

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JnanaSangama", Belgaum -590014, Karnataka.



LAB REPORT on

Object Oriented Java Programming (23CS3PCOOJ)

Submitted by

Student Name: Samarth Joshi

USN: (1BF24CS267)

in partial fulfillment for the award of the degree of
BACHELOR OF ENGINEERING
in

B.M.S. COLLEGE OF ENGINEERING

(Autonomous Institution under VTU)

BENGALURU-560019

Aug-2025 to Jan-2026

B.M.S. College of Engineering,
Bull Temple Road, Bangalore 560019
(Affiliated To Visvesvaraya Technological University, Belgaum)
Department of Computer Science and Engineering



CERTIFICATE

This is to certify that the Lab work entitled “Object Oriented Java Programming (23CS3PCOOJ)” carried out by **Student Name: Samarth Joshi (1BF24CS267)**, who is bonafide student of **B.M.S. College of Engineering**. It is in partial fulfilment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum. The Lab report has been approved as it satisfies the academic requirements in respect of an Object-Oriented Java Programming (23CS3PCOOJ) work prescribed for the said degree.

Dr. Seema Patil Associate Professor Department of CSE, BMSCE	Dr. Kavitha Sooda Professor & HOD Department of CSE, BMSCE
--	--

Index

Sl. No.	Date	Experiment Title	Page No.
1	27-09-25	Implement Quadratic Equation	04-05
2	14-10-25	Calculating SGPA	06-09
3	21-10-25	Implementation of toString() method	10-12
4	04-11-25	Demonstration of abstract class	13-14
5	11-11-25	Savings And Current Account using Inheritance	15-19
6	18-11-25	Calculating total marks using packages	20-22
7	25-11-25	Wrong Age Exception	23-24
8	09-12-25	Demonstration of Threads	25

GitHub Link:

https://github.com/samarth1928/1BF24CS267_JAVA

Program 1

Implement Quadratic Equation

```
import java.util.Scanner;
import java.lang.Math;
class quadratic{
public static void main(String args[]){
    int a,b,c;
    double r1,r2;
    Scanner s=new Scanner(System.in);
    System.out.println("Enter values for a,b,c:");
    a=s.nextInt();
    b=s.nextInt();
    c=s.nextInt();
    if(a==0)
    {
        System.out.println("Not a Quadratic Equation");
    }
    int d = b*b-4*a*c;
    if(d==0)
    {
        r1 = r2= (-b)/(2*a);
        System.out.println("Roots are real and equal");
        System.out.println("The roots are:"+r1+"and"+r2);
    }
    else if(d>0){
        r1 = ((-b) + (Math.sqrt(d)))/(double)(2*a);
        r2 = ((-b) - (Math.sqrt(d)))/(double)(2*a);
        System.out.println("The roots are:"+r1+"and"+r2);
    }
    else if(d<0){
        System.out.println("Roots are imaginary");
        r1 = (-b)/(2*a);
        r2 = Math.sqrt(-d)/(2*a);
        System.out.println("The roots are:"+r1+"and"+r2);
    }
    else{
        System.out.println("Invalid");
    }
}
}
```

```
Enter values for a,b,c:
1 2 3
Roots are imaginary
The roots are:-1.0and1.4142135623730951
PS C:\Users\Admin\Desktop\Samarth_18F24CS267> "c:\Users\Admin\Desktop\Samarth_18F24CS267\" ; if ($?) { javac quadratic.java } ; if ($?) { java quadratic }
c:\Users\Admin\Desktop\Samarth_18F24CS267\
Enter values for a,b,c:
-1 2 3
The roots are:-1.0and3.0
PS C:\Users\Admin\Desktop\Samarth_18F24CS267> "c:\Users\Admin\Desktop\Samarth_18F24CS267\" ; if ($?) { javac quadratic.java } ; if ($?) { java quadratic }
c:\Users\Admin\Desktop\Samarth_18F24CS267\
Enter values for a,b,c:
1 -4 4
Roots are real and equal
The roots are:2.0and2.0
PS C:\Users\Admin\Desktop\Samarth_18F24CS267> |
```

