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**Department of Computer Science and Engineering**



## **OOJ Lab Report 2021**

*Submitted by*

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*Under the Guidance of*  
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## LAB1

```
import java.util.Scanner; public class Quadratic
{
public static void main(String[] args) {
double a,b,c,d;
double root1,root2;
Scanner inp =new Scanner(System.in);
System.out.println("enter the value of a,b and c
respectively:"); a=inp.nextDouble();
b=inp.nextDouble(); c=inp.nextDouble(); d=((b*b)-
(4*a*c)); if(d>0){
System.out.println("roots are real");
root1= (-b + Math.sqrt(d))/(2 * a);
root2= (-b - Math.sqrt(d))/(2 * a);
System.out.println("root1="+root1+" roots="+root2);
}
else if(d==0){
System.out.println("roots are real and equal"); root1 =
root2 = -b / (2 * a);
} else{
System.out.println("roots are imaginary"); }
} }
```

### Lab Week 3

(a) Finding solution to given quadratic equation.

import java.util.Scanner;

```
public class Quadratic {
```

```
    public static void main (String args[]) {
```

```
        double a,b,c,d,f=
```

```
        double root1, root2;
```

```
        Scanner inp = new Scanner (System.in)
```

```
        System.out.println ("Enter value of a b & c");
```

```
        a = inp.nextDouble();
```

```
        b = inp.nextDouble();
```

```
        c = inp.nextDouble();
```

```
        d = ((b*b)-(4*a*c));
```

```
        if (d > 0) {
```

```
            System.out.println ("Roots are real");
```

```
            root1 = (-b + Math.sqrt(d)) / (2*a);
```

```
            root2 = (-b - Math.sqrt(d)) / (2*a);
```

```
            System.out.println ("Root1=" + root1 + "Root2=" + root2);
```

```
        else if (d == 0) {
```

```
            System.out.println ("Roots are real & equal");
```

```
            root1 = root2 = -b / (2*a);
```

```
}
```

```
else {
```

```
    System.out.println ("Roots are imaginary");
```

```
    } } }
```

Fantastic

Scanned with CamScanner

enter the value of a, b and c respectively:

1

-3

-10

roots are real

root1=5.0 roots=-2.0

## LAB2

```
import java.util.Scanner; class Student{  
    String name;  
    int i,n,usn,grade=0;  
    int marks[]={}; int credits[]={}; double total=0;  
  
    void get_input()  
    {  
        Scanner m= new Scanner(System.in); System.out.println("Enter Student  
Name:");  
        name=m.next();  
        System.out.println("Enter USN of student:"); usn=m.nextInt();  
        System.out.println("Enter number of subjects:"); n=m.nextInt();  
        System.out.println("Enter the credits and marks of subject:"); for(i=0;i<n;i++  
        )  
        {  
            } }  
  
        System.out.println("Enter marks of Credits "+(i+1)+":");  
        credits[i]=m.nextInt();  
        System.out.println("Enter marks of subject"+(i+1)+":");  
        marks[i]=m.nextInt();  
  
        void calculate()  
        { for(i=0;i<n;i++)  
            {  
                if(marks[i]>=90 && marks[i]<=100)  
                    grade=10;  
                else if(marks[i]>=80 && marks[i]<=90)  
                    grade=9;  
                else if(marks[i]>=70 && marks[i]<=80)  
                    grade=8;  
                else if(marks[i]>=60 && marks[i]<=70)
```

```
grade=7;
else if(marks[i]>=50 && marks[i]<=60)

grade=6;
else if(marks[i]>=40 && marks[i]<=50)

grade=5;
else if(marks[i]>=0 && marks[i]<=40)

grade=0; else

System.out.println("invalid"); total=total+(grade*credits[i]);

} total=total/20;

System.out.println("Sgpa="+total); }

void display_output()

{
System.out.println("Name: "+name); System.out.println("usn"+usn);
System.out.println("Sgpa="+total);

}

public static void main(String args[])

{
Student s1=new Student(); s1.get_input(); s1.calculate();
s1.display_output();

} }
```

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16th oct 2020

### Lab week 4

```
import java.util.Scanner;
class Student {
    int i, n, usn, grade = 0;
    int marks[] = new int[5];
    int credits[] = new int[6];
    double float total = 0;
    void get_input() {
        Scanner m = new Scanner(System.in);
        System.out.println("Enter student name : ");
        name = m.next();
        System.out.println("Enter USN student : ");
        usn = m.nextInt();
        System.out.println("Enter no. of subjects : ");
        n = m.nextInt();
        System.out.println("Enter credit & marks of subject");
        for (i=0; i<n; i++) {
            System.out.println("Enter credit " + (i+1) + ":" );
            credits[i] = m.nextInt();
            System.out.println("Enter marks " + (i+1) + ":" );
            marks[i] = m.nextInt();
        }
    }
    void calculate() {
        for (i=0; i<n; i++) {
            if (marks[i] >= 90 && marks[i] <= 100)
```

```
[abduls-MacBook-Pro:java abdulhamid$ java Student
Enter Student Name:
hamid
Enter USN of student:
202
Enter number of subjects:
3
Enter the credits and marks of suject:
Enter marks of Credits 1 :
5
Enter marks of subject1:
89
Enter marks of Credits 2 :
4
Enter marks of subject2:
79
Enter marks of Credits 3 :
5
Enter marks of subject3:
93
Sgpa=6.35
Name: hamid
usn202
Sgpa=6.35
abduls-MacBook-Pro:java abdulhamid$
```

