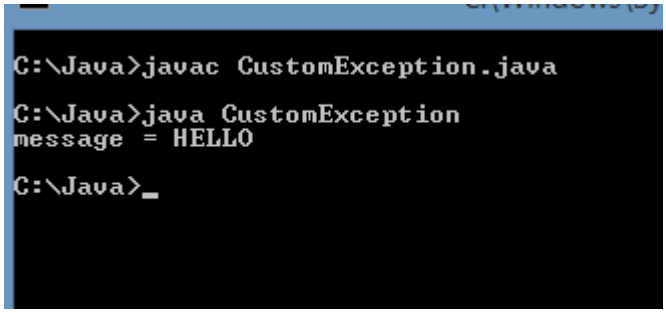
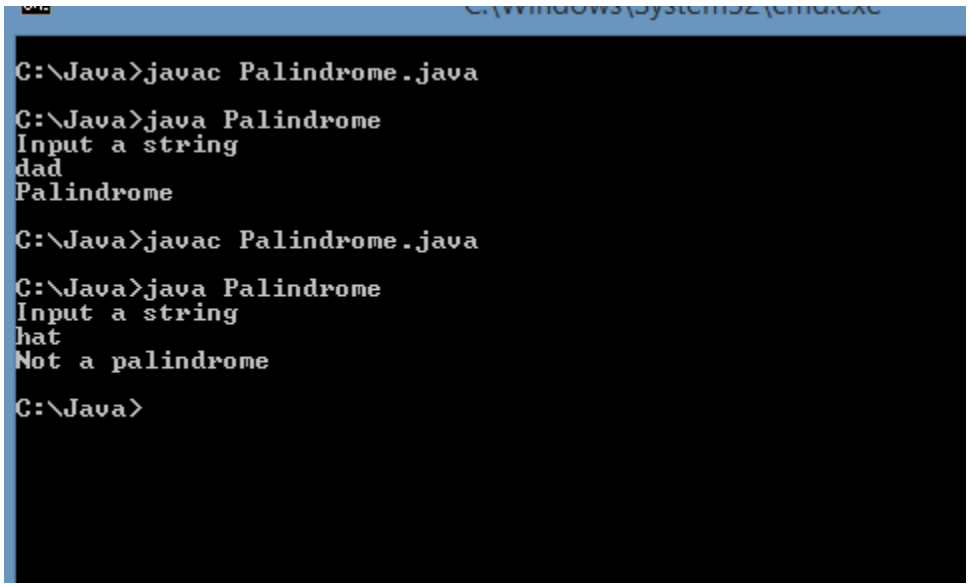
```
import java.util.*;
class MyException extends Exception
{
	String str;
	MyException(String str)
	{
		this.str = str;
	}
	public String toString()
	{
		return ("message = " + str);
	}
}
class CustomException
{
	public static void main(String[] args)
	{
		try
		{
			throw new MyException("HELLO");
		}
		catch(MyException e)
		{
			System.out.println(e);
		}
	}
}
```


C:\Java>javac CustomException.java
C:\Java>java CustomException
message = HELLO
C:\Java>

Palindrome

```
import java.util.*;
 class Palindrome
{
  public static void main(String args[])
  {
    String inputString;
    Scanner in = new Scanner(System.in);
    System.out.println("Input a string");
    inputString = in.nextLine();
    int length  = inputString.length();
    int i, begin, end, middle;
    begin  = 0;
    end    = length - 1;
    middle = (begin + end)/2;
    for (i = begin; i <= middle; i++) {
       if (inputString.charAt(begin) == inputString.charAt(end)) {
         begin++;
         end--;
      }
      else {
        break;
      }
    }
    if (i == middle + 1) {
      System.out.println("Palindrome");
    }
```