➤ Program 2: Calculating SGPA

```
import java.util.Scanner;

class Student{
    String name;
    String USN;
    int n;
    int credit[];
    int marks[];
    double totalcredits;
    double totalpoints;
    int gradepoints;
    double sgpa;

void accept(){
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter Student Name:");
    name=sc.nextLine();
    System.out.println("Enter Student USN:");
    USN=sc.nextLine();

    System.out.println("Enter number of subject: ");
    n=sc.nextInt();

    credit=new int[n];
    marks=new int[n];

    for (int i=0; i<n; i++){
        System.out.println("Enter subject "+(i+1)+" details");
        System.out.println("Enter marks:");
        marks[i]=sc.nextInt();
        sc.nextLine();
        System.out.println("Enter credits for the subject:");
        credit[i]=sc.nextInt();
        sc.nextLine();
    }
}

void display(){
    System.out.println("Student Details ");
    System.out.println("Student Name : "+name);
    System.out.println("Student USN : "+USN);
}

void sgpa(){
    for (int i=0; i<n; i++){
        if (marks[i]>=90){
            gradepoints=10;
        }
        else if(marks[i]>=80 && marks[i]<90){
```

```

        gradepoints=9;
    }
    else if(marks[i]>=70 && marks[i]<80){
        gradepoints=8;
    }
    else if(marks[i]>=60 && marks[i]<70){
        gradepoints=7;
    }
    else if(marks[i]>=50 && marks[i]<60){
        gradepoints=6;
    }
    else if(marks[i]>=40 && marks[i]<50){
        gradepoints=5;
    }
    else{
        gradepoints=4;
    }

    totalpoints+=gradepoints*credit[i];
    totalcredits+=credit[i];
}
sgpa=totalpoints/totalcredits;
System.out.println("The Sgpa of the student is : "+sgpa);
}
}

class demo{
    public static void main(String args[]){
        int m=2;
        Student[] students= new Student[m];
        for(int i=0;i<m;i++){
            System.out.println("Enter "+(i+1)+" student details");
            students[i]=new Student();
            students[i].accept();
        }
        for(int i=0;i<m;i++){
            System.out.println("Details of "+(i+1)+" student");
            students[i].display();
            students[i].sgpa();
        }
    }
}

```

```
C:\Users\samar\OneDrive\Desktop\1BF24CS267_samarth> cmd /C ""C:\Program Files\Eclipse Adoptium\jdk-17.0.16.8-hotspot\bin\java.exe" -XX:+ShowCodeDetailsInExceptionMessages -cp C:\Users\samar\AppData\Roaming\Code\User\workspaceStorage\48edbe55c7536ca3fff025db1de49285\redhat.java\jdt_ws\1BF24CS267_samarth_385b3a51\bin Main "  
Enter 1st student details  
  
Enter student's name:  
samarth  
Enter student's USN:  
1bf24cs267  
Enter number of subjects:  
8  
Enter subject 1 marks:  
80  
Enter subject 1 credits:  
3  
Enter subject 2 marks:  
90  
Enter subject 2 credits:  
3  
Enter subject 3 marks:  
56  
Enter subject 3 credits:  
1  
Enter subject 4 marks:  
87  
Enter subject 4 credits:  
1  
Enter subject 5 marks:  
92  
Enter subject 5 credits:  
1
```

```
Enter subject 3 credits:  
1  
Enter subject 4 marks:  
87  
Enter subject 4 credits:  
1  
Enter subject 5 marks:  
92  
Enter subject 5 credits:  
1  
Enter subject 6 marks:  
86  
Enter subject 6 credits:  
3  
Enter subject 7 marks:  
87  
Enter subject 7 credits:  
4  
Enter subject 8 marks:  
91  
Enter subject 8 credits:  
4
```


Enter 2st student details

Enter student's name:

sai

Enter student's USN:

1bf24cs264

Enter number of subjects:

8

Enter subject 1 marks:

89

Enter subject 1 credits:

3

Enter subject 2 marks:

87

Enter subject 2 credits:

3

Enter subject 3 marks:

77

Enter subject 3 credits:

1

Enter subject 4 marks:

66

Enter subject 4 credits:

1

Enter subject 5 marks:

89

Enter subject 5 credits:

1

Enter subject 6 marks:

86

Enter subject 6 credits:

3

Enter subject 7 marks:

86

Enter subject 7 credits:

4

Enter subject 8 marks:

92

Enter subject 8 credits:

4

Details of 1 student

Name: samarth

USN: 1bf24cs267

Subject 1: Marks = 80, Credits = 3, Grade = 9

Subject 2: Marks = 90, Credits = 3, Grade = 10

Subject 3: Marks = 56, Credits = 1, Grade = 6

Subject 4: Marks = 87, Credits = 1, Grade = 9

Subject 5: Marks = 92, Credits = 1, Grade = 10

Subject 6: Marks = 86, Credits = 3, Grade = 9

Subject 7: Marks = 87, Credits = 4, Grade = 9

Subject 8: Marks = 91, Credits = 4, Grade = 10

SGPA: 9.25

Details of 2 student

Name: sai

USN: 1bf24cs264

Subject 1: Marks = 89, Credits = 3, Grade = 9

Subject 2: Marks = 87, Credits = 3, Grade = 9

Subject 3: Marks = 77, Credits = 1, Grade = 8

Subject 4: Marks = 66, Credits = 1, Grade = 7

Subject 5: Marks = 89, Credits = 1, Grade = 9

Subject 6: Marks = 86, Credits = 3, Grade = 9

Subject 7: Marks = 86, Credits = 4, Grade = 9

Subject 8: Marks = 92, Credits = 4, Grade = 10

SGPA: 9.05

➤ Program 3: Implementation of toString() method

```
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 name, author, price, numpages;

        name = "Book name: " + this.name + "\n";
        author = "Author name: " + this.author + "\n";
        price = "Price: " + this.price + "\n";
        numpages = "Number of pages: " + this.numpages + "\n";

        return name + author + price + numpages;
    }
}

class BookDetails{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n;
        String name;
        String author;
        int price;
        int numpages;

        System.out.println("Number of books to enter: ");
        n=sc.nextInt();
        sc.nextLine();

        books[] b = new books[n];

        for (int i=0; i<n; i++){
            System.out.println("Enter book name: ");
            sc.nextLine();
            name = sc.nextLine();
            System.out.println("Enter author name: ");
            author=sc.nextLine();
            System.out.println("Enter book price: ");
```

```

        price=sc.nextInt();
        System.out.println("Enter total number of pages: ");
        numpages=sc.nextInt();
        b[i]= new books(name,author,price,numpages);
    }

    for (int i=0; i<n; i++){
        String s="Book "+(i+1)+" details are :"+b[i];
        System.out.println(s);
    }
}
}

```

```

C:\Users\samar\OneDrive\Desktop\java> cmd /C ""C:\Program Files\Eclipse Adoptium\jdk-17.0.16.8-hotspot\bin\java.exe" -XX:+ShowCodeDetailsInExceptionMessages -cp C:\Users\samar\AppData\Roaming\Code\User\workspaceStorage\f11146f43cbf54497c694854019b7d96\redhat.java\jdt_ws\java_f9feb9c2\bin BookDetails
"
Number of books to enter:
3
Enter book name:
java
Enter author name:
samarth
Enter book price:
500
Enter total number of pages:
200
Enter book name:
python
Enter author name:
ram
Enter book price:
600
Enter total number of pages:
150
Enter book name:
chemistry
Enter author name:
aditya
Enter book price:
1000

```

```
Enter book name:
chemistry
Enter author name:
aditya
Enter book price:
1000
Enter total number of pages:
400
Book 1 details are :Book name:
Author name: samarth
Price: 500
Number of pages: 200

Book 2 details are :Book name: python
Author name: ram
Price: 600
Number of pages: 150

Book 3 details are :Book name: chemistry
Author name: aditya
Price: 1000
Number of pages: 400

C:\Users\samar\OneDrive\Desktop\java>
```