## LAB3

```
import java.util.*; class Book
{
    private String name; private String author; private double price;
    private int num_pages;

    Book() {
        name="xyz"; author="abc"; price= 0.0; num_pages=10;
    }

    void getdata() {
        Scanner sc= new Scanner(System.in);
        System.out.println("enter the name of book"); name =
        sc.nextLine();
        System.out.println("enter the name of author"); author =
        sc.nextLine();
        System.out.println("enter the price of book"); price =
        sc.nextDouble(); System.out.println("enter the number of
        pages"); num_pages = sc.nextInt();

    }

    public String toString() {
        return("Book: "+name+"\nAuthor: "+author+"\nPrice: Rs
        "+price+"\nNo.of pages: "+num_pages);
    }
}

class lab3 {

    public static void main(String ss[]) {
```

```
Scanner xx=new Scanner(System.in);
System.out.println("Enter the no of books:"); int n=xx.nextInt();
Book b[] = new Book[n];
int i;
System.out.println("Enter the book details"); for(i=0;i<n;i++)
{
System.out.println("Book "+(i+1)); b[i]=new Book();
b[i].getdata(); }

System.out.println("Printing book details...."); for(i=0;i<n;i++)
{
System.out.println("Book "+(i+1)); System.out.println(b[i]);
System.out.println("-----");}
```

}}}

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Lab. java

Page No. 20 Date day

```
import java.util.*;  
class Book {  
    private String name;  
    private String author;  
    private double price;  
    private int num_page;  
  
    Book() {  
        name = "xyz";  
        author = "abc";  
        price = 0.0;  
        num_page = 10;  
    }  
  
    void getdata() {  
        Scanner sc = new Scanner (System.in);  
        System.out.println ("Enter name of Book");  
        name = sc.nextLine();  
        System.out.println ("Enter name of Author");  
        author = sc.nextLine();  
        System.out.println ("Enter Price of the Book");  
        price = sc.nextDouble();  
        System.out.println ("Enter number of pages");  
        num_page = sc.nextInt();  
    }  
}
```

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```
Enter the no of books:  
1  
Enter the book details  
Book 1  
enter the name of book  
alchemist  
enter the name of author  
paulo  
enter the price of book  
700  
enter the number of pages  
400  
Printing book details....  
Book 1  
Book: alchemist  
Author: paulo  
Price: Rs 700.0  
No.of pages: 400
```

## LAB4

```
import java.util.*; abstract class Shape  
{  
int a;  
int b;  
abstract void printArea(); }  
class Rectangle extends Shape {  
Rectangle(int x, int y) {  
a=x;  
b=y; }  
void printArea() {  
System.out.println("Area is "+(a*b)); }  
}  
class Triangle extends Shape {  
Triangle(int x, int y) {  
a=x;  
b=y; }  
void printArea()  
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3-D  
{  
System.out.println("Area is "+(a*b*0.5));  
} }
```

```
class Circle extends Shape {  
    Circle(int x) {  
        a=x; }  
    void printArea() {  
        System.out.println("Area is "+(a*a*3.14)); }  
}  
  
class lab5 {  
    public static void main(String ss[]) {  
        int l,b,ba,h,ra;  
        Scanner sc = new Scanner(System.in);  
        System.out.println("enter the length and breadth of rectangle");  
        l= sc.nextInt();  
        b= sc.nextInt();  
        Rectangle r= new Rectangle(l,b);  
        r.printArea();  
  
        System.out.println("enter the base and height of triangle"); ba=  
        sc.nextInt();  
        h= sc.nextInt();  
        Triangle t = new Triangle(ba,h);  
        t.printArea();  
  
        System.out.println("enter the radius of circle"); ra= sc.nextInt();  
        Circle c = new Circle(ra);  
        c.printArea();  
    } }  
  
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3-D
```

```
enter the length and breadth of rectangle
5
5
Area is 25
enter the base and height of triangle
7
3
Area is 10.5
enter the radius of circle
8
Area is 200.96
```

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Lab 4 - java

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import java.util.\*;  
abstract class shape {  
 int a;  
 int b;  
 abstract void printArea();  
}  
class Rectangle extends shape {  
 Rectangle (int x, int y) {  
 a=x;  
 b=y;  
 }  
 void printArea() {  
 System.out.println("Area is "+(a+b));  
 }  
}  
class Triangle extends shape {  
 Triangle (int x, int y) {  
 a=x;  
 b=y;  
 }  
 void printArea() {  
 System.out.println("Area is "+(a+b\*0.5));  
 }  
}  
class Circle extends shape {  
 Circle (int x) {  
 a=x;  
 }  
}

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```
2023-07-11  
void printArea() {  
    System.out.println("Area is " + (a * pi * 3.14));  
}  
  
class lab4 {  
    public static void main(String ssc) {  
        int l, b, ba, h, ra;  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter length & breadth of rectangle");  
        l = sc.nextInt();  
        b = sc.nextInt();  
        Rectangle r = new Rectangle(l, b);  
        r.printArea();  
        System.out.println("Enter Base and height of triangle");  
        ba = sc.nextInt();  
        h = sc.nextInt();  
        Triangle T = new Triangle(ba, h);  
        T.printArea();  
        System.out.println("Enter radius of circle");  
        ra = sc.nextInt();  
        Circle c = new Circle(ra);  
        c.printArea();  
    }  
}
```

