1)

import java.util.\*;

public class Accounts {

int account\_id;

String name;

float balance;

static Accounts acc[];

static int count = 0;

static int n;

public static void main(String args[]) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter the number of Accounts: ");

n = sc.nextInt();

acc = new Accounts[n];

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

acc[i] = new Accounts();

}

boolean flag = true;

while(flag) {

System.out.println();

System.out.println("Choose the functionality you want to perform:");

System.out.println("1. Add account details\n2. Delete account details\n3. Display account details\n4. Exit");

int choice = sc.nextInt();

switch(choice) {

case 1:

if (count == n) {

System.out.println("Limit reached. Can't add more records.");

}

else {

add();

}

break;

case 2:

if (count <= 0) {

System.out.println("Account records are empty. No data present, to be deleted");

}

else {

delete();

}

break;

case 3:

if (count <= 0) {

System.out.println("Empty record database. Nothing to display.");

}

else{

display();

}

break;

case 4:

flag = false;

System.exit(0);

break;

default:

System.out.println("Invalid option entered.");

}

}

}

public static void add() {

Scanner sc1 = new Scanner(System.in);

Accounts add\_acc = new Accounts();

System.out.println("Enter the account id: ");

add\_acc.account\_id = sc1.nextInt();

for (int i = 0; i < count; i++) {

while(add\_acc.account\_id == acc[i].account\_id) {

System.out.println("Enter the account id: ");

add\_acc.account\_id = sc1.nextInt();

}

}

System.out.println("Enter name of account holder: ");

add\_acc.name = sc1.next();

System.out.println("Enter balance of account: ");

add\_acc.balance = sc1.nextFloat();

acc[count++] = add\_acc;

System.out.println("Account Record added successfully.");

}

public static void delete() {

Scanner sc2 = new Scanner(System.in);

System.out.println("Enter the account ID: ");

int account\_id = sc2.nextInt();

int delete\_index = -1;

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

if (acc[i].account\_id == account\_id) {

delete\_index = i;

break;

}

}

if (delete\_index == -1) {

System.out.println("Account record not present in database");

}

else {

System.out.println("Account record successfully deleted");

for (int i = delete\_index + 1; i < acc.length; i++){

acc[i - 1] = acc[i];

}

count --;

}

}

public static void display() {

System.out.println("Account ID\tAcc. Holder Name\tBalance");

int n=acc.length;

for(int i=0;i<n-1;i++)

{

for(int j=0;j<n-i-1;j++)

{

if(acc[i].balance<acc[j].balance)

{

float temp = acc[j].balance;

acc[j].balance = acc[j+1].balance;

acc[j+1].balance = temp;

}

}

}

for (int i = 0; i < count; i++) {

if (acc[i].account\_id != 0) {

System.out.println(acc[i].account\_id + "\t\t" + acc[i].name + "\t\t\t" + acc[i].balance);

}

}

}

}

2)

public class Cylinder extends Circle {  // Save as "Cylinder.java"

   private double height;  // private variable

   // Constructor with default color, radius and height

   public Cylinder() {

      super();        // call superclass no-arg constructor Circle()

      height = 1.0;

   }

   // Constructor with default radius, color but given height

   public Cylinder(double height) {

      super();        // call superclass no-arg constructor Circle()

      this.height = height;

   }

   // Constructor with default color, but given radius, height

   public Cylinder(double radius, double height) {

      super(radius);  // call superclass constructor Circle(r)

      this.height = height;

   }

   // A public method for retrieving the height

   public double getHeight() {

      return height;

   }

   // A public method for computing the volume of cylinder

   //  use superclass method getArea() to get the base area

   public double getVolume() {

      return getArea()\*height;

   }

}

public class TestCylinder {  // save as "TestCylinder.java"

   public static void main (String[] args) {

      // Declare and allocate a new instance of cylinder

      //   with default color, radius, and height

      Cylinder c1 = new Cylinder();

      System.out.println("Cylinder:"

            + " radius=" + c1.getRadius()

            + " height=" + c1.getHeight()

            + " base area=" + c1.getArea()

            + " volume=" + c1.getVolume());

      // Declare and allocate a new instance of cylinder

      //   specifying height, with default color and radius

      Cylinder c2 = new Cylinder(10.0);

      System.out.println("Cylinder:"

            + " radius=" + c2.getRadius()

            + " height=" + c2.getHeight()

            + " base area=" + c2.getArea()

            + " volume=" + c2.getVolume());

      // Declare and allocate a new instance of cylinder

      //   specifying radius and height, with default color

      Cylinder c3 = new Cylinder(2.0, 10.0);

      System.out.println("Cylinder:"

            + " radius=" + c3.getRadius()

            + " height=" + c3.getHeight()

            + " base area=" + c3.getArea()

            + " volume=" + c3.getVolume());

   }

}