➤ Program 4: Demonstration of abstract class

```
import java.util.Scanner;
abstract class Shape{
    int l;
    int b;
    Shape(int l,int b){
        this.l=l;
        this.b=b;
    }
    abstract void printArea();
}
class Rectangle extends Shape{
    Rectangle(int l,int b){
        super(l,b);
    }
    void printArea(){
        System.out.println("Area of rectangle:"+l*b);
    }
}
class Circle extends Shape{
    Circle(int r){
        super(r,0);
    }
    void printArea(){
        System.out.println("Area of circle:"+(double)(3.14*l*b));
    }
}
class Triangle extends Shape{
    Triangle(int base,int height){
        super(base,height);
    }
    void printArea(){
        System.out.println("Area of Triangle:"+(double)(0.5*l*b));
    }
}
public class Main{
    public static void main(String[] args){
        int l,b,r,base,height;
        Scanner s=new Scanner(System.in);
        System.out.println("Enter the dimensions of rectangle(length and breadth:");
        l=s.nextInt();
        b=s.nextInt();
        System.out.println("Enter the dimensions of circle(radius:");
        r=s.nextInt();
        System.out.println("Enter the dimensions of triangle(base and height:");
        base=s.nextInt();
        height=s.nextInt();
        Shape ob1=new Rectangle(l,b);
        Shape ob2=new Circle(r);
        Shape ob3=new Triangle(base,height);
        ob1.printArea();
```

```
    ob2.printArea();  
    ob3.printArea();  
}  
}
```

```
PS C:\Users\BMSCECSE\Desktop\samarth> & 'C:\Program Files\Java\jdk-24\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\BMSCECSE\AppData  
\Roaming\Code\User\workspaceStorage\130bda9621ee79dc477b562469255132\redhat.java\jdt_ws\samarth_7cf90a6c\bin' 'Main'  
Enter the dimensions of rectangle(length and breadth):  
2 3  
Enter the dimensions of circle(radius):  
3  
Enter the dimensions of triangle(base and height):  
2 4  
Area of rectangle:6  
Area of circle:28.259999999999998  
Area of Triangle:4.0  
PS C:\Users\BMSCECSE\Desktop\samarth> 
```

➤ Program 5: Savings And Current Account using Inheritance

```
import java.util.Scanner;

class Account {
    String Cname;
    int accno;
    String acctype;
    double balance;

    Account(String cname, int accno, String type, double b) {
        Cname = cname;
        this.accno = accno;
        acctype = type;
        balance = b;
    }

    void deposit(double amount) {
        if (amount > 0) {
            balance += amount;
            System.out.println("Deposited amount: " + amount);
        } else {
            System.out.println("Invalid deposit amount!");
        }
    }

    void withdraw(double amount) {
        if (amount <= 0) {
            System.out.println("Invalid withdrawal amount!");
            return;
        }
        if (amount > balance) {
            System.out.println("Insufficient balance!");
            return;
        }
        balance -= amount;
        System.out.println("Withdrawn amount: " + amount);
    }

    void displayBalance() {
        System.out.println("\n--- Account Details ---");
        System.out.println("Account Holder: " + Cname);
        System.out.println("Account Number: " + accno);
        System.out.println("Account Type: " + acctype);
        System.out.println("Current Balance: Rs." + balance);
    }
}

class Savings extends Account {
    double intrate = 0.05;

    Savings(String name, int accno, double balance) {
```

```

    super(name, accno, "savings", balance);
}

void CI(int years) {
    double interest = balance * Math.pow((1 + intrate), years) - balance;
    balance += interest;
    System.out.println("Interest of Rs " + interest + " added.");
}
}

class Current extends Account {
    double minbalance = 1000;
    double sercharge = 100;

    Current(String name, int accno, double balance) {
        super(name, accno, "current", balance);
    }

    void withdraw(double amount) {
        super.withdraw(amount);
        if (balance < minbalance) {
            balance -= sercharge;
            System.out.println("A service charge of " + sercharge + " has been applied.");
            System.out.println("Balance after service charge: " + balance);
        }
    }
}

class Bank {
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);

        System.out.print("Enter customer name: ");
        String name = s.nextLine();

        System.out.print("Enter account number: ");
        int accno = s.nextInt();
        s.nextLine(); // consume newline

        System.out.print("Enter account type (savings/current): ");
        String type = s.nextLine().toLowerCase();

        System.out.print("Enter initial balance: ");
        double balance = s.nextDouble();

        // Declare both objects here (no null)
        Savings sv = new Savings(name, accno, balance);
        Current ct = new Current(name, accno, balance);

        System.out.println("\nMENU");
        System.out.println("1. Deposit");
        System.out.println("2. Withdraw");
    }
}

