

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
“JnanaSangama”, Belgaum -590014, Karnataka.



LAB REPORT
on
Object Oriented Java Programming
(23CS3PCOOJ)

Submitted by

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in partial fulfillment for the award of the degree of
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Department of Computer Science and Engineering



CERTIFICATE

This is to certify that the Lab work entitled “Object Oriented Java Programming (23CS3PCOOJ)” carried out by **Rohan Raghu Prasad (1BF24CS255)**, who is a 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.

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Github Link:

<https://github.com/rohanraghuprasad/JAVA-1BF24CS255>

Program 1

Implement Quadratic Equation

Code:

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

Output:

```
Enter a, b and c coefficients
0
2
3
Not a quadratic equation
PS C:\Users\Admin\Desktop\1BF24CS255> cd "c:\Users\Admin\Desktop\1BF24CS255\" ; if ($?) { javac quadratic.java } ; if (?) { java quadratic }
0
0
Roots are real and equal
r1=r2=0.0
PS C:\Users\Admin\Desktop\1BF24CS255> cd "c:\Users\Admin\Desktop\1BF24CS255\" ; if ($?) { javac quadratic.java } ; if (?) { java quadratic }
1
4
2
Roots are distinct
r1=-0.5857864376269049
r2=-3.414213562373095
PS C:\Users\Admin\Desktop\1BF24CS255> cd "c:\Users\Admin\Desktop\1BF24CS255\" ; if ($?) { javac quadratic.java } ; if (?) { java quadratic }
Enter a, b and c coefficients
1
2
3
Roots are imaginary
r1=-1.0
r2=1.4142135623730951
PS C:\Users\Admin\Desktop\1BF24CS255> cd "c:\Users\Admin\Desktop\1BF24CS255\" ; if ($?) { javac quadratic.java } ; if (?) { java quadratic }
Enter a, b and c coefficients
1
0
0
Roots are real and equal
r1=r2=0.0
PS C:\Users\Admin\Desktop\1BF24CS255>
```

Program 2

Calculating SGPA of a student

Code:

```
import java.util.Scanner;

class Subject {
    int subjectMarks, credits, grade;
}

class Student {
    String name, usn;
    double SGPA;
    Scanner sc = new Scanner(System.in);
    Subject[] subject;

    Student() {
        subject = new Subject[8];
        for (int i = 0; i < 8; i++) {
            subject[i] = new Subject();
        }
    }

    void getStudentDetails() {
        System.out.print("Enter name: ");
        name = sc.nextLine();
        System.out.print("Enter USN: ");
        usn = sc.nextLine();
    }

    void getMarks() {
        for (int i = 0; i < 8; i++) {
            System.out.print("Enter Marks for Subject " + (i + 1) + ": ");
            subject[i].subjectMarks = sc.nextInt();
            System.out.print("Enter Credits for Subject " + (i + 1) + ": ");
            subject[i].credits = sc.nextInt();

            subject[i].grade = (subject[i].subjectMarks / 10) + 1;
            if (subject[i].grade == 11)
                subject[i].grade = 10;
            if (subject[i].grade <= 4)
                subject[i].grade = 0;
        }
        sc.nextLine(); // consume leftover newline
    }
}
```

```

void calculateSGPA() {
    int effectiveScore = 0, totalCredits = 0;
    for (int i = 0; i < 8; i++) {
        effectiveScore += (subject[i].grade * subject[i].credits);
        totalCredits += subject[i].credits;
    }
    SGPA = (double) effectiveScore / (double) totalCredits;
}

void displayStudentInfo() {
    System.out.println("\nStudent Details:");
    System.out.println("Name: " + name);
    System.out.println("USN: " + usn);
    System.out.println("SGPA: " + SGPA);
}
}

public class Program2
{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Student[] students = new Student[2]; // for 2 students

        for (int i = 0; i < 2; i++) {
            System.out.println("\nEnter details for Student " + (i + 1) + ": ");
            students[i] = new Student();
            students[i].getStudentDetails();
            students[i].getMarks();
            students[i].calculateSGPA();
            System.out.println("Results: ");
            students[i].displayStudentInfo();
        }
    }
}

