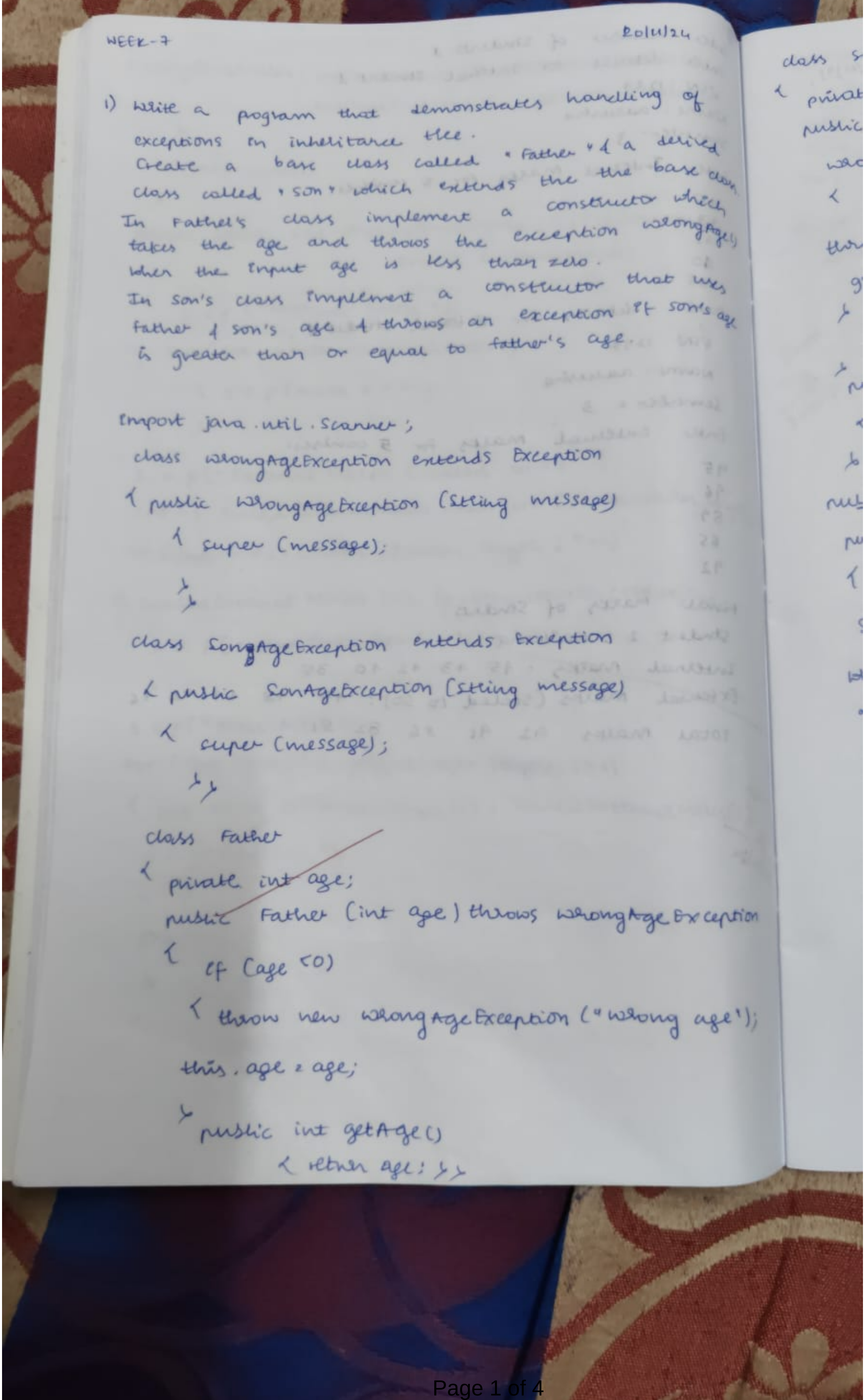
