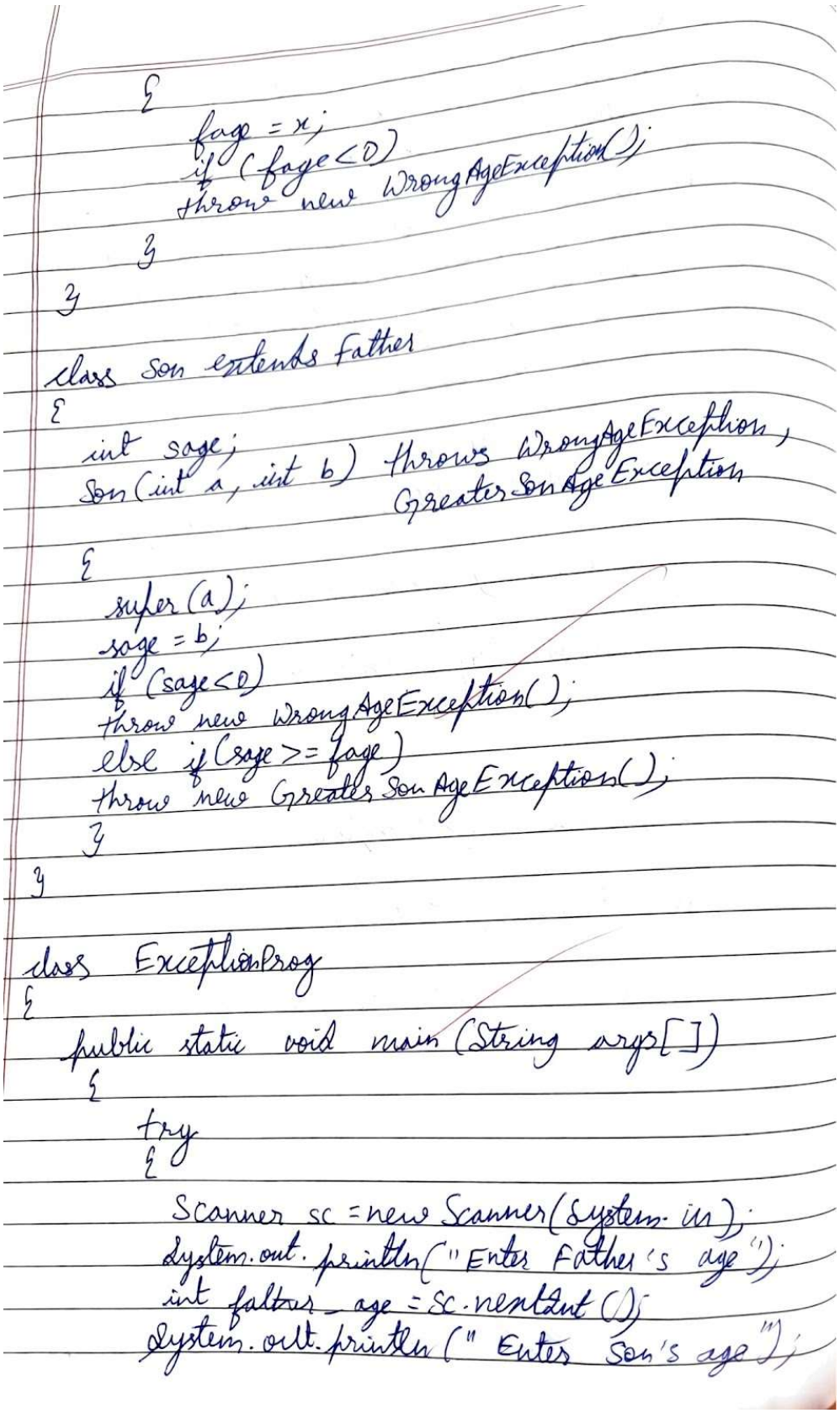
Lab Program 6

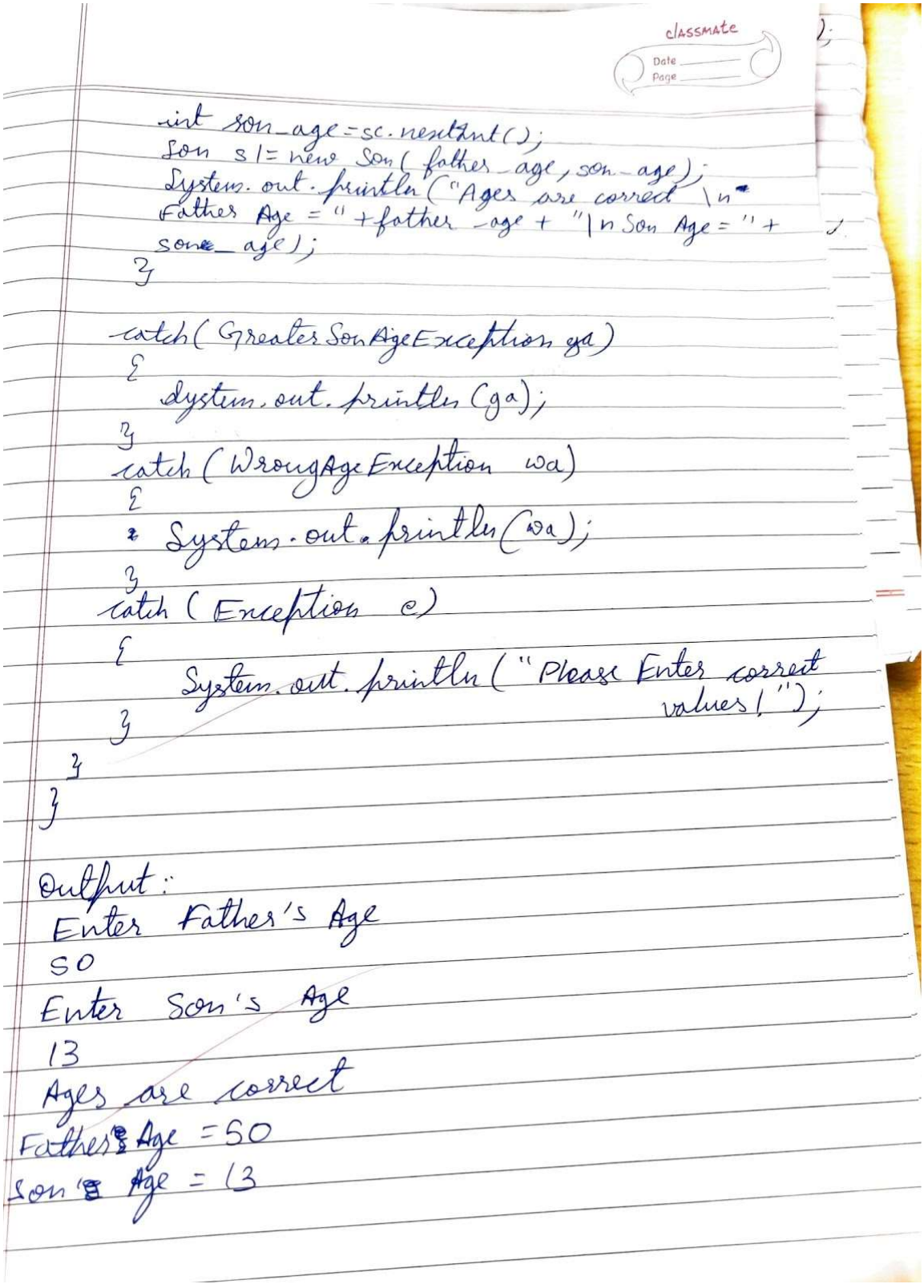
30/12/22

Q. 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 cases both father and son's age and throws an exception if son's age is >= father's age.

```
import java.util.*;
class WrongAgeException extends Exception
{
    public String toString()
    {
        return ("Age can't be negative!");
    }
}

class GreaterSonAgeException extends Exception
{
    public String toString()
    {
        return ("Son's age can't be more than Father's
                age!");
    }
}

class Father
{
    int fage;
    Father(int x) throws WrongAgeException
```



```
    {
        fage = x;
        if (fage<0)
        throw new WrongAgeException();
    }
}

class Son extends Father
{
  int sage;
  Son(int a, int b) throws WrongAgeException,
                           GreaterSonAgeException
  {
    super(a);
    sage = b;
    if (sage<0)
    throw new WrongAgeException();
    else if (sage>=fage)
    throw new GreaterSonAgeException();
    }
}

class ExceptionProg
{
  public static void main (String args[])
  {
      try
      {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Father's age");
        int father_age = sc.nextInt();
        System.out.println("Enter Son's age");
```



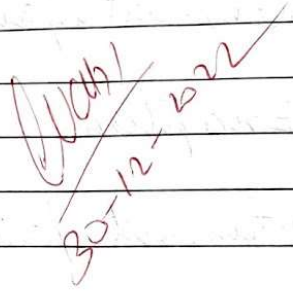
```
int son_age=sc.nextInt();
Son s1= new Son(father_age, son_age);
System.out.println("Ages are correct \n"
Father Age = "+father_age + "\n Son Age = "+
son_age);
}

catch(GreaterSonAgeException ga)
{
  System.out.println(ga);
}
catch(WrongAgeException wa)
{
  System.out.println(wa);
}
catch(Exception e)
{
    System.out.println("Please Enter correct
                        values!");
}
}
}
```

Output:

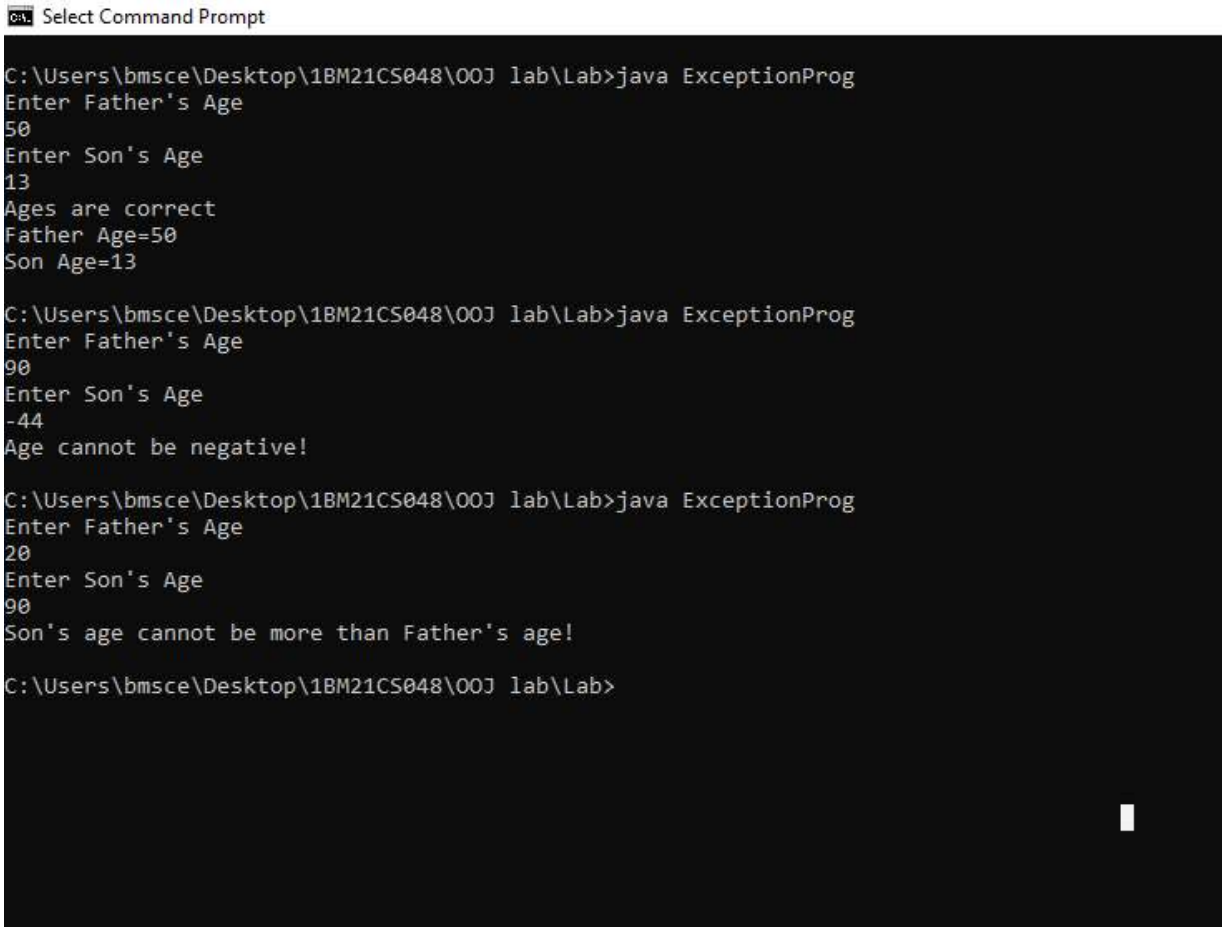
```
Enter Father's Age
50
Enter Son's Age
13
Ages are correct
Father's Age = 50
Son's Age = 13
```

Enter Father's Age
90
Enter Son's Age
-4
Ages can't be negative!

Enter Father's Age
20
Enter Son's Age
90
Son's age can't be more than father's age



OUTPUT:


Select Command Prompt
C:\Users\bmsce\Desktop\1BM21CS048\OOJ lab\Lab>java ExceptionProg
Enter Father's Age
50
Enter Son's Age
13
Ages are correct
Father Age=50
Son Age=13
C:\Users\bmsce\Desktop\1BM21CS048\OOJ lab\Lab>java ExceptionProg
Enter Father's Age
90
Enter Son's Age
-44
Age cannot be negative!
C:\Users\bmsce\Desktop\1BM21CS048\OOJ lab\Lab>java ExceptionProg
Enter Father's Age
20
Enter Son's Age
90
Son's age cannot be more than Father's age!
C:\Users\bmsce\Desktop\1BM21CS048\OOJ lab\Lab>