22-12-2023 1) Method Overloading :

I/p :

```
class Overload
{
    void Print(int a)
    {
        int i=1;
        int sum=0;
        for(i=1; i<=a; i++)
        {
            sum=sum+i;
        }
        System.out.println(sum);
    }
    void Print(int a, int b)
    {
        int i, j, flag=0;
        for(i=a; i<b; i++)
        {
            for(j=2; j<i; j++)
            {
                if(i%j==0)
                {
                    flag=1;
                    break;
                }
            }
            if(flag==0)
            {
                System.out.println(i);
            }
            flag=0;
        }
    }
}
```

```
class Method {
    public static void main (String a[])
    {
        Overload O1 = new Overload();
        O1.Print(3);
        O1.Print(5,10);
    }
}
```

O/p :-

```
6
5
7
```

2) Grocery :

I/p :-

```
class Grocery
{
    String c_name;
    String c_phone;
    int dal, pulses, rice;
    Grocery (String c_name, String c_phone,
             int dal, int pulses, int rice)
    {
        this.c_name = c_name;
        this.c_phone = c_phone;
        this.dal = dal;
        this.pulses = pulses;
        this.rice = rice;
    }
    void cal_amt()
    {
        System.out.println(c_name);
        System.out.println(c_phone);
        System.out.println((dal*150)+(pulses*80)+
```

```
        (rice*20));
    }
}

class Main1
{
    public static void main(String a[])
    {
        Grocery G1=new Grocery("H", "1234", 2,6,10);
        Grocery G2=new Grocery("J", "5678", 1,3,5);
        Grocery G3=new Grocery("P", "1356", 4,12,20);
        G1.cal_amt();
        G2.cal_amt();
        G3.cal_amt();
    }
}
```

O/P :-

```
H
1234
1030
J
5678
515
P
1357
2060
```

3) If :-

```
import java.util.Scanner;
class Quad {
    int a, b, c;
    double r1, r2, d;
    Scanner s = new Scanner(System.in);
    void inp()
    {
        System.out.println("Values of a,b,c in order: ");
        a = s.nextInt();
        b = s.nextInt();
        c = s.nextInt();
    }
    void disc() {
        d = (b*b) - (4*a*c);
    }
    void cal_Roots() {
        if (d>0)
        {
            System.out.println("Real & unequal Roots");
            r1 = (-b + Math.sqrt(d)) / (2*a);
            r2 = (-b - Math.sqrt(d)) / (2*a);
            System.out.println(r1);
            System.out.println(r2);
        }
```

```
else if (d==0)
{
    System.out.println("Real & equal");
    r1=(-b+Math.sqrt(d))/(2*a);
    System.out.println(r1);
}
else
{
    System.out.println("Imaginary roots");
}
};
class Main{
public static void main(String a[])
    {Quad q=new Quad();
     q.inp();
     q.disc();
     q.cal-Roots();
    }
}
```

Op:- Enter the values of a, b, c in order:

1 4 4

Real & equal roots

-2

12/01/2024

BOOKS

I/p:

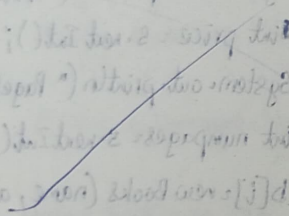
```
import java.util.Scanner;
class Books {
    String name;
    String author;
    int price;
    int numpages;

    Books(String name, String author, int price,
            int numpages) {
        this.name = name;
        this.author = author;
        this.price = price;
        this.numpages = numpages;
    }
    public String toString() {
        String bookName = "Book Name : " + this.name
                + "\n";
        String authorname = "Author Name : " + this.author
                + "\n";
        String bookprice = "Price : " + this.price + "\n";
        String pages = "No. of pages : " + this.numpages
                + "\n";
        return bookName + authorname + bookprice
                + pages;
    }
}
```

```
class Run {
    public static void main(String a[]) {
        Scanner s = new Scanner(System.in);
        int n;
        System.out.println("Enter the no. of books: ");
        n = s.nextInt();
        Books b[] = new Books[n];
        for (int i=0; i<n; i++)
        {
            System.out.println("\nDetails of Book - " +
                    (i+1) + " :\n");
            System.out.println("Enter the name of Book: ");
            String name = s.next();
            System.out.println("Author: ");
            String author = s.next();
            System.out.println("Price: ");
            int price = s.nextInt();
            System.out.println("Pages: ");
            int numpages = s.nextInt();
            b[i] = new Books(name, author, price, numpages);
        }
        System.out.println("\nDetails of all Books: ");
        for (Books book : b) {
            System.out.println(book.toString());
        }
    }
}
```