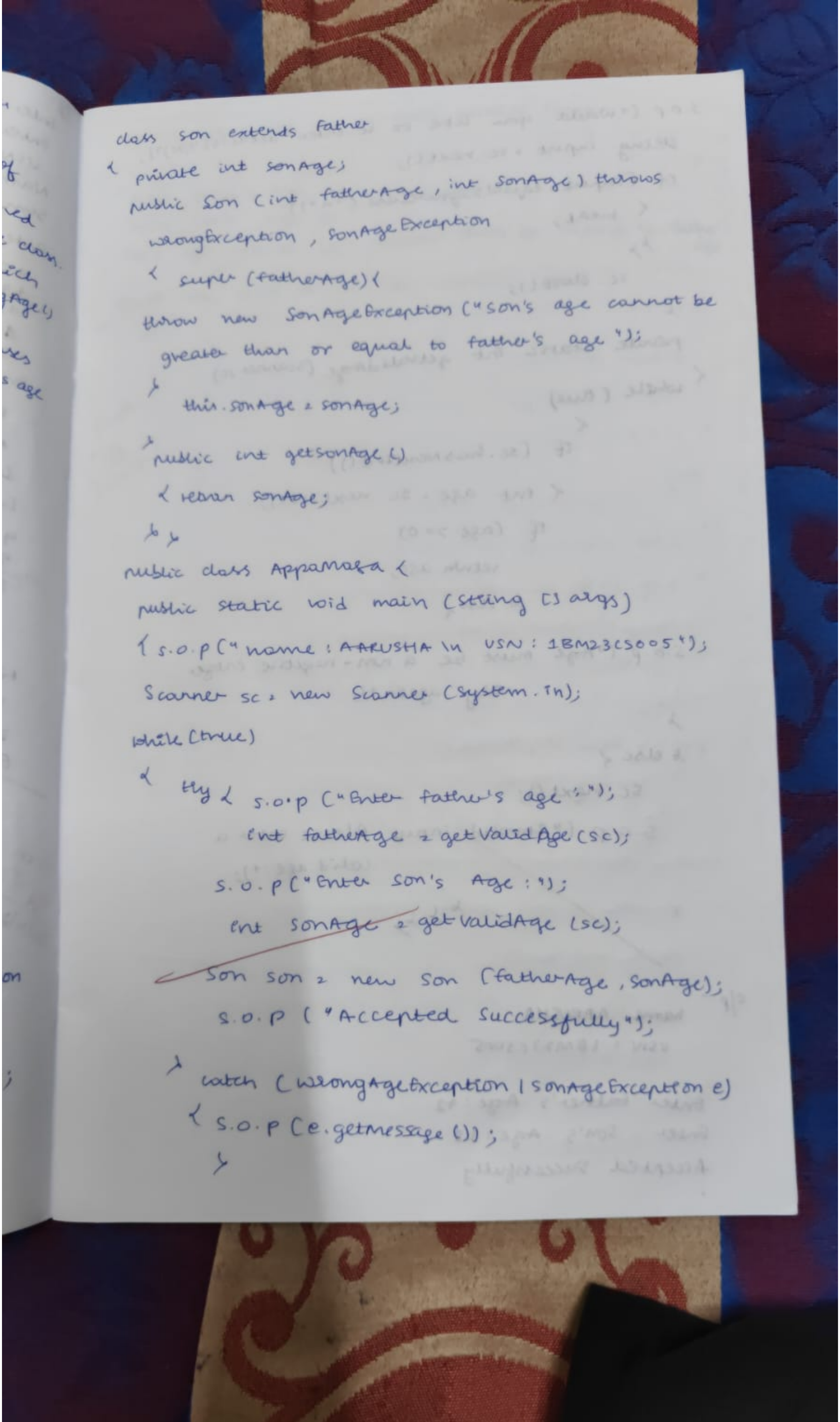