```

Output:

```
PS C:\Users\Admin\Desktop\1BF24CS255> cd "c:\Users\Admin\Desktop\1BF24CS255\" ; if ($?) { javac Main.java } ; if ($?) { java Main }

Enter details for Student 1:
Enter name: ABC
Enter USN: 123ABC
Enter Marks for Subject 1: 90
Enter Credits for Subject 1: 4
Enter Marks for Subject 2: 87
Enter Credits for Subject 2: 4
Enter Marks for Subject 3: 81
Enter Credits for Subject 3: 3
Enter Marks for Subject 4: 78
Enter Credits for Subject 4: 3
Enter Marks for Subject 5: 90
Enter Credits for Subject 5: 2
Enter Marks for Subject 6: 91
Enter Credits for Subject 6: 2
Enter Marks for Subject 7: 94
Enter Credits for Subject 7: 1
Enter Marks for Subject 8: 89
Enter Credits for Subject 8: 1
Results:

Student Details:
Name: ABC
USN: 123ABC
SGPA: 9.3
```

```
Enter details for Student 2:
Enter name: DEF
Enter USN: 123DEF
Enter Marks for Subject 1: 81
Enter Credits for Subject 1: 4
Enter Marks for Subject 2: 78
Enter Credits for Subject 2: 4
Enter Marks for Subject 3: 57
Enter Credits for Subject 3: 3
Enter Marks for Subject 4: 67
Enter Credits for Subject 4: 3
Enter Marks for Subject 5: 86
Enter Credits for Subject 5: 2
Enter Marks for Subject 6: 80
Enter Credits for Subject 6: 2
Enter Marks for Subject 7: 74
Enter Credits for Subject 7: 1
Enter Marks for Subject 8: 90
Enter Credits for Subject 8: 1
Results:

Student Details:
Name: DEF
USN: 123DEF
SGPA: 8.05
PS C:\Users\Admin\Desktop\1BF24CS255> []
```

Program 3

Using the `toString()` method

Code:

```
import java.util.Scanner;

class Books {
    String name, author;
    int price, numPages;

    Books(String n, String a, int p, int numPages) {
        this.name = n;
        this.author = a;
        this.price = p;
        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;
    }

    public static void main(String args[]) {
        int n;
        String name, author;
        int price, numPages;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter no of books: ");
        n = sc.nextInt();
        sc.nextLine();
        Books b[] = new Books[n];
        for (int i = 0; i < n; i++) {
            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: ");
            price = sc.nextInt();
        }
    }
}
```

```

        System.out.println("Enter number of pages: ");
        numPages = sc.nextInt();

        sc.nextLine();

        b[i] = new Books(name, author, price, numPages);
    }

    for (int i = 0; i < n; i++) {
        System.out.println("Details for book " + (i + 1) + ": ");
        System.out.println(b[i]);
    }

}
}

```

Output:

```

PS C:\Users\Admin\Desktop\1BF24CS255> cd "c:\Users\Admin\Desktop\1BF24CS255\" ; if ($?) { javac Books.java } ; if ($?) { java Books }

Enter no of books:
2
Enter name of book:
abc
Enter name of author:
def
Enter price:
34
Enter number of pages:
45
Enter name of book:
xyz
Enter name of author:
pqr
Enter price:
32
Enter number of pages:
23
Details for book 1:
Book name: abc
Author name: def
Price: 34
Number of pages: 45

Details for book 2:
Book name: xyz
Author name: pqr
Price: 32
Number of pages: 23

PS C:\Users\Admin\Desktop\1BF24CS255> []

```

Program 4

Using Abstract Class

Code:

```
import java.util.Scanner;
class InputScanner
{
    Scanner sc=new Scanner(System.in);
}
abstract class Shape extends InputScanner
{
    int dim1, dim2;
    abstract void printArea();
}
class Rectangle extends Shape
{
    void printArea()
    {
        System.out.println("Enter length of rectangle: ");
        dim1=sc.nextInt();
        System.out.println("Enter breadth of rectangle: ");
        dim2=sc.nextInt();
        double a=dim1*dim2;
        System.out.println("Area of rectangle: "+ a);
    }
}
class Triangle extends Shape
{
    void printArea()
    {
        System.out.println("Enter base of triangle: ");
        dim1=sc.nextInt();
        System.out.println("Enter height of triangle: ");
        dim2=sc.nextInt();
        double a=0.5*dim1*dim2;
        System.out.println("Area of triangle: "+ a);
    }
}
class Circle extends Shape
{
    void printArea()
    {
        System.out.println("Enter radius of circle: ");
        dim1=sc.nextInt();
        double a=Math.PI*dim1*dim1;
        System.out.println("Area of circle: "+a);
    }
}
```

```
        }
    }

public class program4
{
    public static void main(String [] args)
    {
        Rectangle ob1=new Rectangle();
        ob1.printArea();
        System.out.println();
        Triangle ob2=new Triangle();
        ob2.printArea();
        System.out.println();
        Circle ob3=new Circle();
        ob3.printArea();
        System.out.println();
    }
}
```