## LAB5

```
import java.util.*; import java.lang.Math; class Account
{
    String name;
    int acctno;
    char type; double balance; double dep; boolean cheq;
    void get(char c)
    {
        type = c;
        if(c=='s' || c == 'S') cheq=false;
        else cheq=true;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter your name");
        name = sc.nextLine();
        System.out.println("Enter the account number");
        acctno = sc.nextInt();
        System.out.println("Enter the current available balance in your account");
        balance= sc.nextDouble();
    }
    void putd()
    {
        System.out.println("Account details"); System.out.println("Name: "+name);
        System.out.println("Account number: "+acctno);
        System.out.println("Account type :" +type); System.out.println("balance: "+balance);
    }
    void dep() {
        been updated"); }

    void display() {
    }

    void check() {
```

```
}
```

```
}
```

```
Scanner ss = new Scanner(System.in);
System.out.println("Enter the amount to be deposited");
dep= ss.nextDouble();
balance=balance +dep;
System.out.println("Amount has been deposited and balance has
```

```
System.out.println("Balance amount is "+balance);
```

```
if(cheq==false)
```

```
System.out.println("Cheque book facility is not available"); else
```

```
System.out.println("Cheque book facility is available");
```

```
class Saving extends Account {
```

```
double rate;
```

```
double s_with; int n;
```

```
int ch; double amt; double term; double pr;
```

```
void ci() {
```

```
compounded annually");
```

```
balance is updated"); }
```

```
void with_s() {
```

```
been updated"); } }
```

```
}
```

```
Scanner ss = new Scanner(System.in); System.out.println("Enter principal
deposit amount");
```

```
pr = ss.nextDouble();
```

```
System.out.println("Enter the rate of interest");
```

```
rate = ss.nextDouble();
```

```
System.out.println("Enter the term(years)");
```

```
term = ss.nextDouble();
```

```
System.out.println("Enter the number of times interest in
```

```
n = ss.nextInt();
```

```
amt = pr* Math.pow((1+(rate/100)),(n*term));
```

```
balance+= amt;
System.out.println("Interest is compounded and deposited;

Scanner ss = new Scanner(System.in);
System.out.println("Enter the amount of money to be withdrawn"); s_with
= ss.nextDouble();
if(s_with>balance)
System.out.println("Insufficient balance");
else
{balance= balance - s_with;
System.out.println("Money has been withdrawn and balance has

class Current extends Account {

double c_with; double pen; double min; Current()
{
pen=100;
min=500; }

void with_c() {

Scanner xx = new Scanner(System.in); System.out.println("Enter the
amount to be withdrawn"); c_with= xx.nextDouble();
if(c_with>balance)
{System.out.println("Insufficient funds!");

been updated);}

return;}
else
{balance= balance- c_with;
System.out.println("Amount has been withdrawn and balance has

if(balance<min)

{
System.out.println("Balance is below the minimum threshold.

Service penalty charge = 100/- .");

if(balance<pen)

System.out.println("Due to insufficient funds, penalty charge will be
deducted from account after replenishing. Current balance is "+balance);
```

```
else {
System.out.println("Penalty charge has been deducted from account
balance. Current balance is "+balance);
}
}

class lab6
} }

balance= balance-pen;

{
public static void main(String sss[])
{
int cch, chh;

Scanner sx = new Scanner(System.in); System.out.println("-----
Welcome-----");
System.out.println("Savings account or current account? 1- Savings; 2-
Current"); int ch= sx.nextInt();
if(ch==1)
{
Saving s = new Saving();
s.get('S');
do{
System.out.println("1. Deposit money\n2. Calculate compound
interest\n3.

Withdraw money\n4. Display balance\n5. Cheque book facility\n6. Exit");
System.out.println("Enter your choice");

chh= sx.nextInt(); switch(chh)

{
case 1:
s.dep(); break;
case 2: s.ci(); break;
case 3: s.with_s(); break;
```

```
case 4: s.display(); break;
case 5: s.check(); break;
case 6: break;
default:
System.out.println("Wrong option."); break;
} }while(chh!=6);
}
else if(ch==2)
{
Current cr = new Current();
cr.get('C');
do{
System.out.println("1. Deposit money\n2. Chequebook facility\n3.
Withdraw
money\n4. Display balance\n5. Exit"); cch= sx.nextInt();
switch(cch)
{
case 1:
cr.dep(); break;
case 2: cr.check(); break;
case 3: cr.with_c(); break;
case 4: cr.display(); break;
case 5: break;
default:
System.out.println("Wrong option."); break;
} }while(cch!=5);
}
else System.out.println("Wrong!"); }
```

{

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LABS (BANK)