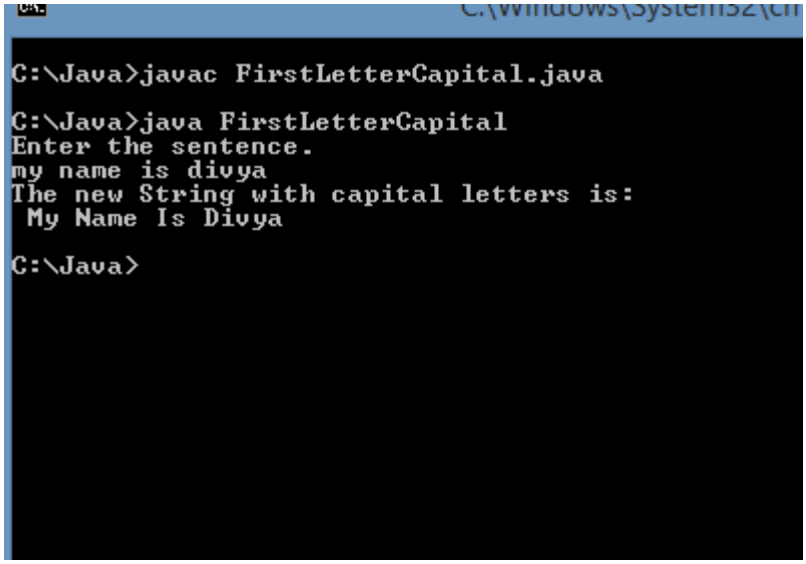
```
    else {
      System.out.println("Not a palindrome");
    }
  }
}
```



Capitalize first letter

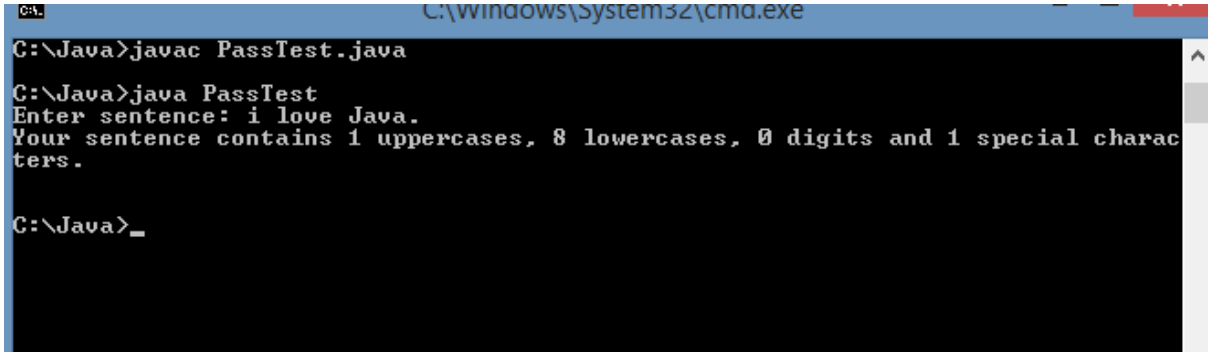
```
import java.util.*;
public class FirstLetterCapital
{
   public static void main(String args[])
   {
      Scanner ob=new Scanner(System.in);
      System.out.println("Enter the sentence.");
      String s=ob.nextLine();
      s=" "+s;
      String cap="";
      for(int i=0;i<s.length();i++)
      {
         char x=s.charAt(i);
         if(x==' ')
         {
            cap=cap+" ";
            char y=s.charAt(i+1);
            cap=cap+Character.toUpperCase(y);
            i++;
         }
         else
         {
            cap=cap+x;
         }
      }
      System.out.println("The new String with capital letters is: "+"\n"+cap);
```