O/p:

```
Enter the no. of books:
1
Details of Book_1:
Enter the name of Book:
Harry Potter
Enter the name of Author:
JK Rowling
Enter the Price:
300
Enter the no. of pages:
200
Details of all Books:
Book Name: Harry Potter
Author Name: JK Rowling
Price: 300
Number of Pages: 200
```



2) Student

I/p:

```
import java.util.Scanner;
class Student {
    String USN;
    String name;
    double[] marks = new double[6];
    void Details() {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter USN: ");
        USN = s.nextLine();
        System.out.println("Enter Name: ");
        name = s.nextLine();
        System.out.println("Enter marks in 6 subs: ");
        for (int i=0; i<6; i++)
        {
            System.out.println("Sub " + (i+1) + ": ");
            marks[i] = s.nextDouble();
        }
        double calc_perc() {
            double totalMarks = 0;
            for (double mark: marks) {
                totalMarks = totalMarks+mark;
            }
            return (totalMark/6);
        }
        void dis_Details() {
            System.out.println("\n Student Details:");
            System.out.println("USN: " +USN)
```

```
        System.out.println("Name: "+name);
        System.out.println("Marks: ");
        for(int i=0; i<6; i++){
            System.out.println("Sub "+(i+1)+": "+
                                marks[i]);
        }
        System.out.println("Perc. avg = "+calc_Perc()+"%");
    }
}
class Main{
    public static void main(String a[]){
        Scanner sl = new Scanner(System.in);
        System.out.println("No. of students: ");
        int n = sl.nextInt();
        Student[] stud = new Student[n];
        for(int i=0; i<n; i++)
        {
            System.out.println("Details of Student "
                               +(i+1)+":");
            stud[i] = new Student();
            stud[i].Details();
        }
        for(int i=0; i<n; i++){
            stud[i].dis_Details();
        }
    }
}
```

O/P:

```
Enter the no. of students: 1
Details of Student 1:
Enter USN: 001
Enter Name: Karun
Marks in 6 subs:
Sub1 : 10
Sub2 : 10
Sub3 : 10
Sub4 : 10
Sub5 : 10
Sub6 : 10
Student Details:
USN: 001
Name: Karun
Marks:
Sub1: 10
Sub2: 10
Sub3: 10
Sub4: 10
Sub5: 10
Sub6: 10
avg Percentage: 10%
```

19/01/2024 Abstract class :

```
abstract class Shape {
    double a;
    double b;
    abstract void printArea();
}
class Rectangle extends Shape{
    double RArea;
    Rectangle(double a, double b){
    super.a=a;
    super.b=b;
    }
    void printArea(){
        RArea= super.a*super*b;
        System.out.println("Area of Rectangle is:"
                                    + RArea);
    }
}
class Triangle extends Shape {
    double TArea;
    Triangle(double a, double b){
        super.a=a;
        super.b=b;
    }
    void printArea(){
        TArea=0.5*super.a*super.b;
        System.out.println("Area of Triangle is:"
                                    + TArea);
    }
}
class Circle extends Shape {
    double CArea;
    Circle(double a){
        super.a=a;
    }
    void printArea(){
        CArea=3.14*super.a*super.a;
        System.out.println("Area of circle is: "
                                    + CArea);
    }
}
class Run {
    public static void main(String a[]){
        Rectangle r=new Rectangle(5,5);
        Triangle t=new Triangle(10,5);
        Circle c=new Triangle(5);
        Shape sref;
        sref=r;
        sref.printArea();
        sref=t;
        sref.printArea();
        sref=c;
        sref.printArea();
    }
}
```

Opt:

```
Area of Rectangle is: 25.0
Area of Triangle is: 25.0
Area of Circle is: 78.5
```

19.01.24

→ Bank :-

i/p :-

```
class Account {
    String name;
    int accno;
    char type;
    double bal;
    Account(String n; int a; char t, double b)
    {   name=n;
        accno=a;
        type=t;
        bal=b;
    }
    void deposit(double amt){
        bal=bal+amt;
        System.out.println("Updated
                Balance: " +bal);
    void withdrawal(double amt) {
        bal=bal-amt;
        System.out.println("Updated
                Balance: " +bal);
    void display(){
        System.out.println("Acc Name: "+name);
        System.out.println("A. Num: "+accno);
        System.out.println("Type "+type);
        System.out.println("Balance: "+bal);
    }
}
```

```
class Cur_acc extends Account {
    void minbal() {
        System.out.println("cheque book facility exist");
        System.out.println("Min. bal : 1000");
        if (super.bal<1000) {
            System.out.println("Penalty of
                    100 charged");
            super.bal=super.bal-100;
        }
    }
}
class Sav_acc extends Account{
    double intst;
    void interest() {
        System.out.println("cheque book facility doesn't
                exist");
        System.out.println("2% interest facility");
        intst=0.02*super.bal;
        System.out.println("Interest is : "+intst);
    }
}
class Run {
    public static void main(String a[]) {
        Account A=new Account("Karun", 1234, C, 2000);
        A.display();
        A.deposit(100);
        A.withdrawal(1000);
    }
}
```