Page No.  
Date  
day

```

import java.util.*;
import java.lang.Math;
class Account {
    String name;
    int accno;
    char type;
    double balance;
    double dep;
    boolean cheq;
}

void get(char c) {
    type = c;
    if (c == 'S' || c == 's')
        cheq = false;
    else
        cheq = true;
}

Scanner sc = new Scanner(System.in);
System.out.println("Enter your name");
name = sc.nextLine();
System.out.println("Enter Account Number");
accno = sc.nextInt();
System.out.println("Enter current Avail. balance");
balance = sc.nextDouble();
}

void putd() {
    System.out.println("Account details");
    System.out.println("Name: " + name);
}

```

```

System.out.println("Account number: " + accno);
System.out.println("Balance " + balance);
}

void depc() {
    Scanner ss = new Scanner(System.in);
    System.out.println("Enter amount to be deposited.");
    dep = ss.nextDouble();
    balance = balance + dep;
    System.out.println("Amount has been deposited (balance updated)");
}

void display() {
    System.out.println("Balance amount u " + balance);
}

void check() {
    if (cheq == false)
        System.out.println("Cheque book facility is not available");
    else
        System.out.println("Cheque book facility is available");
}

class Saving extends Account {
    double rate;
    double s-with;
    int n;
    int ch;
    double amt;
}

```

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```

Page No. 20
double term;
double pr;
void c() {
    Scanner ss = new Scanner (System.in);
    System.out.println ("Enter Principal deposit amount");
    pr = ss.nextDouble();
    System.out.println ("Enter rate of interest");
    rate = ss.nextDouble();
    System.out.println ("Enter number of time interest
        compounded annually");
    n = ss.nextInt();
    amt = pr * Math.pow ((1 + (rate / 100)), (n));
    balance = amt;
    System.out.println ("Interest, compound and deposited is
        updated");
}
void with_sc() {
    Scanner ss = new Scanner (System.in);
    System.out.println ("Enter money to be withdrawn");
    s_with = ss.nextDouble();
    if (s_with > balance) {
        System.out.println ("Insufficient balance");
    } else
        Fantastic
}

```

```

{ balance = balance - s_with;
System.out.println ("Money has been withdrawn and
    balance has been updated");
}
class current extends Account {
    double c_with;
    double pen;
    double min;
    CurrentC() {
        pen = 100;
        min = 500;
    }
    void withdraw() {
        Scanner xx = new Scanner (System.in);
        System.out.println ("Enter Amount to be withdrawn");
        c_with = xx.nextDouble();
        if (c_with > Balance) {
            System.out.println ("Insufficient funds");
            return;
        } else {
            balance = balance - c_with;
            System.out.println ("Amount has been withdrawn
                and Balance has been updated");
        }
        if (balance < min) {
            System.out.println ("Balance is below min threshold,
                service penalty charge = 100/-");
        }
    }
}

```

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```

System.out.println("Due to insufficient funds, penalty charge will
be deducted from account after replenishing, current
balance is "+ balance);
if (balance < pen) {
System.out.println("Due to insufficient funds, penalty charge
will be deducted from account after
replenishing. current balance is "+ balance);
else {
    balance = balance - pen;
    System.out.println("Penalty charge has been deducted
from balance." + balance);
}
class lab5 {
    public static void main (String args) {
        int ch, chh;
        Scanner sx = new Scanner (System.in);
        System.out.println ("-----Welcome -----");
        System.out.println ("Savings or Current - saving 2-current");
        int ch = sx.nextInt();
        if (ch==1) {
            switch (chh) {
                case 1:
                    s.depo();
                    break;
                case 2:
                    s.i();
                    break;
                case 3:
                    s.withd();
                    break;
            }
        }
    }
}

```

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```

case 4:
    s.display();
    break;
case 5:
    s.check();
    break;
case 6:
    break;
default:
    System.out.println("wrong option");
    break;
}
}
while (ch!=6);
else if (ch==2) {
    Current cr = new Current();
    cr.get('c');
    do {
        System.out.println("1. Deposit money in a chequbook
\n3. withdraw money\n4. Display Balance\n5. Exit");
        ch = sx.nextInt();
        switch (ch) {
            case 1:
                cr.depo();
                break;
            case 2:
                cr.withd();
                break;
            case 3:
                cr.withd();
                break;
            case 4:
                cr.display();
                break;
        }
    }
}

```

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case 4:  
cr.display();  
break;

case 5:  
break;

default:

System.out.println ("Wrong Option.");

break;

} while (ccn!=5);

} else System.out.println ("Wrong!");

y  
y

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```
Savings account or current account? 1- Savings; 2- Current
1
Enter your name
hamid
Enter the account number
420
Enter the current available balance in your account
900000
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Cheque book facility
6. Exit
Enter your choice
2
Enter principal deposit amount
3
Enter the rate of interest
3
Enter the term(years)
3
Enter the number of times interest is compounded annually
3
Interest is compounded and deposited; balance is updated
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Cheque book facility
6. Exit
Enter your choice
3
Enter the amount of money to be withdrawn
700
Money has been withdrawn and balance has been updated
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Cheque book facility
6. Exit
Enter your choice
4
Balance amount is 899303.9143195514
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Cheque book facility
6. Exit
Enter your choice
```

