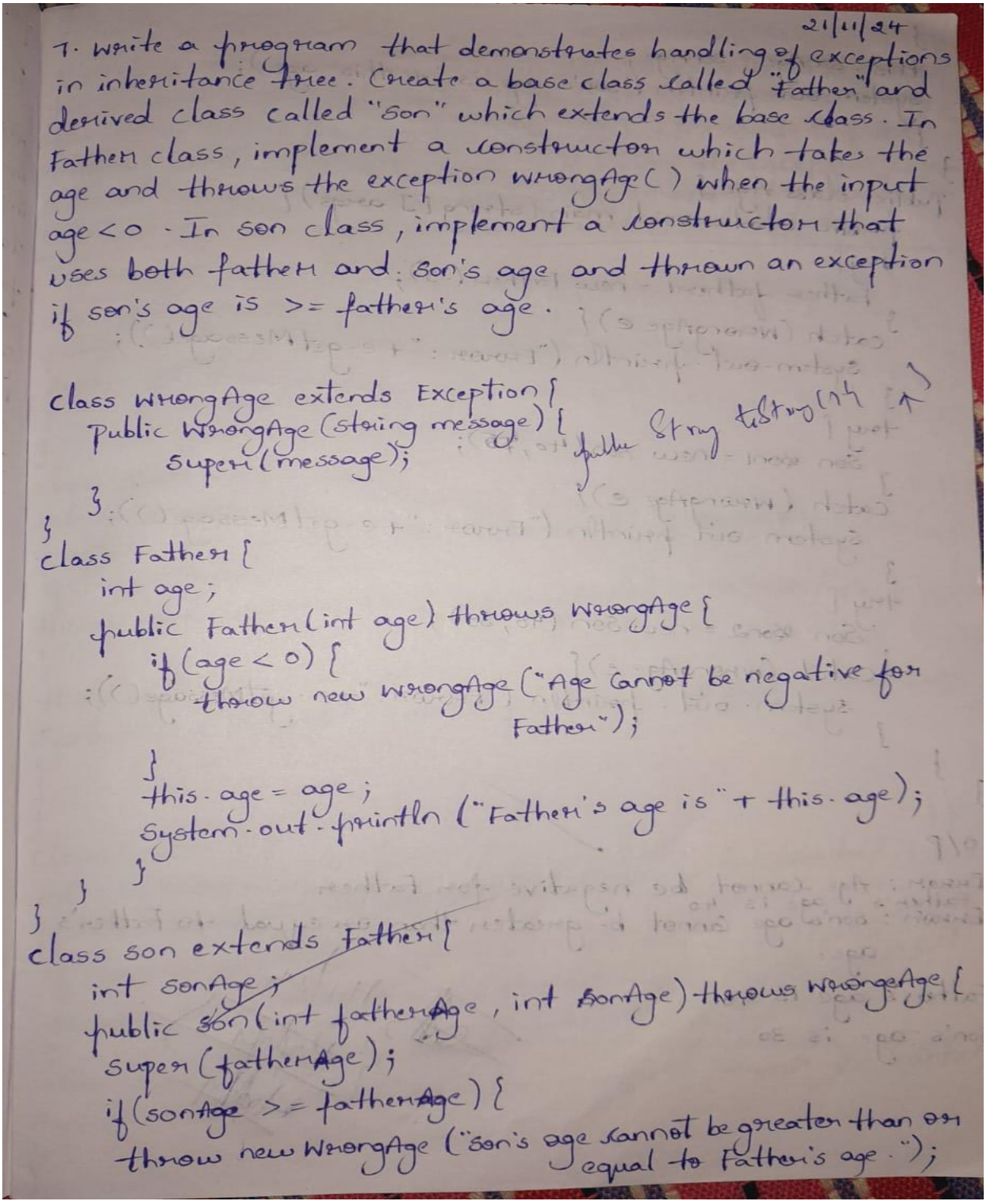
Program 7

Write a program that demonstrates handling of exceptions in inheritance tree. Create a base class called “Father” and derived class called “Son” which extends the base class. In Father class, implement a constructor which takes the age and throws the exception WrongAge( ) when the input age=father’s age.



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1. Write a program that demonstrates handling of exceptions in inheritance tree. Create a base class called "Father" and derived class called "Son" which extends the base class. In Father class, implement a constructor which takes the age and throws the exception WrongAge( ) when the input age < 0 . In son class, implement a constructor that uses both father and son's age and thrown an exception if son's age is >= father's age.

```
class WrongAge extends Exception {
    Public WrongAge (String message) {
        super(message);
    }
}
class Father {
    int age;
    public Father(int age) throws WrongAge {
        if (age < 0) {
            throw new WrongAge ("Age cannot be negative for
                                 Father");
        }
        this.age = age;
        System.out.println ("Father's age is " + this.age);
    }
}
class son extends Father {
    int sonAge;
    public son(int fatherAge, int sonAge) throws WrongAge {
        super (fatherAge);
        if (sonAge >= fatherAge) {
            throw new WrongAge ("son's age cannot be greater than or
                                 equal to Father's age.");
```

```
    }
    this.sonAge = sonAge;
    System.out.println("Son's age is " + this.age);
    }
}
Public class Age {
    public static void main(String[] args){
    try{
      Father father1 = new Father(-5);
    }catch(WrongAge e){
      System.out.println("Error : " + e.getMessage());
    }
    try{
      Son son1 = new Son(40, 55);
    }
    catch(WrongAge e){
      System.out.println("Error : " + e.getMessage());
    }
    try{
      Son son2 = new Son(40, 30);
    }catch(WrongAge e){
      System.out.println("Error : " + e.getMessage());
    }
  }
}
```

O/P

Error : Age cannot be negative for Father
Father's age is 40
Error : Son's age cannot be greater than or equal to Father's age.

Father's age is 40
Son's age is 30

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


class Father {
    int age;


    public Father(int age) throws WrongAge {
        if (age < 0) {
            throw new WrongAge("Age cannot be negative for Father.");
        }
        this.age = age;
        System.out.println("Father's age is " + this.age);
    }
}


class Son extends Father {
    int sonAge;


    public Son(int fatherAge, int sonAge) throws WrongAge {

        super(fatherAge);
```

```
        if (sonAge >= fatherAge) {
            throw new WrongAge("Son's age cannot be greater than or equal to Father's age.");
        }
        this.sonAge = sonAge;
        System.out.println("Son's age is " + this.sonAge);
    }
}


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

        try {
            Father father1 = new Father(-5);
        } catch (WrongAge e) {
            System.out.println("Error: " + e.getMessage());
        }

        try {
            Son son1 = new Son(40, 45);
        } catch (WrongAge e) {
            System.out.println("Error: " + e.getMessage());
        }

        try {
            Son son2 = new Son(40, 30);
        } catch (WrongAge e) {
            System.out.println("Error: " + e.getMessage());
        }
    }
```

}

```
D:\24BMSCE>javac Age.java

D:\24BMSCE>java Age
Error: Age cannot be negative for Father.
Father's age is 40
Error: Son's age cannot be greater than or equal to Father's age.
Father's age is 40
Son's age is 30
```