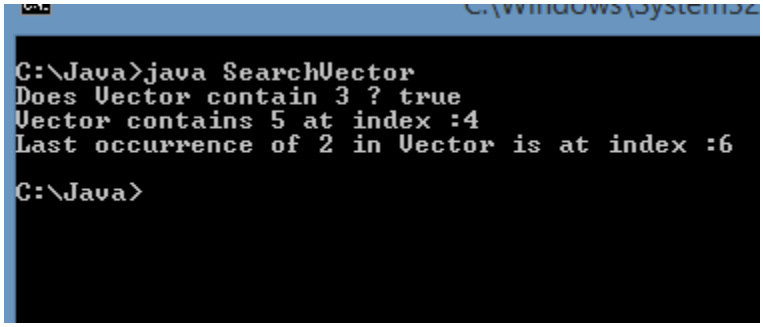
```
    }
}
```


C:\Java>javac FirstLetterCapital.java
C:\Java>java FirstLetterCapital
Enter the sentence.
my name is divya
The new String with capital letters is:
My Name Is Divya
C:\Java>

Counting uppercase, lowercase, digit, special character

```
import java.io.BufferedReader;

import java.io.InputStreamReader;

import java.io.IOException;

public class PassTest {

public static String password = "";

public static int upperCase = 0;

public static int lowerCase = 0;

public static int numberCount = 0;

 public static final String FINAL_CHAR_REGEX = "[!@#$%^&*()[\\\\]|;',./{}\\\\\\\\\:\\\"<>?]";

 public static void main(String[] args) throws IOException {

 BufferedReader dataIn = new BufferedReader(new InputStreamReader(System.in));

 System.out.print("Enter sentence: ");

  password = dataIn.readLine();

   for ( int i = 0; i < password.length() ; i++ ) {

            if (Character.isUpperCase(password.charAt(i))){ upperCase++; }

            if (Character.isLowerCase(password.charAt(i))){ lowerCase++; }

            if (Character.isDigit(password.charAt(i)))    { numberCount++;}

     }

    int specialCharCount = password.split(FINAL_CHAR_REGEX, -1).length - 1;

   System.out.printf("Your sentence contains %d uppercases, %d lowercases, %d digits and %d
special characters.\n\n", upperCase, lowerCase, numberCount, specialCharCount);

       ;

      }

}
```


C:\Windows\System32\cmd.exe
C:\Java>javac PassTest.java
C:\Java>java PassTest
Enter sentence: i love Java.
Your sentence contains 1 uppercases, 8 lowercases, 0 digits and 1 special charac
ters.
C:\Java>

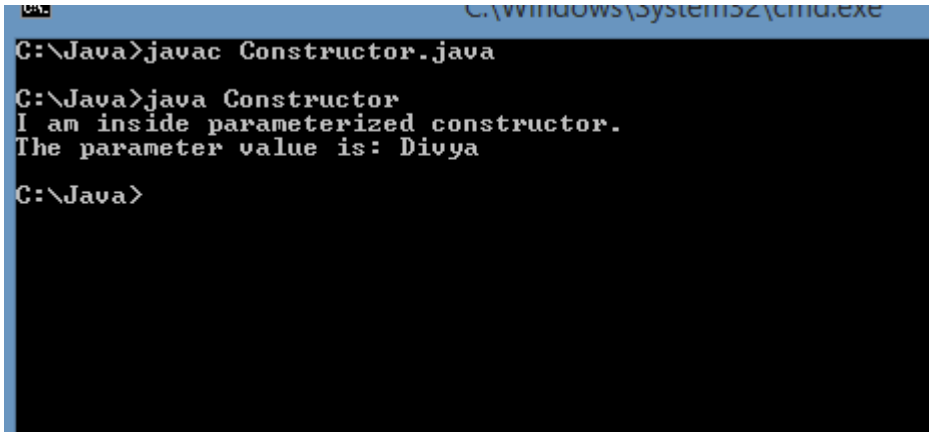

C:\Java>java SearchVector
Does Vector contain 3 ? true
Vector contains 5 at index :4
Last occurrence of 2 in Vector is at index :6
C:\Java>

