Problems for Implementation.

1) Create a class called Employee that includes three pieces of information as instance variables: first name, last name, and monthly salary. Your class should have a constructor that initializes the three instance variables. Provide a setter and getter method for each instance variable. If the monthly salary is not positive, set it to 0.0. Write a test application named EmployeeTest that demonstrates the Employee class's capabilities. Create two Employee objects and display each object's yearly salary. Then give each Employee a 10% raise and display each Employee's yearly salary again.

```
import java.util.*;
class Employee {
 String fname;
 String lname;
 double m_salary;
  public Employee() {
              fname = "";
               lname = "";
               m_salary = 0.0;
  }
   public void checkSalary(double M_salary){
      if (m_salary<0){
         m_salary = 0.0;
      }
      else{
         this.m_salary = M_salary;
      }
   }
    public void getInfo(){
      Scanner sc = new Scanner(System.in);
      System.out.println("Enter the first name:");
      fname = sc.nextLine();
      System.out.println("Enter the last name:");
      lname = sc.nextLine();
      System.out.println("Enter the monthly salary:"
m_salary = sc.nextDouble();
         sc.close();
 }
 public double getYearlySalary() {
         return m_salary * 12;
   }
 public double giveRaise() {
         return m_salary *= 1.10;
   }
   public void displayInfo() {
      System.out.println("First Name: " + fname);
      System.out.println("Last Name: " + lname);
      System.out.println("Monthly Salary: " +
m_salary);
      System.out.println("Yearly salary:"+
getYearlySalary());
      System.out.println("Monthly raise salary:"+
giveRaise());
   }
} class EmployeeTest{
   public static void main(String args[]){
      Employee ob1 = new Employee();
      ob1.getInfo();
      ob1.displayInfo();}
}
```

Output:

Enter the first name:

snehal

Enter the last name:

vibhute

Enter the monthly salary:

1000

First Name: snehal

Last Name: vibhute

Monthly Salary: 1000.0

Yearly salary:12000.0

Monthly raise salary:1100.0

2.Implement a Java program to print the area of a rectangle by creating a class named 'Area' that has two methods. The first method, named 'setDim', takes the length and breadth of the rectangle as parameters. The second method, named 'getArea', returns the area of the rectangle. The length and breadth of the rectangle are entered through the keyboard

```
public class Area {
   double length;
   double breadth;

   void setDim(double l,double b){
      length=l;
      breadth=b;
   }
   double get_area(){
      System.out.println("lenght" +
length);
      System.out.println("Breadth" +
breadth);
      return length*breadth;
   }
   public static void main(String[] args) {
      Area a=new Area();
      a.setDim(23.9, 13.4);
//    double v= a.Rect_arae();
     System.out.println("Area:" +
a.get_area());}
}
```

Output:

lenght23.9

Breadth13.4

Area:320.26

3.Write a Java program to demonstrate the use of static variables, static blocks, and static methods.

```
public class Static_use {
   static int a=3;
   static int b;
   static void method(int x){
      System.out.println("x=" + x);
      System.out.println("a=" + a);
      System.out.println("b=" + b);
      }
      static{
         System.out.println("Static
block is executed.");
         b=a*4;
      }
      public static void main(String []
args){
         method(4);
      }
```

Output:

Static block is executed.

x=4

a=3

b=12

4.Write a Java program to implement a stack and a queue.

```
import java.util.*;
public class stack1 {
  // Push operation
   int push(int n, int[] arr, int top) {
      if (top == n - 1) {
         System.out.println("Overflow condition");
      } else {
         Scanner s = new Scanner(System.in);
         top++;
         System.out.println("Push element at index " + top);
```

```
        int num = s.nextInt();
        arr[top] = num;
    }
    return top;
}

// Display operation
void display(int n, int[] arr, int top) {
    if (top == -1) {
        System.out.println("Stack is empty");
    } else {
        System.out.println("Elements in stack:");
        for (int i = top; i >= 0; i--) {
            System.out.println(arr[i]);
        }
    }
}

// Pop operation
int pop(int[] arr, int top) {
    if (top == -1) {
        System.out.println("Underflow condition!");
    } else {
        System.out.println("Popped element: " + arr[to
        top--;
    }
    return top;
}

public static void main(String[] args) {
    int n;
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter size of stack");
    n = sc.nextInt();
    int[] arr = new int[n];
    int top = -1;

    Stack obj = new Stack();
    int choice;
do{  System.out.println("1.perform push");
    System.out.println("2.dispaly");
    System.out.println("3.perform pop");
    System.out.println("4.exit");
    System.out.println("Enter Choice");
    choice=sc.nextInt();

    switch(choice){
    case 1:{
        // Push elements to the stack
    for (int i = 0; i < n; i++) {
    top = obj.push(n, arr, top);
    }
    break;

    case 2:{
        obj.display(n, arr, top);
        break;
    }
    case 3:{
        while (top >= 0) {
            top = obj.pop(arr, top);
}
```

```
            }
            break;

        }
        case 4:
        {
            System.out.println("Exit");
        }
}while(choice!=4);
  }
}
```

Output

```
Enter size of stack
4
1.perform push
2.dispaly
3.perform pop
4.exit
Enter Choice
1
Push element at index 0
2
Push element at index 1
4
Push element at index 2
5
Push element at index 3
7
Enter Choice
4
Exit
```

5. Write a Java program to arrange 10 names in alphabetical order.

```
import java.util.*; class Names
{
        public static void main(String args[])
        {
 String[] names = new String[10];   Scanner sc = new
Scanner(System.in);   for(int i =0;i<10;i++)
                {
                        names[i] = sc.nextLine();
                }
                int arr[] = new int[10];            for(int i
=0;i<10;i++){                   arr[i] =
(int)names[i].charAt(0);
                }
                for(int i=0;i<10;i++)
                {
                        for(int j = i+1;j<10;j++)
                        {
                                if(arr[i] > arr[j])
                                {
                                        int temp =
arr[j];                                 arr[j] = arr[i];
                                        arr[i] = temp;
                                }
                }
}
                System.out.println();
 System.out.println("Names in alphabetical order");
for(int i =0;i<10;i++){
 for(int j =0;j<10;j++){
  if(arr[i] == (int)names[j].charAt(0))
)){
System.out.println(""+names[j]); }}}
}}
```

Output:

```
Swaroop
Vilas
Zion
Gukesh
Puresh
Kali
Anil
Bhagwat
Nilesh
Don

Names in alphabetical order
Anil
Bhagwat
Don
Gukesh
Kali
Nilesh
Puresh
Swaroop
Vilas
Zion
```