## LAB6

```
package CIE;
import java.util.*;
public class personal {

    public String name; public int sem; public String usn;

    public void read()

    {
        Scanner sc = new Scanner(System.in); System.out.println("Enter the
        name"); name = sc.next(); System.out.println("Enter the semester"); sem
        = sc.nextInt(); System.out.println("Enter the USN");
        usn = sc.next();

    }
    public void display()

    {
        System.out.println("Student details: ");

        System.out.println("Name: "+name+"\nUSN: "+usn+"\nSem: "+sem);
    }

}

package CIE;
import java.util.*;
public class internals extends personal {

    public double cie[];

    public void accept()

    {
        cie= new double[5];

        Scanner sc = new Scanner(System.in); for(int i=0;i<5;i++)

        {
            System.out.println("CIE mark for course "+(i+1)+" : ");
            cie[i]= sc.nextDouble();
        }
    }

}
```

---

```
}
```

```
Scanner sc = new Scanner(System.in); for(int i=0;i<5;i++)
```

```
{
```

```
System.out.println("SEE mark for course "+(i+1)+" : ");
```

```
see[i]= sc.nextDouble(); }
```

```
}
```

```
}
```

```
package SEE;
```

```
import java.util.*;
```

```
import CIE.*;
```

```
public class externals extends personal {
```

```
public double see[];
```

```
public void get()
```

```
{
```

```
see= new double[5];
```

```
import CIE.*; import SEE.*; import java.util.*;
```

```
class Main
```

```
{
```

```
public static void main(String args[])
```

```
{
```

```
Scanner sx = new Scanner(System.in); System.out.println("Enter the  
number of students"); int n= sx.nextInt();
```

```
CIE.internals in[]= new CIE.internals[n]; SEE.externals en[]= new  
SEE.externals[n];
```

```
int i,j;
```

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

```
{
```

```
System.out.println("Student "+(i+1)); in[i] = new CIE.internals();  
en[i] = new SEE.externals(); in[i].read();
```

```
System.out.println("CIE MARKS:"); in[i].accept(); System.out.println("SEE  
MARKS:"); en[i].get();
```

```
System.out.println(); in[i].display(); for(j=0;j<5;j++)
```

```
(en[i].see[j]/2));
```

```
System.out.println("Total Marks for course "+(j+1)+": "+(in[i].cie[j] + })
```

```
} }
```

```
Last login: Fri Nov 20 15:40:02 on ttys000
```

```
The default interactive shell is now zsh.  
To update your account to use zsh, please run 'chsh -s /bin/zsh'.  
For more details, please visit https://support.apple.com/kb/HT208050.
```

```
abduls-MacBook-Pro:~ abdulhamid$ cd Documents/
```

```
abduls-MacBook-Pro:Documents abdulhamid$ cd PACKAGES
```

```
abduls-MacBook-Pro:PACKAGES abdulhamid$ java Main
```

```
Enter the number of students
```

```
3
```

```
Student 1
```

```
Enter the name
```

```
hamid
```

```
Enter the semester
```

```
3
```

```
Enter the USN
```

```
1bm2020
```

```
CIE MARKS:
```

```
CIE mark for course 1 :
```

```
40
```

```
CIE mark for course 2 :
```

```
40
```

```
CIE mark for course 3 :
```

```
40
```

```
CIE mark for course 4 :
```

```
40
```

```
CIE mark for course 5 :
```

```
40
```

```
SEE MARKS:
```

```
SEE mark for course 1 :
```

```
89
```

```
SEE mark for course 2 :
```

```
89
```

```
SEE mark for course 3 :
```

```
89
```

```
SEE mark for course 4 :
```

```
89
```

```
SEE mark for course 5 :
```

```
89
```

```
Student details:
```

```
Name: hamid
```

```
USN: 1bm2020
```

```
Sem: 3
```

```
Total Marks for course 1: 84.5
```

```
Total Marks for course 2: 84.5
```

```
Total Marks for course 3: 84.5
```

```
Total Marks for course 4: 84.5
```

```
Total Marks for course 5: 84.5
```

```
Student 2
```

```
Enter the name
```

```
abd
```

```
Enter the semester
```

```
3
```

```
Enter the USN
```

```
1qg33
```

```
CIE MARKS:
```

```
CIE mark for course 1 :
```

```
34
```

```
CIE mark for course 2 :
```

```
40
```

```
CIE mark for course 3 :
```

```
34
```

```
CIE mark for course 4 :
```

```
40
```

```
CIE mark for course 5 :
```

```
34
```

```
SEE MARKS:
```

```
SEE mark for course 1 :
```

```
90
```

```
SEE mark for course 2 :
```

```
90
```

```
SEE mark for course 3 :
```

```
90
```

```
SEE mark for course 4 :
```

```
90
```

```
SEE mark for course 5 :
```

```
90
```

```
Student details:
```

```
Name: abd
```

```
USN: 1qg33
```

```
Sem: 3
```

```
Total Marks for course 1: 78.5
```

```
Total Marks for course 2: 84.5
```

```
Total Marks for course 3: 77.5
```

```
Total Marks for course 4: 77.5
```

```
Total Marks for course 5: 77.5
```

```
Student 3
```

```
Enter the name
```

```
hamid2
```

```
Enter the semester
```

```
3
```

```
Enter the USN
```

```
1bm2020
```

```
CIE MARKS:
```

```
CIE mark for course 1 :
```

```
34
```

```
CIE mark for course 2 :
```

```
40
```

```
CIE mark for course 3 :
```

```
34
```

```
CIE mark for course 4 :
```

```
40
```

```
CIE mark for course 5 :
```

```
34
```

```
SEE MARKS:
```

```
SEE mark for course 1 :
```

```
90
```

```
SEE mark for course 2 :
```

```
90
```

```
SEE mark for course 3 :
```

```
90
```

```
SEE mark for course 4 :
```

```
90
```

```
SEE mark for course 5 :
```

```
90
```

```
Student details:
```

```
Name: hamid2
```

```
USN: 1bm2020
```

```
Sem: 3
```

```
Total Marks for course 1: 79.0
```

```
Total Marks for course 2: 79.0
```

```
Total Marks for course 3: 48.0
```

```
Total Marks for course 4: 85.0
```

```
Total Marks for course 5: 79.0
```

```
abduls-MacBook-Pro:PACKAGES abdulhamid$ █
```