Searching element in vector

```
import java.util.Vector;
 public class SearchVector {
   public static void main(String[] args) {
    Vector v = new Vector();
    v.add("1");
    v.add("2");
    v.add("3");
    v.add("4");
    v.add("5");
    v.add("1");
    v.add("2");

    boolean blnFound = v.contains("3");
    System.out.println("Does Vector contain 3 ? " + blnFound);
    int index = v.indexOf("5");
    if(index == -1)
      System.out.println("Vector does not contain 5");
    else
      System.out.println("Vector contains 5 at index :" + index);
      int lastIndex = v.lastIndexOf("2");
    if(lastIndex == -1)
      System.out.println("Vector does not contain 2");
    else
      System.out.println("Last occurrence of 2 in Vector is at index :" + lastIndex);
  }
}
```

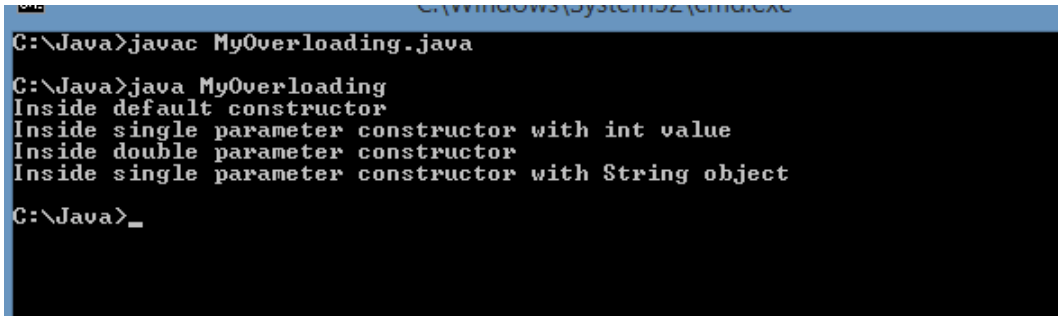
Constructor

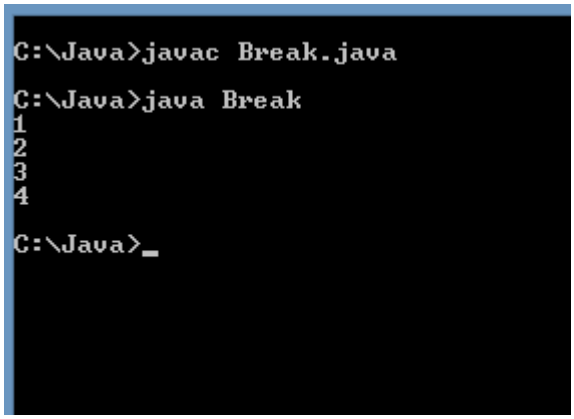
```
public class Constructor {

        private String name;

        public Constructor(String str){

       this.name = str;

       System.out.println("I am inside parameterized constructor.");

       System.out.println("The parameter value is: "+str);

    }

       public static void main(String a[]){

       Constructor mpc = new Constructor("Divya");

    }

}
```