16/02/2024

* Student Class (CIE & ~~Internals~~ SEE packages):-

→ Student class ⇒

```
package cie;
class Student {
    String usn = new String();
    String name = new String();
    int sem;

    Student(String usn, String name,
            int sem) {
        this.usn = usn;
        this.name = name;
        this.sem = sem;
    }
    void studentDetails() {
        System.out.println("USN: "+usn);
        System.out.println("Name: "+name);
        System.out.println("Sem: "+sem);
    }
}
```

→ Internals class ⇒

```
package cie;
import java.util.Scanner;
class Internals extends Student {
    public int[] marks = new int[5];
    Scanner s = new Scanner(System.in);
    Internals(String a, String b, int c) {
        super(a,b,c);
    }
    void inputMarks() {
        System.out.println("Internal marks: ");
        for (int i=0; i<5; i++) {
            marks[i] = s.nextInt();
        }
    }
    void disp() {
        System.out.println("Internal marks are:");
        for (int i=0; i<5; i++) {
            System.out.println(marks[i]);
        }
    }
}
```

→ Externals class ⇒

```
package see;
import cie.Student;
import java.util.Scanner;
class Externals extends Student {
    public int[] marks = new int[5];
    Scanner s = new Scanner(System.in);
```

```
void smarks() {
    System.out.println("External marks: ");
    for (int i=0; i<5; i++) {
        int m = s.nextInt();
        marks[i] = m;
    }
}

void sdisp() {
    System.out.println("Ext. Marks are: ");
    for (int i=0; i<5; i++) {
        System.out.println(marks[i]);
    }
}
```

Run

```
import cie.*;
import eee.*;
class Run {
    public static void main(String a[]){
        int i=0;
        Internals s1 = new Internals("1BM22CS332",
                                     "Karan", 3);
        s1.inputMarks();
        s1.disp();
        Externals s2 = new Externals("1BM22CS332",
                                     "Karan", 3);
        s2.smarks();
        s2.sdisp();
    }
}
```

O/p

```
USN: 1BM22CS332
Name: Karan
Sem: 3
Internal Marks are: 45 46 47 48 49 50
External Marks are: 95 96 97 98 99 100
```

*Exceptions :-

```
import java.util.Scanner;
class WrongAge extends ~~Exception~~Exception {
    WrongAge() {
        super("Invalid age")
    }
}
class Father {
    ~~private int~~
    public int age;
    Father(~~int~~ int age) throws WrongAge {
        if (age<0) {
            throw new WrongAge();
        }
        this.age=age;
    }
}
```

```
class Son extends Father {
    public int sonAge;
    Son(int fa, int sA) throws WrongAge{
        super(fa);
        if (sA > fa) {
            throw new WrongAge();
        }
        sonAge = sA;
    }
}
class Exception6x {
    public static void main(String a[]){
        try {
            Father f1 = new Father(-30);
            Son s1 = new Son(20);
        }
        catch (Exception e) {
            System.out.println(e.getMessage());
        }
    }
```

O/p :- Invalid age

28/02/2024

Q:- Creating label, button & TextField in a Frame using AWT.

I/p :-

```
import java.awt.*;
import java.awt.event.*;
public class AWTExample extends WindowAdapter{
    Frame f;
    AWTExample(){
        f = new Frame();
        f.addWindowListener(this);
        Label l = new Label("Employee ID");
        Button b = new Button("Submit");
        TextField t = new TextField();

        l.setBounds(20, 80, 80, 30);
        t.setBounds(100, 100, 80, 30);
        b.setBounds(20, 100, 80, 30);

        f.add(b);
        f.add(l);
        f.add(t);
        f.setSize(400, 300);
        f.setTitle("Employee Info:");
        f.setLayout(null);
        f.setVisible(true);
    }
```

```
public void windowClosing (WindowEvent e)
{
    System.exit(0);
}

public static void main(String args[])
{
    AWTExample awt_obj = new AWTExample();
}
}
```