**Assignment 4 - OOPS With JAVA**

**Name – Vaibhav Balasaheb Gargote**

**R\_no – 200940381125**

1)WAP to define a class Student with attributes rollno, name , marks accept data for 2 objects and display them.

class Student

{

int rollno;

String name;

int marks;

void display()

{

System.out.println("RollNo:"+rollno);

System.out.println("Name:"+name);

System.out.println("Marks:"+marks);

}

public static void main(String args[])

{

Student stud1 = new Student();

stud1.name="Viraj";

stud1.rollno=1;

stud1.marks=89;

stud1.display();

Student stud2 = new Student();

stud2.name = "Raju";

stud2.rollno = 2;

stud2.marks=99;

stud2.display();

}

}

2)WAP to define a class Book with attributes id, name , price accept data for 5 objects display book with highest price.\*/

import java.util.Scanner;

class Book{

Scanner input = new Scanner(System.in);

int bookid,price;

String name;

void getdata()

{

System.out.println("Enter the Name of book");

name=input.nextLine();

System.out.println("Enter the Book Id");

bookid=input.nextInt();

System.out.println("Enter the Price");

price=input.nextInt();

}

}

public class BookDemo{

void compare(Book b1,Book b2,Book b3)

{

if (b1.price>b2.price && b1.price>b3.price)

{

System.out.println("Book with highest price: "+b1.name);

}else if(b2.price>b3.price)

{

System.out.println("Book with highest price: "+b2.name);

}else

{

System.out.println("Book with highest price: "+b3.name);

}

}

public static void main(String[] args) {

Book b1= new Book();

b1.getdata();

Book b2=new Book();

b2.getdata();

Book b3 = new Book();

b3.getdata();

BookDemo demo=new BookDemo();

demo.compare(b1,b2,b3);

}

}

3)WAP to define a class Bank accept customerid, name, balance write method

to perform deposit, checkbal, withdraw keep min balance 1000.

import java.util.Scanner;

class Manupulation

{

static int min\_balance=500;

void balance\_enquiry()

{

int Balance= min\_balance;

System.out.println("Your account balance is "+Balance);

}

void withdraw(int amount)

{

if (min\_balance-amount>=500)

{

min\_balance = min\_balance-amount;

System.out.println("Your account balance is "+ min\_balance);

}else

{

System.out.println("Your account balance too low "+ min\_balance);

}

}

void Credit(int amount)

{

min\_balance= min\_balance+amount;

System.out.println("Your account balance is "+ min\_balance);

}

}

class Banking

{

public static void main(String[] args)

{

Manupulation M1=new Manupulation();

Scanner input = new Scanner(System.in);

String ch;

int option;

char y;

do {

System.out.println("Choose operation you want to perform...enter 0 to exit");

System.out.println("1.balance enquiry");

System.out.println("2.withdraw");

System.out.println("3.credit");

option = input.nextInt();

if(1<=option && option<=3)

{

switch( option)

{

case 1:

M1.balance\_enquiry();

break;

case 2:

System.out.println("Enter withdraw amount.");

int amount = input.nextInt();

M1.withdraw(amount);

break;

case 3:

System.out.println("Enter Credit amount.");

int amount1 =input.nextInt();

M1.Credit(amount1);

break;

}

}else

{

System.out.println("Please enter valid input");

}

System.out.println("you want to continue ");

System.out.println("press Yes for yes or any key for No ");

ch=input.next();

}while(ch.equals("Y") );

`

}

}

4)WAP to define a class Employee with attributes id, name ,designation accept data for 5 objects and display employee details whose designation is Manager.

import java.util.Scanner;

class Employee

{

int id;

String name;

String designation;

Employee()

{

}

Employee(int id, String name, String designation)

{

this.id = id;

this.name = name;

this.designation = designation;

}

void display()

{

System.out.println("Id:"+this.id);

System.out.println("Name:"+this.name);

System.out.println("Designation:"+this.designation);

}

Employee search(Employee[] emp, String person)

{

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

{

String comp=emp[i].designation;

if(comp.equals(person)){

return emp[i];

}

}

return null;

}

}

public class EmployeeDemo

{

public static void main(String args[])

{

Employee emp1 = new Employee();

Scanner sc = new Scanner(System.in);

System.out.println("Enter number of employees");

int n = sc.nextInt();

Employee[] emp = new Employee[n];

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

{

System.out.println("Enter"+(i+1)+"Employee Id:");

int id = sc.nextInt();

System.out.println("Enter"+(i+1)+"Employee Name:");

sc.nextLine();

String name = sc.nextLine();

System.out.println("Enter"+(i+1)+"Employee Designation");

//sc.nextLine();

String designation = sc.next();

emp[i]= new Employee(id,name,designation);

}

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

{

System.out.println("Id:= "+emp[i].id);

System.out.println("Name := "+emp[i].name);

System.out.println("Designation := "+emp[i].designation);

}

System.out.println("Search for employee whose designation is manager");

sc.nextLine();

String person=sc.nextLine();

Employee empDetails=emp1.search(emp,person);

System.out.println("\n\n\n");

System.out.println("details ID := "+empDetails.id);

System.out.println("details NAME := "+empDetails.name);

System.out.println("details Designation := "+empDetails.designation);

}

}

5)WAP to define Class Simpleinterest with attributes principalamount, rate of interest static ,number of years calculate SI and display it.

class Simpleinterest

{

int principalAmount;

static double rateOfInterest;

int numberOfYears;

double interest=0;

void Interest()

{

this.interest = (this.principalAmount \* rateOfInterest \* this.numberOfYears)/100;

System.out.println("Interest is:"+this.interest);

}

}

class SimpleInterestDemo

{

public static void main(String args[])

{

Simpleinterest si = new Simpleinterest();

si.principalAmount=100;

Simpleinterest.rateOfInterest=5.2;

si.numberOfyears=3;

si.Interest();

}

}

}

6)Write a program Complex number to add the real and imaginary part for 2 complex numbers

public class ComplexNumber{

double real, img;

ComplexNumber(double r, double i){

this.real = r;

this.img = i;

}

public static ComplexNumber sum(ComplexNumber c1, ComplexNumber c2)

{

ComplexNumber temp = new ComplexNumber(0, 0);

temp.real = c1.real + c2.real;

temp.img = c1.img + c2.img;

//returning the output complex number

return temp;

}

public static void main(String args[]) {

ComplexNumber c1 = new ComplexNumber(5.5, 4);

ComplexNumber c2 = new ComplexNumber(1.2, 3.5);

ComplexNumber temp = sum(c1, c2);

System.out.printf("Sum is: "+ temp.real+" + "+ temp.img +"i");

}

}