Output:

```
PS C:\Users\student\Desktop\1BF24CS255> cd "c:\Users\student\Desktop\1BF24CS255\" ; if ($?) { javac classMain.java } ; if ($?) { java classMain }

Enter length of rectangle:
4
Enter breadth of rectangle:
2
Area of rectangle: 8.0

Enter base of triangle:
6
Enter height of triangle:
7
Area of triangle: 21.0

Enter radius of circle:
5
Area of circle: 78.53981633974483

PS C:\Users\student\Desktop\1BF24CS255>
```

Program 5

Implementing Inheritance

Code:

```
import java.util.Scanner;

class Account
{
    String customerName;
    String accountNumber;
    String accountType;
    double balance;

    Account(String c, String aN, String aT, double b) {
        this.customerName = c;
        this.accountNumber = aN;
        this.accountType = aT;
        this.balance = b;
    }

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

    void displayBalance() {
        System.out.println("Current Balance: Rs. " + balance);
    }
}

class Saving extends Account
{
    double INTEREST_RATE = 0.05;

    Saving(String customerName, String accountNumber, double initialBalance)
    {
        super(customerName, accountNumber, "Savings", initialBalance);
    }
}
```

```

void computeAndDepositInterest(int years) {
    double interest = balance * Math.pow((1 + INTEREST_RATE), years) - balance;
    balance += interest;
    System.out.println("Interest of Rs. " + String.format("%.2f", interest) + " added to your
account.");
}
void withdraw(double amount)
{
    if (amount <= balance)
    {
        balance -= amount;
        System.out.println("Withdrawn:" + amount);
    } else
    {
        System.out.println("Insufficient balance!");
    }
}
}

class Current extends Account {
    double MIN_BALANCE = 1000.0;
    double SERVICE_CHARGE = 50.0;

    public Current(String customerName, String accountNumber, double initialBalance)
    {
        super(customerName, accountNumber, "Current", initialBalance);
    }

    void withdraw(double amount) {
        if (amount <= balance) {
            balance -= amount;
            System.out.println("Withdrawn: Rs. " + amount);
            checkMinimumBalance();
        } else {
            System.out.println("Insufficient balance!");
        }
    }

    void checkMinimumBalance() {
        if (balance < MIN_BALANCE) {
            balance -= SERVICE_CHARGE;
            System.out.println("Balance below minimum! Service charge of Rs." +
SERVICE_CHARGE + " imposed.");
        }
    }
}

```

```

public class program5 {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);

        System.out.println("Enter Customer Name:");
        String name = in.nextLine();

        System.out.println("Enter Account Number:");
        String accNo = in.nextLine();

        System.out.println("Enter Account Type (savings/current):");
        String type = in.nextLine().toLowerCase();

        System.out.println("Enter Initial Balance:");
        double balance = in.nextDouble();

        Account account;

        if (type.equals("savings"))
        {
            account = new Saving(name, accNo, balance);
        }
        else
        {
            account = new Current(name, accNo, balance);
        }

        int choice;
        do {
            System.out.println("\nOptions Available");
            System.out.println("1. Deposit");
            System.out.println("2. Withdraw");
            System.out.println("3. Display Balance");
            if (account instanceof Saving)
                System.out.println("4. Compute and Deposit Interest");
            System.out.println("5 . Exit");
            System.out.print("Enter choice: ");
            choice = in.nextInt();

            switch (choice) {
                case 1:
                    System.out.print("Enter amount to deposit: ");
                    double depositAmount = in.nextDouble();
                    account.deposit(depositAmount);
                    break;
            }
        }
    }
}

```

```

case 2:
    System.out.print("Enter amount to withdraw: ");
    double withdrawAmount = in.nextDouble();
    if (account instanceof Saving) {
        ((Saving) account).withdraw(withdrawAmount);
    } else {
        ((Current) account).withdraw(withdrawAmount);
    }
    break;

case 3:
    account.displayBalance();
    break;

case 4:
    if (account instanceof Saving) {
        System.out.print("Enter number of years for interest: ");
        int years = in.nextInt();
        ((Saving) account).computeAndDepositInterest(years);
    } else {
        System.out.println("Interest computation not available for Current Account.");
    }
    break;

case 5:
    System.out.println("Exiting Program ");
    System.exit(0);

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

} while (choice != 0);

in.close();
}
}

```

Output:

Savings:

```
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255\" ; if ($?) { javac program5.java } ; if ($?) { java program5 }

Enter Customer Name:
ABC
Enter Account Number:
123ABC
Enter Account Type (savings/current):
savings
Enter Initial Balance:
10000

Options Available
1. Deposit
2. Withdraw
3. Display Balance
4. Compute and Deposit Interest
5 . Exit
Enter choice: 1
Enter amount to deposit: 2000
Deposited: 2000.0

Options Available
1. Deposit
2. Withdraw
3. Display Balance
4. Compute and Deposit Interest
5 . Exit
Enter choice: 3
Current Balance: Rs. 12000.0

Options Available
1. Deposit
2. Withdraw
3. Display Balance
4. Compute and Deposit Interest
5 . Exit
Enter choice: 2
Enter amount to withdraw: 1500
Withdrawn:1500.0

Options Available
1. Deposit
2. Withdraw
3. Display Balance
4. Compute and Deposit Interest
5 . Exit
Enter choice: 3
Current Balance: Rs. 10500.0
```

```
Options Available
1. Deposit
2. Withdraw
3. Display Balance
4. Compute and Deposit Interest
5 . Exit
Enter choice: 4
Enter number of years for interest: 3
Interest of Rs. 1655.06 added to your account.

Options Available
1. Deposit
2. Withdraw
3. Display Balance
4. Compute and Deposit Interest
5 . Exit
Enter choice: 5
Exiting Program
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255>
```

Current:

```
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255\" ; if ($?) { javac program5.java } ; if ($?) { java program5 }

Enter Customer Name:
ABC
Enter Account Number:
123ABC
Enter Account Type (savings/current):
current
Enter Initial Balance:
10000

Options Available
1. Deposit
2. Withdraw
3. Display Balance
5 . Exit
Enter choice: 1
Enter amount to deposit: 200
Deposited: 200.0

Options Available
1. Deposit
2. Withdraw
3. Display Balance
5 . Exit
Enter choice: 2
Enter amount to withdraw: 2000
Withdrawn: Rs. 2000.0

Options Available
1. Deposit
2. Withdraw
3. Display Balance
5 . Exit
Enter choice: 3
Current Balance: Rs. 8200.0

Options Available
1. Deposit
2. Withdraw
3. Display Balance
5 . Exit
Enter choice: 2
Enter amount to withdraw: 300000
Insufficient balance!

Options Available
1. Deposit
2. Withdraw
3. Display Balance
5 . Exit
Enter choice: 5
Exiting Program
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255>
```

Program 6

Using Package

Code:

Package: CIE

package CIE;

import java.util.Scanner;

public class Internals extends Student{

 public int marksin[] = new int[5];

 public void CIEMarks(){

 Scanner scnr=new Scanner(System.in);

 int i;

 System.out.println("Enter CIE marks:");

 for(i=0;i<5;i++){

 System.out.print("Enter marks for subject "+(i+1)+": ");

 marksin[i]=scnr.nextInt();

 scnr.nextLine();

 }

 }

}

package CIE;

import java.util.Scanner;

public class Student {

 public String usn = new String();

 public String name = new String();

 public int sem;

 Scanner scnr=new Scanner(System.in);

 public void inputDetails(){

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

 usn=scnr.nextLine();

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

 name=scnr.nextLine();

 System.out.print("Enter Sem: ");

 sem=scnr.nextInt();

 scnr.nextLine();

 }

 public void Details(){

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

 System.out.println("Usn: "+usn);

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

 }

```

}

Package: SEE
package SEE;

import CIE.Internals;
import java.util.Scanner;

public class External extends Internals{
    int i=0;
    public int marks[] = new int[5];
    public int finalMarks[] = new int[5];
    public void SEEmarks(){
        Scanner scnr=new Scanner(System.in);
        System.out.println("Enter SEE marks:");
        for(i=0;i<5;i++){
            System.out.print("Enter marks for subject "+(i+1)+": ");
            marks[i]=scnr.nextInt();
            scnr.nextLine();
        }
    }
    public void Final_marks(External in){
        System.out.println("Final marks:");
        for(i=0;i<5;i++){
            finalMarks[i]=marks[i]+in.marksin[i];
        }
        for(i=0;i<5;i++){
            System.out.println("Marks for subject"+(i+1)+": "+finalMarks[i]);
        }
    }
}

```

Main:

```

import SEE.External;

class program6{
    public static void main(String args[]){
        External e=new External();
        e.inputDetails();
        e.CIEmarks();
        e.SEEmarks();
        e.Details();
        e.Final_marks(e);
    }
}

