Program 7 :

1. Program demonstrating handling of exceptions in inheritance tree

```
import java.util.Scanner;
class WrongAge extends Exception {
    public WrongAge(String message){
        super(message);
    }
}
class Father {
    int fatherAge;
    public Father(int fatherAge)
    throws WrongAge {
        if (fatherAge<0){
            throw new WrongAge("Age cannot
be -ve");
        }
        this.fatherAge = fatherAge;
    }
}

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 must be
less than father's age");
        }
        this.SonAge = SonAge;
    }
}
```

```
public class fatherSon {
    public static void main (String[] args)
    Scanner sc = new Scanner (System.in);
    System.out.println ("Enter father's age & son's age ");
    int fa = sc.nextInt();
    int sa = sc.nextInt();
    Try {
        Son s = new Son (fa, sa);
    System.out.println ("Father's age : " + s.fatherAge);
    System.out.println ("Son's age " + s.sonAge);
        }
    catch (WrongAge e) {
        System.out.println ("Error : " + e.getMessage());
    }
}
```

Output :-

1. -1
   10
   Age cannot be -ve

2. 10
   +10
   [Age cannot be -ve] × Son's age must be less than father's age

3. 40
   20
   Father's age : 40
   Son's age : 20

Algorithm of 7th program :

1. Start
2. Create a class & extend it to exception
3. Create a constructor which would display error msg
4. Create a class Father & create a constructor.
5. Check if father's age is greater than 0, else display invalid age message
6. Create a class Son & extend it to father
7. Create a constructor & check if age is greater than or equal to father's age. If yes, then print invalid age
8. Create a Scanner element in main method
9. Take inputs for father's age & son's age
10. In try & catch block call pass the father's & son's age in the constructor.
11. Use catch block to display any error msg if any excep^n is caught
12. Stop

```
C:\Users\abdes\OneDrive\Documents\Java\java_code>javac lab_7.java

C:\Users\abdes\OneDrive\Documents\Java\java_code>java lab_7
Anagh.B.Deshpande(1BM22CS037)
Enter father's age and son's age:
-1
10
Error: Age cannot be negative

C:\Users\abdes\OneDrive\Documents\Java\java_code>java lab_7
Anagh.B.Deshpande(1BM22CS037)
Enter father's age and son's age:
10
10
Error: Son's age must be less than Father's age

C:\Users\abdes\OneDrive\Documents\Java\java_code>java lab_7
Anagh.B.Deshpande(1BM22CS037)
Enter father's age and son's age:
40
20
Father's age: 40
Son's age: 20
```

Program 8:

Write a program which creates 2 threads, one thread displaying "BMSCE" once every 10 sec & another displaying "CSE" every two seconds.

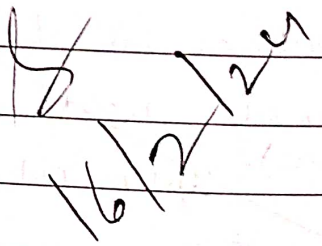
```
class A extends Threads {
        public int t1, time;
        t1 = 10;
        public void run() {
while (true){System.out.println("BMSCE");
            try {
                Thread.sleep(10000);
            }
            catch (Exception e)
            {
                System.out.println("Error Occured");
            } }
        }

class B extends Thread {
        public int t2 = 2;
        public void run() {
while (true){ System.out.println("CSE");
            try {
                sleep(2000);
            }
            catch (Exception e)
            {
                System.out.println("Error occured");
            } }
        }
```

```
public class demo {
    public static void main (String[] args) {
        A a = new A();
        B b = new B();
        a.start();
        b.start();
    }
}
```

⇒ Output :-

BMSCE
CSE
CSE
CSE
CSE
CSE
BMSCE
CSE
|
∞ Loop



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Algorithm for 8th program :-

Start
Create Klass A & extend it to thread
Create a run method
Create a loop to make it print BMSCE every 10 sec.
Put sleep(10000) in try & catch block
Similarly create another class B & extend it to thread
put a sleep of 2s & add try & catch blocks
In main method create the objects of both class
& override run method
Stop.

```
C:\Users\abdes\OneDrive\Documents\Java\java_code>javac lab_8.java

C:\Users\abdes\OneDrive\Documents\Java\java_code>java lab_8
Anagh.B.Deshpande(1BM22CS037)
BMSCE
CSE
CSE
CSE
CSE
CSE
BMSCE
CSE
CSE
CSE
CSE
CSE
BMSCE
CSE
CSE
CSE
CSE
CSE
BMSCE
CSE
CSE
CSE
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BMSCE
CSE
CSE
CSE
CSE
CSE
BMSCE
CSE
CSE
CSE
CSE
CSE
BMSCE
CSE
CSE
CSE
CSE
```