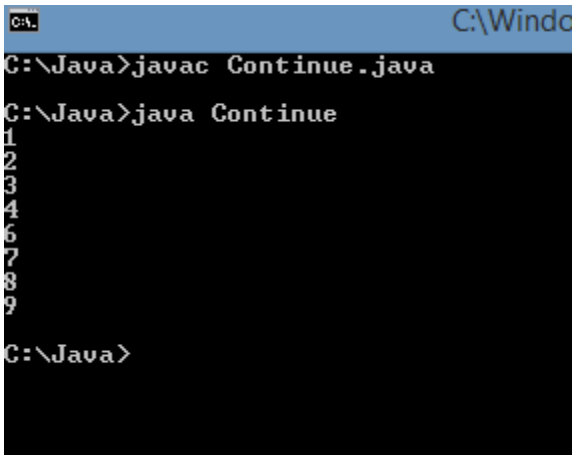


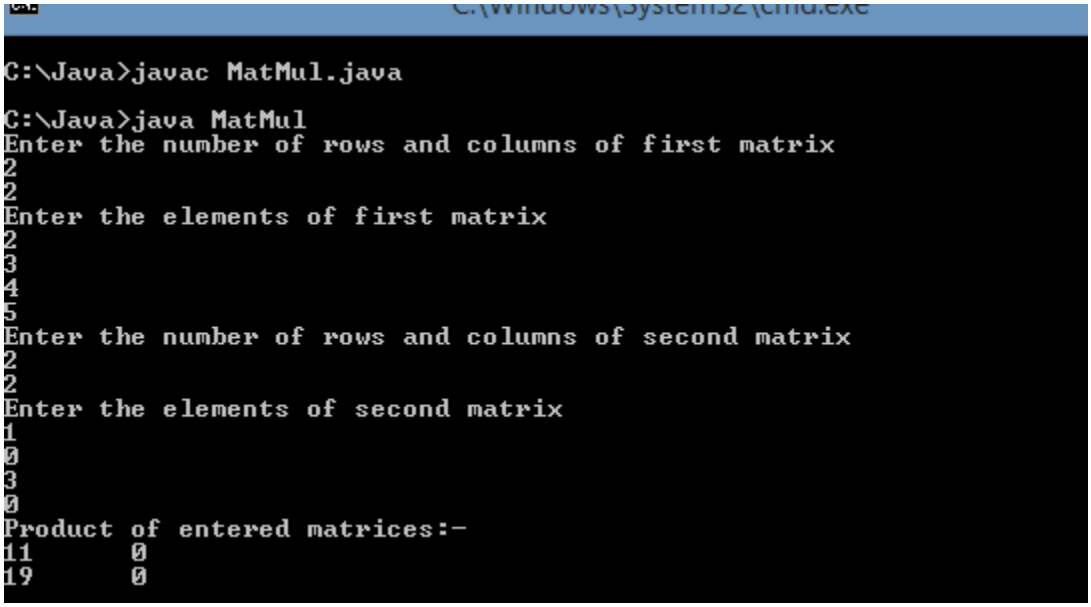
Constructor Overloading

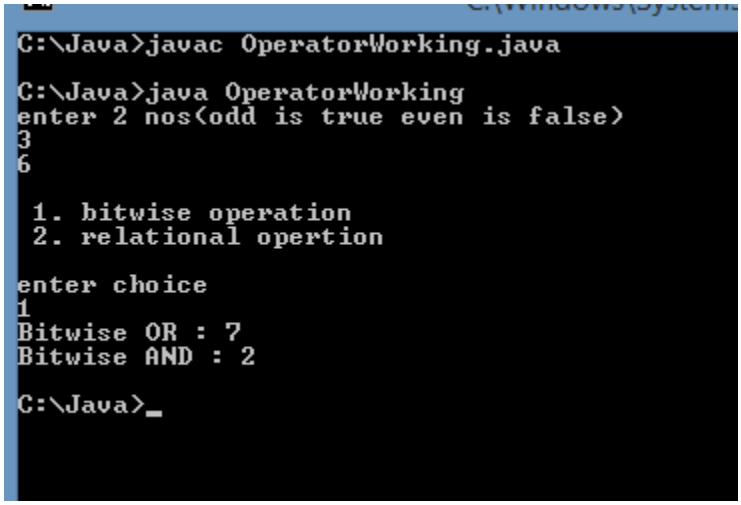
```
public class MyOverloading {
    public MyOverloading(){
    System.out.println("Inside default constructor");
  }
  public MyOverloading(int i){
    System.out.println("Inside single parameter constructor with int value");
  }
  public MyOverloading(String str){
    System.out.println("Inside single parameter constructor with String object");
  }
  public MyOverloading(int i, int j){
    System.out.println("Inside double parameter constructor");
  }
  public static void main(String a[]){
    MyOverloading mco = new MyOverloading();
    MyOverloading spmco = new MyOverloading(10);
    MyOverloading dpmco = new MyOverloading(10,20);
    MyOverloading dpco = new MyOverloading("java2novice");
  }
}
```