```



```

System.out.println("3. Compound Interest");
System.out.println("4. Show Balance");
System.out.println("5. Exit");

int c;
System.out.print("Enter choice: ");
c = s.nextInt();

while (c != 5) {
    switch (c) {
        case 1:
            System.out.print("Enter the deposit amount: ");
            double deposit = s.nextDouble();
            if (type.equals("savings"))
                sv.deposit(deposit);
            else
                ct.deposit(deposit);
            break;

        case 2:
            System.out.print("Enter the withdrawal amount: ");
            double withdraw = s.nextDouble();
            if (type.equals("savings"))
                sv.withdraw(withdraw);
            else
                ct.withdraw(withdraw);
            break;

        case 3:
            if (type.equals("savings")) {
                System.out.print("Enter number of years: ");
                int years = s.nextInt();
                sv.CI(years);
            } else {
                System.out.println("Interest not applicable for current account.");
            }
            break;

        case 4:
            if (type.equals("savings"))
                sv.displayBalance();
            else
                ct.displayBalance();
            break;

        default:
            System.out.println("Invalid choice!");
    }

    System.out.println("\n1. Deposit");
    System.out.println("2. Withdraw");
    System.out.println("3. Compound Interest");
}

```

```
System.out.println("4. Show Balance");
System.out.println("5. Exit");
System.out.print("Enter choice: ");
c = s.nextInt();
```

```
}
```

```
}
```

```
PS C:\Users\Admin\Desktop\samarth> & 'C:\Program Files\Java\jdk-21\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Admin\AppData\Roaming\Code\User\workspaceStorage\1cdcd0c2ecd8a1385baeffaf98149029\redhat.java\jdt_ws\samarth_ec5ce32\bin' 'Bank'
Enter customer name: samarth
Enter account number: 1234
Enter account type (savings/current): savings
Enter initial balance: 3000

MENU
1. Deposit
2. Withdraw
3. Compound Interest
4. Show Balance
5. Exit
Enter choice: 1
Enter the deposit amount: 2000
Deposited amount: 2000.0

1. Deposit
2. Withdraw
3. Compound Interest
4. Show Balance
5. Exit
Enter choice: 2
Enter the withdrawal amount: 1000
Withdrawn amount: 1000.0

1. Deposit
2. Withdraw
3. Compound Interest
4. Show Balance
5. Exit
Enter choice: 3
Enter number of years: 3
Interest of Rs 630.5000000000009 added.
```

Withdrawn amount: 1000.0

1. Deposit
2. Withdraw
3. Compound Interest
4. Show Balance
5. Exit

Enter choice: 3

Enter number of years: 3

Interest of Rs 630.500000000009 added.

1. Deposit
2. Withdraw
3. Compound Interest
4. Show Balance
5. Exit

Enter choice: 4

--- Account Details ---

Account Holder: samarth

Account Number: 1234

Account Type: savings

Current Balance: Rs.4630.500000000001

1. Deposit
2. Withdraw
3. Compound Interest
4. Show Balance
5. Exit

Enter choice: 5

PS C:\Users\Admin\Desktop\samarth>

➤ Program 6: Calculating total marks using packages

```
package CIE;

import java.util.Scanner;

public class student {

    public String name;

    public String USN;

    public int sem;


    public void inputdetails() {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter USN: ");

        USN = sc.nextLine();

        System.out.println("Enter Name: ");

        name = sc.nextLine();

        System.out.println("Enter Semester: ");

        sem = sc.nextInt();

    }


    public void displaydetails() {

        System.out.println("USN: " + USN);

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

        System.out.println("Semester: " + sem);

    }

}
```

```

package CIE;
import java.util.Scanner;

public class internals extends student {
    public int internalmarks[] = new int[5];

    public void CIEmarks() {
        Scanner sc = new Scanner(System.in);
        for (int i = 0; i < 5; i++) {
            System.out.println("Enter internal marks for subject " + (i+1));
            internalmarks[i] = sc.nextInt();
        }
    }
}