WEEK-7

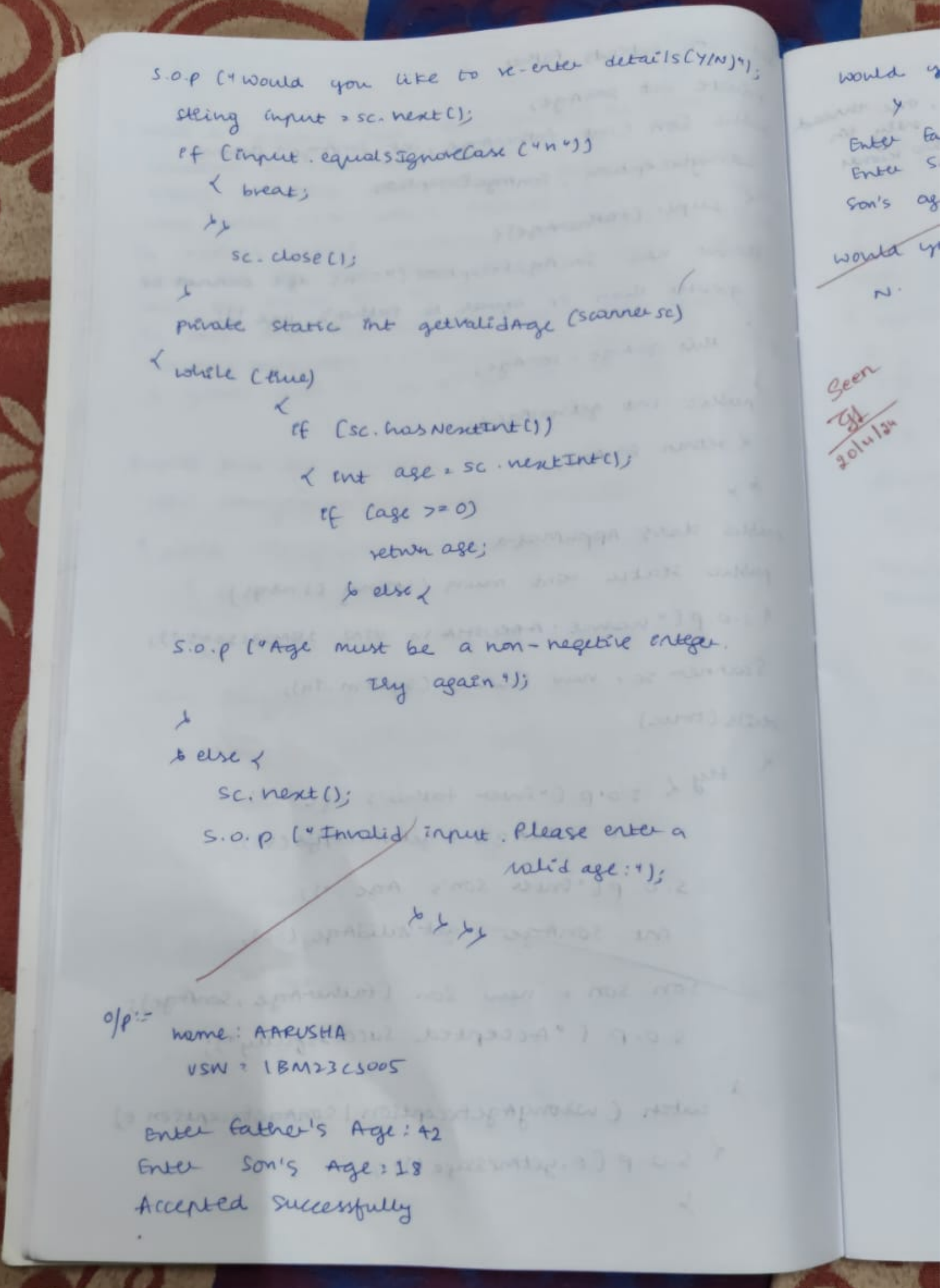
20/11/24

1) Write a program that demonstrates handling of exceptions in inheritance tree.
Create a base class called "Father" & a derived class called "Son" which extends the base class.
In Father's class implement a constructor which takes the age and throws the exception WrongAge() when the input age is less than zero.
In Son's class implement a constructor that uses father & son's age & throws an exception if son's age is greater than or equal to father's age.

```
import java.util.Scanner;
class WrongAgeException extends Exception
{ public WrongAgeException (String message)
   { super (message);
   }
 }
class SongAgeException extends Exception
{ public SonAgeException (String message)
  { super (message);
   }}
class Father
{
 private int age;
 public Father (int age) throws WrongAgeException
 {  if (age <0)
   { throw new WrongAgeException ("Wrong age");
  this.age = age;
  }
  public int getAge()
          { return age; }}
```



```
class son extends Father
{ private int sonAge;
public Son (int fatherAge, int SonAge) throws
  wrongException, SonAge Exception
  { super (fatherAge){
throw new SonAgeException ("Son's age cannot be
  greater than or equal to father's age ");
  }
    this.sonAge = sonAge;
  }
  public int getSonAge ()
  { return sonAge;
  } }
public class AppaMaga {
public static void main (String [] args)
{ s.o.p ("name : AARUSHA \n USN : 1BM23CS005");
 Scanner sc = new Scanner (System.In);
while (true)
{   try { s.o.p ("Enter father's age :");
          int fatherAge = getValidAge (sc);
        s.o.p ("Enter son's Age :");
         int sonAge = getValidAge (sc);
        Son son = new Son (fatherAge, SonAge);
        s.o.p ("Accepted Successfully");
  }  catch (WrongAgeException | SonAgeException e)
    { s.o.p (e.getMessage ());
     }
```



```
S.o.p ("Would you like to re-enter details(Y/N)");
 String input = sc.next();
 if (input.equalsIgnoreCase ("n"))
   { break;
   }}
     sc.close();
 }
 private static int getValidAge (Scanner sc)
{ while (true)
        {
          if (sc.hasNextInt())
          { int age = sc.nextInt();
            if (age >= 0)
               return age;
            } else {
 S.o.p ("Age must be a non-negetive integer.
             Try again");
 }
 } else {
     sc.next();
     S.o.p ("Invalid input. Please enter a
                          valid age:");
               } } }}
```

o/p:- name : AARUSHA
   USN : 1BM23CS005

```
Enter father's Age : 42
Enter Son's Age : 18
Accepted Successfully
```

```
would y
   y
Enter Fa
Enter S
Son's ag
would y
  N.
```

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```
would you like to re-enter details (Y/N)
    y
Enter Father's Age : 55
Enter Son's  Age : 58
Son's age cannot be greater than or equal to father's
                                                  age.
would you like to re-enter details (Y/N)
  N.
```

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