MOHAMMED ARDUL HANIF  
IBM19CS203  
7-D

## Lab 6

```
Package CIE;  
import java.util.*;  
public class Personal {  
    public String name;  
    public int Sem;  
    public String USN;  
    public void read() {  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter the name");  
        name = sc.nextLine();  
        System.out.println("Enter the Semester");  
        Sem = sc.nextInt();  
        System.out.println("Enter the USN");  
        USN = sc.nextLine();  
    }  
    public void display() {  
        System.out.println("Student details:");  
        System.out.println("Name : " + name + " USN : " + USN +  
                           "\nSem : " + Sem);  
    }  
}
```

```
Package CIE;  
import java.util.*;  
public class Internals extends Personal {  
    public double CIE[];  
    public void accept() {  
    }
```

```
cie = new double[5];  
Scanner sc = new Scanner(System.in);  
for (int i=0; i<5; i++) {  
    System.out.println("CIE marks of " + (i+1) + ":");  
    cie[i] = sc.nextDouble();  
}yy
```

```
Package SEE;  
import java.util.*;  
import CIE.*;  
public class external extends personal{  
    public double see[];  
    public void get(){  
        see = new double[5];  
        Scanner sc = new Scanner(System.in);  
        for (int i=0; i<5; i++) {  
            System.out.println("SEE marks of " + (i+1) + ":");  
            see[i] = sc.nextDouble();  
        }yy
```

```
import CIE.*;  
import SEE.*;  
import java.util.*;  
class Main {
```

Fantastic

```

public static void main (String args[])
{
    Scanner sx = new Scanner (System.in);
    System.out.println ("Enter number of student");
    int n = sx.nextInt();
    CIE.internals in[] = new CIE.internals[n];
    SEE.externals en[] = new SEE.externals[n];
    int i, j;
    for (i=0; i<n; i++) {
        System.out.println ("Student " + (i+1));
        in[i] = new CIE.internals();
        en[i] = new SEE.externals();
        in[i].read();
        System.out.println ("CIE MARKS:");
        in[i].accept();
        System.out.println ("SEE MARKS:");
        en[i].get();
        System.out.println ();
        in[i].display();
    }
    for (j=0; j<n; j++)
        System.out.println ("Total marks for comc = " + (g+i));
    + (in[j].cres) + (en[j].sec[1]/2));
}

```

## LAB7

```
class Colour<c, s>{
    c color;
    s fade;
    Colour(c o,s r){
        this.color = o;
        this.fade=r;
    }
    public void display() {
        System.out.println("the content is: "+this.color+ " and the fade
is:"+this.fade);
    }
}
public class Generic1{
    public static void main(String args[]) {
        Colour<String, Integer>ob1=new Colour<String, Integer>("Orange",
88);
        ob1.display();
        Colour<String, Integer>ob2=new Colour<String, Integer>("Green",
90);
        ob2.display();
    }
}
```

```
abduls-MacBook-Pro:java abdulhamid$ java Generic1
the content is: Orange and the fade is:88
the content is: Green and the fade is:90
abduls-MacBook-Pro:java abdulhamid$ █
```

Mohammed ABDUL Hamid  
1BM19CS202

3-D

### Lab 7 (Generic)

Page No.  
Date

MH

day

20

```
class Colour <C, S> {  
    C color;  
    S fade;  
    colour(C O, S a) {  
        this.color = O;  
        this.fade = a;  
    }  
}
```

```
public void display() {  
    System.out.println("The content is : " + this.color  
        " and Fades : " + this.fade);  
}
```

```
public class Generic {  
    public static void main(String args[]) {  
        colour<String, Integer> ob1 = new colour<String, Integer>  
            ("Orange", 88);  
        ob1.display();  
        colour<String, Integer> ob2 = new colour<String, Integer>  
            ("Green", 90);  
        ob2.display();  
    }  
}
```

Fantastic

## LAB8

```
import java.util.*;
class WrongAge extends Exception
{
    private int a1,b1;
    WrongAge(int a,int b)
    {
        a1=a;
        b1=b;
    }
    public String toString()
    {
        if(a1<0||b1<0)
            return "input age cannot be less than 0";
        else if(a1<=b1)
            return "father age cannot be less than or equal to son age ";
        return "";
    }
}

class Father
{
    int fage,sage;
    Scanner sc=new Scanner(System.in);
    Father() throws WrongAge
    {
        System.out.println("enter the age of father");
        fage=sc.nextInt();
        System.out.println("enter the age of son");
        sage=sc.nextInt();
        if(fage<0||sage<0)
            throw new WrongAge(fage,sage);
    }
}
```

```
}

class Son extends Father
{

    Son() throws WrongAge
    {

        if(sage>=fage)
            throw new WrongAge(fage,sage);
        else
            System.out.println("proper ages have been entered");
    }
}

class Main
{
    public static void main(String args[])
    {

        try
        {
            Son s=new Son();
        }catch(WrongAge e){
            System.out.println("error:"+e);

        }
    }
}
```

```
| error
[abduls-MacBook-Pro:java abdulhamid$ javac Main.java
[abduls-MacBook-Pro:java abdulhamid$ java Main
enter the age of father
23
enter the age of son
2
```