```

```

package SEE;

import java.util.Scanner;

import Cie.internals;

public class externals extends internals {
    public int marks[] = new int[5];
    public int finalmarks[] = new int[5];

    public void SEEmarks() {
        Scanner sc = new Scanner(System.in);
        for (int i = 0; i < 5; i++) {
            System.out.println("Enter SEE marks for subject " + (i+1));
            marks[i] = sc.nextInt();
        }
    }

    public void Totalmarks() {
        for (int i = 0; i < 5; i++) {
            finalmarks[i] = (int)(marks[i] / 2.0) + internalmarks[i];
        }
    }
}

```

```

import SEE.externals;
import java.util.Scanner;

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

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter number of students: ");
        int n = sc.nextInt();

        externals see[] = new externals[n];
    }
}

```

```

for (int i = 0; i < n; i++) {
    System.out.println("Enter details for Student " + (i+1));

    see[i] = new externals();

    see[i].inputdetails();
    see[i].CIEmarks();
    see[i].SEEmarks();
    see[i].Totalmarks();
}

System.out.println("Final marks of students:");

for (int i = 0; i < n; i++) {
    System.out.println("Student " + (i+1));
    see[i].displaydetails();

    System.out.println("Final marks:");
    for (int j = 0; j < 5; j++) {
        System.out.println("Subject " + (j+1) + ": " + see[i].finalmarks[j]);
    }
}
}
}
}

```

```

PS C:\Users\Admin\Desktop\1BF24CS267> & 'C:\Program Files\Java\jdk-21\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Admin\AppData\Roaming\Code\User\workspaceStorage\9b141efd734b0eaf3977baf1b821ea6f\redhat.java\jdt_ws\1BF24CS267_37831afe\bin' 'Final'
Enter number of students:
1
Enter details for Student 1
Enter USN:
1234
Enter Name:
sam
Enter Semester:
3
Enter internal marks for subject 1
35
Enter internal marks for subject 2
38
Enter internal marks for subject 3
37
Enter internal marks for subject 4
39
Enter internal marks for subject 5
38
Enter SEE marks for subject 1
90
Enter SEE marks for subject 2
98
Enter SEE marks for subject 3
70
Enter SEE marks for subject 4
80
Enter SEE marks for subject 5
65
Final marks of students
Student 1
USN: 1234
Name: sam
Semester: 3
Final marks:
Subject 1: 80
Subject 2: 87
Subject 3: 72
Subject 4: 79
Subject 5: 70
PS C:\Users\Admin\Desktop\1BF24CS267>

```

Program 7: Wrong Age Exception

```
import java.util.Scanner;

class WrongAge extends Exception{
    public WrongAge(String msg){
        super(msg);
    }
}

class Father{
    int fage;
    Father(int fage) throws WrongAge{
        this.fage=fage;
        if(fage< 0) {
            throw new WrongAge("Age cannot be negative");
        }
    }
}

class Son extends Father {
    int sage;

    Son(int fage, int sage) throws WrongAge {
        super(fage);
        this.sage=sage;

        if (sage < 0) {
            throw new WrongAge("Age cannot be negative");
        }
        if (sage >= fage) {
            throw new WrongAge("Son's age cannot be greater than father's age");
        }
    }

    void display1() {
        System.out.println("Father's Age: " + fage);
        System.out.println("Son's Age: " + sage);
    }
}

public class age{
    public static void main(String[] args){
        try{
            Scanner s = new Scanner(System.in);
            System.out.println("Enter Father's age:");
            int fage=s.nextInt();
            System.out.print("Enter Son Age: ");
            int sage = s.nextInt();
            Son ob=new Son(fage,sage);
            ob.display1();
        }
    }
}
```

```

    catch(WrongAge e){
        System.out.println("error:"+e);
    }
}
}

