PROGRAM 1

```
/* Write a Java Program to demonstrate use of nested class.*/

import java.lang.*;
class outer
 {
  int m=10;
  class inner
   {
     int n=20;
     void display()
     {
      System.out.println("m = "+m);
      System.out.println("n = "+n);
     }
   }
}

class nesteddemo
{
 public static void main(String arg[])
  {
outer outobj=new outer();
 outer.inner inobj=outobj.new inner();
 inobj.display();
   }
}
```

**********OUTPUT**********

```
C:\jdk1.6.0_26\bin>javac nesteddemo.java

C:\jdk1.6.0_26\bin>java nesteddemo

m = 10
n = 20
```

PROGRAM 2

```
/* Write a Java Program to implement array of objects. */

import java.lang.*;

public class EmployeeTest
   {
    public static void main(String[] args)
    {
     Employee[] staff = new Employee[3];
     staff[0] = new Employee("Harry Hacker", 3500);
     staff[1] = new Employee("Carl Cracker", 7500);
     staff[2] = new Employee("Tony Tester", 3800);
     for (int i = 0; i < 3; i++)
     staff[i].print();
    }
 }

class Employee
 {
  private String name;
  private double salary;
  public Employee(String n, double s)
    {
     name = n;
     salary = s;
    }
  public void print()
   {
    System.out.println(name + " " + salary);
   }
 }
```

**********OUTPUT**********

```
C:\jdk1.6.0_26\bin>javac EmployeeTest.java

C:\jdk1.6.0_26\bin>java EmployeeTest

Harry Hacker 3500.0
Carl Cracker 7500.0
Tony Tester 3800.0
```

PROGRAM 3

Write a Java program to practice using String class and its methods.

```
import java.lang.String;
class stringdemo
{
 public static void main(String arg[])
  {
   String s1=new String("gpt gulbarga");
   String s2="GPT GULBARGA";
   System.out.println(" The string s1 is : " +s1);
   System.out.println(" The string s1 is : " +s2);
   System.out.println(" Length of the string s1 is : "
   +s1.length());
   System.out.println(" The first occurence of r is at the position
   : " +s1.indexOf('r'));
   System.out.println(" The String in Upper Case : "
   +s1.toUpperCase());
   System.out.println(" The String in Lower Case : "
   +s1.toLowerCase());
   System.out.println(" s1 equals to s2 : " +s1.equals(s2));
   System.out.println(" s1 equals ignore case to s2 : "
   +s1.equalsIgnoreCase(s2));
   int result=s1.compareTo(s2);
   System.out.println("After compareTo()");
    if(result==0)
    System.out.println( s1 + " is equal to "+s2);
   else if(result>0)
    System.out.println( s1 + " is greather
    than to "+s2); else
    System.out.println( s1 + " is smaller than to "+s2);
    System.out.println(" Character at an index of 6 is :"
    +s1.charAt(6));
    String s3=s1.substring(4,12);
    System.out.println(" Extracted substring is :"+s3);
    System.out.println(" After Replacing g with a in s1 :
    " + s1.replace('g','a')); String s4=" This is a book
    ";
    System.out.println(" The string s4 is
    :"+s4); System.out.println(" After
    trim() :"+s4.trim());
  }
}
```

**********OUTPUT**********

```
c:\jdk1.6.0_26\bin>javac stringdemo.java

c:\jdk1.6.0_26\bin>java stringdemo

 The string s1 is : gpt gulbarga
 The string s1 is : GPT GULBARGA
 Length of the string s1 is : 12
 The first occurence of r is at the position : 9
```

```
The String in Upper Case : GPT GULBARGA

The String in Lower Case : gpt gulbarga
s1 equals to s2 : false
s1 equals ignore case to s2 : true
After compareTo()
gpt gulbarga is greather than to GPT
GULBARGA Character at an index of 6 is
:l Extracted substring is :gulbarga
After Replacing g with a in s1 : apt aulbaraa
The string s4 is :  This is a book
After trim()   :This is a book
```

PROGRAM 3(A)

Write a Java program to practice using String Buffer class and its methods.

```
import java.lang.String;
class stringbufferdemo
{
 public static void main(String arg[])
  {
   StringBuffer sb=new StringBuffer("This is my
   college"); System.out.println("This string sb is : "
   +sb); System.out.println("The length of the string
   sb is : " +sb.length()); System.out.println("The
   capacity of the string sb is : " +sb.capacity());
   System.out.println("The character at an index of 6
   is : " +sb.charAt(6)); sb.setCharAt(3,'x');

   System.out.println("After setting char x at position 3 : " +sb);
   System.out.println("After appending : " +sb.append(" in gulbarga
   "));
   System.out.println("After inserting : " +sb.insert(19,"gpt "));
   System.out.println("After deleting : " +sb.delete(19,22));
  }
}
```

*****************************OUTPUT***************************

```
c:\jdk1.6.0_26\bin>javac stringbufferdemo.java

c:\jdk1.6.0_26\bin>java stringbufferdemo

This string sb is : This is my college
The length of the string sb is : 18
The capacity of the string sb is : 34
The character at an index of 6 is : s
After setting char x at position 3 : Thix is my college
After appending : Thix is my college in gulbarga
After inserting : Thix is my college gpt in gulbarga
After deleting : Thix is my college in gulbarga
```

PROGRAM 4

Write a Java Program to implement Vector class and its methods.

```
import java.lang.*;
import java.util.Vector;
import java.util.Enumeration;
class vectordemo
{
public static void main(String arg[])
 {
  Vector v=new Vector();
   v.addElement("one");
   v.addElement("two");
   v.addElement("three");
   v.insertElementAt("zero",0);
   v.insertElementAt("oops",3);
   v.insertElementAt("four",5);
   System.out.println("Vector Size :"+v.size());
   System.out.println("Vector apacity :"+v.capacity());
   System.out.println(" The elements of a vector are :");
   Enumeration e=v.elements();
   while(e.hasMoreElements())
   System.out.println(e.nextElement() +" ");
   System.out.println();
   System.out.println("The first element is : " +v.firstElement());
   System.out.println("The last element is : " +v.lastElement());
   System.out.println("The object oops is found at position :
   "+v.indexOf("oops"));
   v.removeElement("oops");
   v.removeElementAt(1);
   System.out.println("After removing 2 elements ");
   System.out.println("Vector Size :"+v.size());
   System.out.println("The elements of vector are :");
   for(int i=0;i<v.size();i++)
   System.out.println(v.elementAt(i)+" ");
 }
}
```

**********OUTPUT**********

```
C:\jdk1.6.0_26\bin>javac vectordemo.java

C:\jdk1.6.0_26\bin>java vectordemo
Vector Size :6
Vector apacity :10
The elements of a vector are :
 zero
 one
 two
 oops
three
four

The first element is : zero
The last element is : four
```

```
The object oops is found at position : 3
After removing 2 elements
Vector Size :4
The elements of vector are :
zero
two
three
four
```