Mohammed ABDUL Hamid Program Main2.java  
IBM1acs202

### 3-D Lab8. (exception)

```
import java.util.*;  
class WrongAge extends Exception {  
    private int a1, b1;  
    WrongAge(int a, int b) {  
        a1 = a;  
        b1 = b;  
    }  
    public String toString() {  
        if (a1 < 0 || b1 < 0) throw new RuntimeException("Input age cannot be less than 0");  
        else if (a1 == b1) return "Input age cannot be less than 0";  
        else if (a1 > b1) return "father's age cannot be less than son's age";  
        else if (a1 < b1) return "son's age cannot be less than father's age";  
    }  
}
```

```
class Father {  
    int fage, sage;  
    Scanner sc = new Scanner(System.in);  
    Father() throws WrongAge {  
        System.out.println("Enter age of father");  
        fage = sc.nextInt();  
        System.out.println("Enter the age of son");  
        sage = sc.nextInt();  
        if (fage < 0 || sage < 0)  
            throw new WrongAge(fage, sage);  
    }  
}
```

class Son extends Father {

Son () throws WrongAge {

if (Sage = fage)

throws new WrongAge (fage, sage);

System.out.println ("Proper age have been entered");

}

else Main2 {

public static void main (String args[]){

try {

Son s=new Son();

} catch (WrongAge e){

System.out.println ("error "+e);

}

}

## LAB9

```
class Thread1 implements Runnable {  
    String name;  
    Thread t;  
    int time;  
    Thread1(String threadname,int time) {  
        name = threadname;  
        this.time=time;  
        t = new Thread(this, name);  
        System.out.println("thread:"+ t);  
        t.start();  
    }  
    public void run() {  
        try {  
            for(int i = 5; i > 0; i--) {  
                System.out.println(name);  
                Thread.sleep(time);  
            }  
        } catch (InterruptedException e) {  
            System.out.println(name + "Interrupted");  
        }  
        System.out.println(name + " exiting.");  
    }  
}  
class threadmain1 {  
    public static void main(String args[]) {  
        Thread1 t1=new Thread1("BMS COLLEGE OF  
ENGINEERING",10000);  
        Thread1 t2=new Thread1("COMPUTER SCIENCE AND  
ENGINEERING",2000);  
    }  
}
```

```

abduls-MACBOOK-PRO:java abdullahmids java Threadmain
thread:Thread[BMS COLLEGE OF ENGINEERING,5,main]
thread:Thread[CSE,5,main]
BMS COLLEGE OF ENGINEERING
CSE
CSE
CSE
CSE
CSE
BMS COLLEGE OF ENGINEERING
CSE exiting.

```

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IBM19CS202

3-D Lab 9 (multithread) Week 11



Class Thread1 implements Runnable {

```

String name;
Thread t;
int time;
    
```

Thread1 (String threadname, int time) {

```

name = threadname;
this.time = time;
t = new Thread (this.name);
System.out.println ("Thread": -t);
t.start();
    
```

}

public void run() {

```

try {
for (int i = 0; i < 5; i++) {
System.out.println (name);
Thread.sleep (time);
}
    
```

}

} catch (InterruptedException e) {

```

System.out.println (name + " Interrupted")
    
```

}

System.out.println (name + " exiting");

}

class Threadmain {

```

public static void main (String args[]) {
Thread t1 = new Thread1 ("BMS college Engg, local");
Thread t2 = new Thread2 ("CSE", 2000);
    
```