```

```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\Admin\Desktop\sam> cd "c:\Users\Admin\Desktop\sam\" ; if ($?) { javac age.java } ; if ($?) { java age
}
Enter Father's age:
30
Enter Son Age: 10
Father's Age: 30
Son's Age: 10
PS C:\Users\Admin\Desktop\sam> cd "c:\Users\Admin\Desktop\sam\" ; if ($?) { javac age.java } ; if ($?) { java age
}
Enter Father's age:
-10
Enter Son Age: 20
error:WrongAge: Age cannot be negative
PS C:\Users\Admin\Desktop\sam> cd "c:\Users\Admin\Desktop\sam\" ; if ($?) { javac age.java } ; if ($?) { java age
}
Enter Father's age:
30
Enter Son Age: 35
error:WrongAge: Son's age cannot be greater than father's age
PS C:\Users\Admin\Desktop\sam>

```

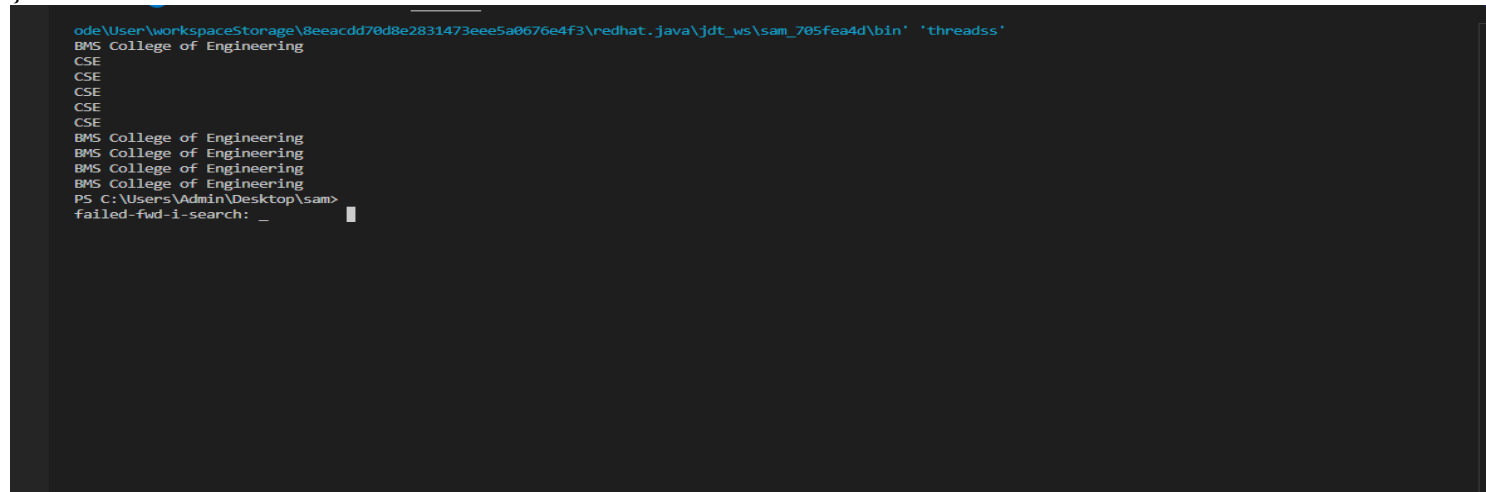

Program 8: Demonstration of Threads

```
class test extends Thread {
    public void run() {
        try {
            for(int i=0;i<5;i++){
                System.out.println("BMS College of Engineering");
                Thread.sleep(10000); // 10 seconds
            }
        } catch (InterruptedException e) {
            System.out.println("CollegeThread interrupted");
        }
    }
}
```

```
class demo extends Thread {
    public void run() {
        try {
            for(int i=0;i<5;i++){
                System.out.println("CSE");
                Thread.sleep(2000); // 2 seconds
            }
        } catch (InterruptedException e) {
            System.out.println("CSEThread interrupted");
        }
    }
}
```

```
public class threadss {
    public static void main(String[] args) {
        test t1 = new test();
        demo t2 = new demo();

        t1.start();
        t2.start();
    }
}
```



```
ode\User\workspaceStorage\8eeacdd70d8e2831473eee5a0676e4f3\redhat.java\jdt_ws\sam_705fea4d\bin' 'threadss'
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
BMS College of Engineering
BMS College of Engineering
BMS College of Engineering
PS C:\Users\Admin\Desktop\sam>
failed-fwd-1-search: _
```