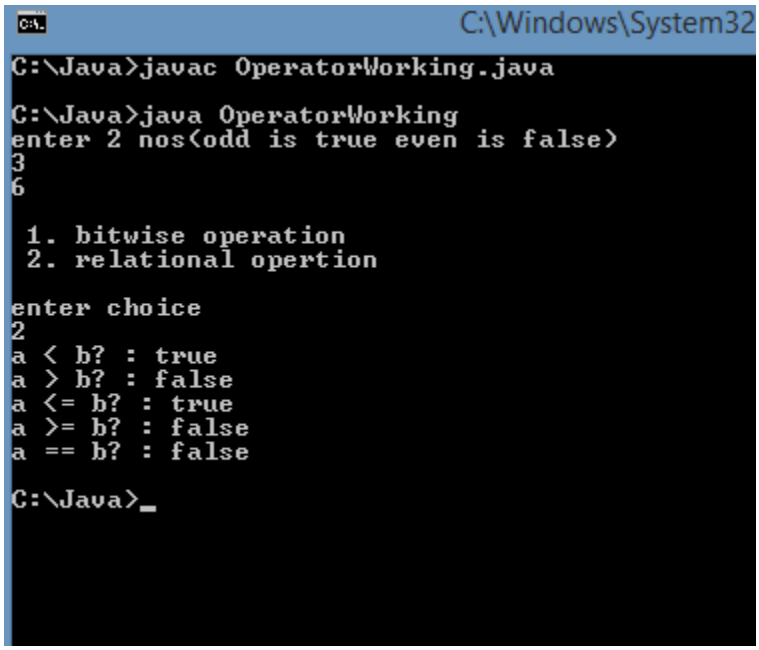

C:\Java>javac MyOverloading.java
C:\Java>java MyOverloading
Inside default constructor
Inside single parameter constructor with int value
Inside double parameter constructor
Inside single parameter constructor with String object
C:\Java>


C:\Java>javac Break.java
C:\Java>java Break
1
2
3
4
C:\Java>


C:\Windo
C:\Java>javac Continue.java
C:\Java>java Continue
1
2
3
4
6
7
8
9
C:\Java>


C:\Java>javac MatMul.java
C:\Java>java MatMul
Enter the number of rows and columns of first matrix
2
2
Enter the elements of first matrix
2
3
4
5
Enter the number of rows and columns of second matrix
2
2
Enter the elements of second matrix
1
0
3
0
Product of entered matrices:-
11 0
19 0


C:\Java>javac OperatorWorking.java
C:\Java>java OperatorWorking
enter 2 nos(odd is true even is false)
3
6
1. bitwise operation
2. relational opertion
enter choice
1
Bitwise OR : 7
Bitwise AND : 2
C:\Java>


C:\Windows\System32
C:\Java>javac OperatorWorking.java
C:\Java>java OperatorWorking
enter 2 nos(odd is true even is false)
3
6
1. bitwise operation
2. relational opertion
enter choice
2
a < b? : true
a > b? : false
a <= b? : true
a >= b? : false
a == b? : false
C:\Java>

Working of Operators

```
import java.util.*;
class OperatorWorking
{
	public static void main(String[] args)
	{
		int choice, a, b;
		Scanner sc = new Scanner(System.in);
		System.out.println("enter 2 nos(odd is true even is false)");
		a = sc.nextInt();
		b = sc.nextInt();
		System.out.println("\n 1. bitwise operation\n 2. relational opertion \n ");
		Scanner ab = new Scanner(System.in);
		System.out.println("enter choice");
		choice = ab.nextInt();
		switch(choice)
		{
			case 1 : System.out.println("Bitwise OR : " + (a|b));
					System.out.println("Bitwise AND : " + (a&b));

					break;

			case 2 : System.out.println("a < b? : " + (a < b));
					System.out.println("a > b? : " + (a > b));
					System.out.println("a <= b? : " + (a <= b));
					System.out.println("a >= b? : " + (a >= b));
					System.out.println("a == b? : " + (a == b));
```

```
                                        break;


                    }

            }

    }
```