}

## LAB10

```
import java.awt.*;
import java.awt.event.*;

class SampleDialog extends Dialog implements ActionListener {
    lab12 bld;
    SampleDialog(Frame parent, String title) {

        super(parent, title, false);
        bld=(lab12)parent;
        setLayout(new FlowLayout());
        setSize(300, 200);
        add(new Label(bld.msg1));
        Button b;
        add(b = new Button("OK"));
        b.addActionListener(this);
    }
    public void actionPerformed(ActionEvent ae) {
        dispose();
    }
}

public class lab12 extends Frame implements ActionListener
{
    TextField num1,num2,result;

    String msg="",msg1="";
    Button divide;
    public lab12()
    {
        setLayout(new FlowLayout());
        Label nnum1=new Label("Num1: ",Label.RIGHT);
        Label nnum2=new Label("Num2: ",Label.RIGHT);
        Label rresult=new Label("Result: ",Label.RIGHT);
        Button b=new Button("divide");

        num1=new TextField(8);
```

```
num2=new TextField(8);
result=new TextField(8);

add(nnum1);
add(num1);
add(nnum2);
add(num2);
divide=(Button)add(b);
add(rresult);
add(result);

num1.addActionListener(this);
num2.addActionListener(this);
divide.addActionListener(this);

addWindowListener(new WindowAdapter()
{
    public void windowClosing(WindowEvent we)
    {
        System.exit(0);
    }
});

public void actionPerformed(ActionEvent ae)
{
    if(ae.getSource()==divide)
    {
        try
        {
            msg(""+Integer.parseInt(num1.getText())/
Integer.parseInt(num2.getText()));
            String c="" +msg;
            result.setText(c);
            msg1="";
        }

        }catch(NumberFormatException e)
        {
            msg1="Entered number is not an integer "+e;
        }
}
```

```

        SampleDialog d = new SampleDialog(this, "Dialog");
        d.setVisible(true);

    }

    catch(ArithmetricException e)
    {
        msg1="number 2 is zero "+e;
        SampleDialog d = new SampleDialog(this, "Dialog");
        d.setVisible(true);

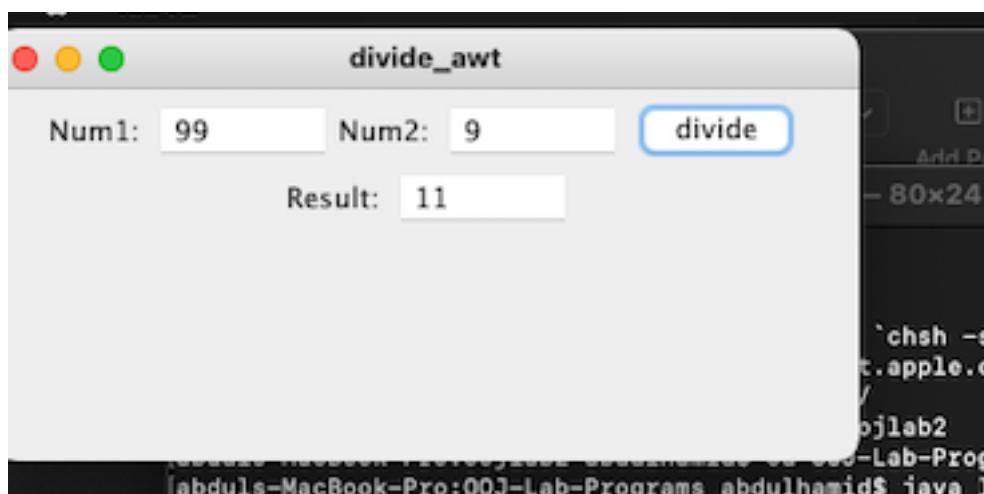
    }
}

}

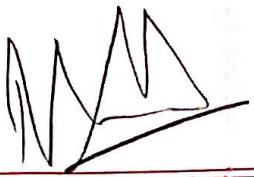
public static void main(String[] args)
{
    lab12 aa=new lab12();
    aa.setSize(new Dimension(400,200));
    aa.setTitle("divide_awt");
    aa.setVisible(true);
}

}

```



MOHAMMED ABDUL HAMID  
13M1acs202  
3-P Lab 10



```
import java.awt.*;  
import java.awt.event.*;  
class SampleDialog extends Dialog implements ActionListener  
{  
    Label bld;  
    SampleDialog(Frame parent, String title){  
        super(parent, title, false);  
        bld = (Label)parent;  
        setLayout(new FlowLayout());  
        setSize(300, 200);  
        add(new Label(bld.msg));  
        Button b;  
        add(b = new Button("OK"));  
        b.addActionListener(this);  
    }  
    public void actionPerformed(ActionEvent ae){  
        dispose();  
    }  
}  
public class lab12 extends Frame implements ActionListener  
{  
    Text Field num1, num2, result;  
    String msg = "", msg1 = "";  
    Button divide;  
    public lab12(){  
        setLayout(new FlowLayout());  
        Label num1 = new Label("Num1:", label, RIGHT);  
        Label num2 = new Label("Num2:", label, RIGHT);  
        Label result = new Label ("Result:", label, RIGHT);  
    }  
}
```



```

Button b = new Button ("divide");
num1 = new JTextField (8);
num2 = new JTextField (8);
add (num1);
add (num1);
add (num2);
add (num2);
divide = (Button) add (b);
add (result);
add (result);
num1.addActionListener (this);
num2.addActionListener (this);
divide.addActionListener (this);
add windowListener (new WindowAdapter () {
    public void windowClosing (WindowEvent we) {
        System.exit (0);
    }
});
    
```

```

public static void main (String [] args) {
    lab12 ad = new lab12 ();
    ad. setSize (new Dimension (400, 200));
    ad. setTitle ("divide_awt");
    ad. setVisible (true);
}
    
```

Fantastic

```
public void actionPerformed (ActionEvent ae) {
```

```
    if (ae.getSource() == divide) {
```

```
        try {
```

```
            msg = "" + Integer.parseInt (num1.getText ()) /
```

```
                Integer.parseInt (num2.getText ());
```

```
            String c = " " + msg +
```

```
            msg2 = " ";
```

```
        } catch (NumberFormatException e)
```

```
        { msg1 = "Entered number is not integer"; }
```

```
        SampleDialog d = new SampleDialog (this, "Dialog");
```

```
        d.setVisible (true);
```

```
}
```

```
}
```

```
}
```