```

Output:

```
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255\Program6\" ; if ($?) { javac program6.java } ; if ($?) { java program6 }
Enter USN: 1BF24CS255
Enter Name: Rohan
Enter Sem: 1
Enter CIE marks:
Enter marks for subject 1: 47
Enter marks for subject 2: 42
Enter marks for subject 3: 45
Enter marks for subject 4: 49
Enter marks for subject 5: 46
Enter SEE marks:
Enter marks for subject 1: 44
Enter marks for subject 2: 42
Enter marks for subject 3: 49
Enter marks for subject 4: 47
Enter marks for subject 5: 43
Name: Rohan
Usn: 1BF24CS255
Sem: 1
Final marks:
Marks for subject1: 91
Marks for subject2: 84
Marks for subject3: 94
Marks for subject4: 96
Marks for subjects: 89
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255\Program6>
```

Program 7

Implementing User Defined Exception

Code:

```
import java.util.Scanner;

class WrongAge extends Exception{
    public WrongAge(int i){
        if(i==1){
            System.out.println("Age cannot be negative or zero.");
        }
        else if(i==2){
            System.out.println("Father's age cannot be less than son's age.");
        }
        else if(i==3){
            System.out.println("Son's age cannot be that close to father's.");
        }
    }
}

class Father{
    int fatherAge;
    Scanner sc=new Scanner(System.in);
    Father() throws WrongAge{
        System.out.print("Enter father's age: ");
        fatherAge=sc.nextInt();
        sc.nextLine();

        if(fatherAge<=0){
            throw new WrongAge(1);
        }
    }
    void display(){
        System.out.println("Father's age: "+fatherAge);
    }
}

class Son extends Father{
    int sonAge;

    Son() throws WrongAge{
        System.out.print("Enter son's age: ");
        sonAge=sc.nextInt();
        sc.nextLine();
    }
}
```

```

        if(sonAge<=0){
            throw new WrongAge(1);
        }
        else if(sonAge>=fatherAge){
            throw new WrongAge(2);
        }
        int gap=fatherAge-sonAge;
        if(gap<18){
            throw new WrongAge(3);
        }
    }
    void display(){
        System.out.println("Son's age: "+sonAge);
        super.display();
    }
}

```

```

public class program7 {
    public static void main(String[] args) {
        try{
            Son s=new Son();
            System.out.println("Valid ages.");
            s.display();
        }
        catch(WrongAge e){
            System.out.println(e.getMessage());
        }
    }
}

```

Output:

```

PS C:\Users\Admin> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255" ; if ($?) { javac program7.java } ; if ($?) { java program7 }
Enter father's age: 0
Age cannot be negative or zero.
null
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255" ; if ($?) { javac program7.java } ; if ($?) { java program7 }
Enter father's age: 44
Enter son's age: 0
Age cannot be negative or zero.
null
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255" ; if ($?) { javac program7.java } ; if ($?) { java program7 }
Enter father's age: 44
Enter son's age: 45
Father's age cannot be less than son's age.
null
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255" ; if ($?) { javac program7.java } ; if ($?) { java program7 }
Enter father's age: 44
Enter son's age: 43
Son's age cannot be that close to father's.
null
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255" ; if ($?) { javac program7.java } ; if ($?) { java program7 }
Enter father's age: 44
Enter son's age: 20
Valid ages.
Son's age: 20
Father's age: 44
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255>

```

Program 8

Multithreading

Code:

```
class FirstThread extends Thread {  
    public void run() {  
        try {  
            while (true) {  
                System.out.println("BMS College of Engineering");  
                Thread.sleep(10000);  
            }  
        } catch (InterruptedException e) {  
            System.out.println("FirstThread interrupted");  
        }  
    }  
  
    class SecondThread extends Thread {  
        public void run() {  
            try {  
                while (true) {  
                    System.out.println("CSE");  
                    Thread.sleep(2000);  
                }  
            } catch (InterruptedException e) {  
                System.out.println("SecondThread interrupted");  
            }  
        }  
    }  
  
    public class Program8 {  
        public static void main(String[] args) {  
            FirstThread ob1=new FirstThread();  
            SecondThread ob2=new SecondThread();  
  
            ob1.start();  
            ob2.start();  
        }  
    }  
}
```

Output:

```
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255> cd "c:\Users\Admin\Desktop\JAVA -1BF24CS255\" ; if ($?) { javac Program8.java } ; if ($?) { java Program8 }

BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
PS C:\Users\Admin\Desktop\JAVA -1BF24CS255>
```