check number is perfect or not?

Description: Perfect number means number is equal with sum of all divisor

e.g 6 is perfect number because the divisor 6 1 2 and 3 and if we calculate the addition of these divisor 1+2+3 = 6

Means 6 is equal with its divisor addition called so 6 is perfect number.

```java
public class PerfectApp
{  public static void main(String x[])
   {
        int no=Integer.parseInt(x[0]);
         int sum=0;
        for(int i=1; i<no;i++)
        {
             if(no%i==0)
             { sum  = sum + i;
             }
        }
     if(sum==no)
     { System.out.printf("Number is perfect");
     }
     else
       {
         System.out.printf("Number is not perfect");
       }
   }
}
```

```
Command Prompt

C:\Program Files\Java\jdk1.8.0_291\bin>javac PerfectApp.java

C:\Program Files\Java\jdk1.8.0_291\bin>java PerfectApp 6
Number is perfect
C:\Program Files\Java\jdk1.8.0_291\bin>
```