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Roll no: **68**
Section: **A**
Subject: **OOPS JAVA**

PRACTICAL 5

Aim: **Exception Handling**

Create a class Student with data members as Name, CGPA, Enrolment number, Password. Throw user defined exception if the following criteria are not met:

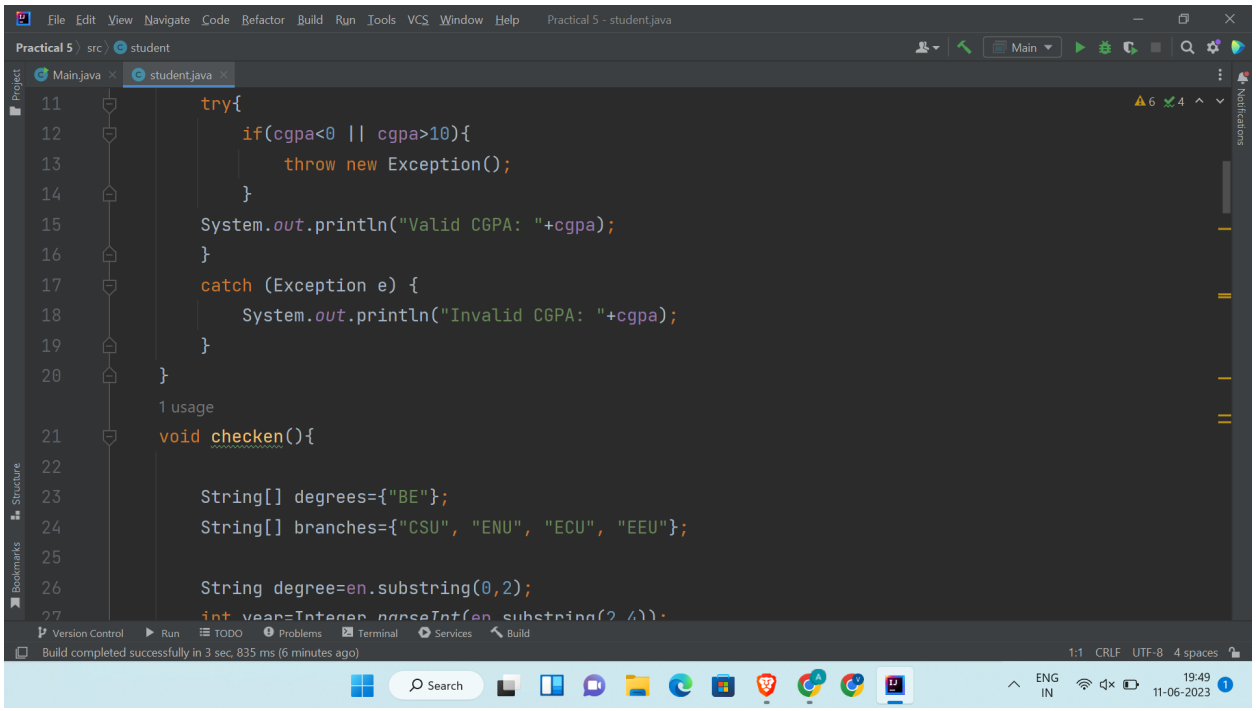
i. CGPA should be between 0 to 10

ii. Enrolment number should be in format BE18CSU105, valid year is from 20to 23. Valid branches are CSU, ENU, ECU, EEU. Valid roll number is from 1 to 250.

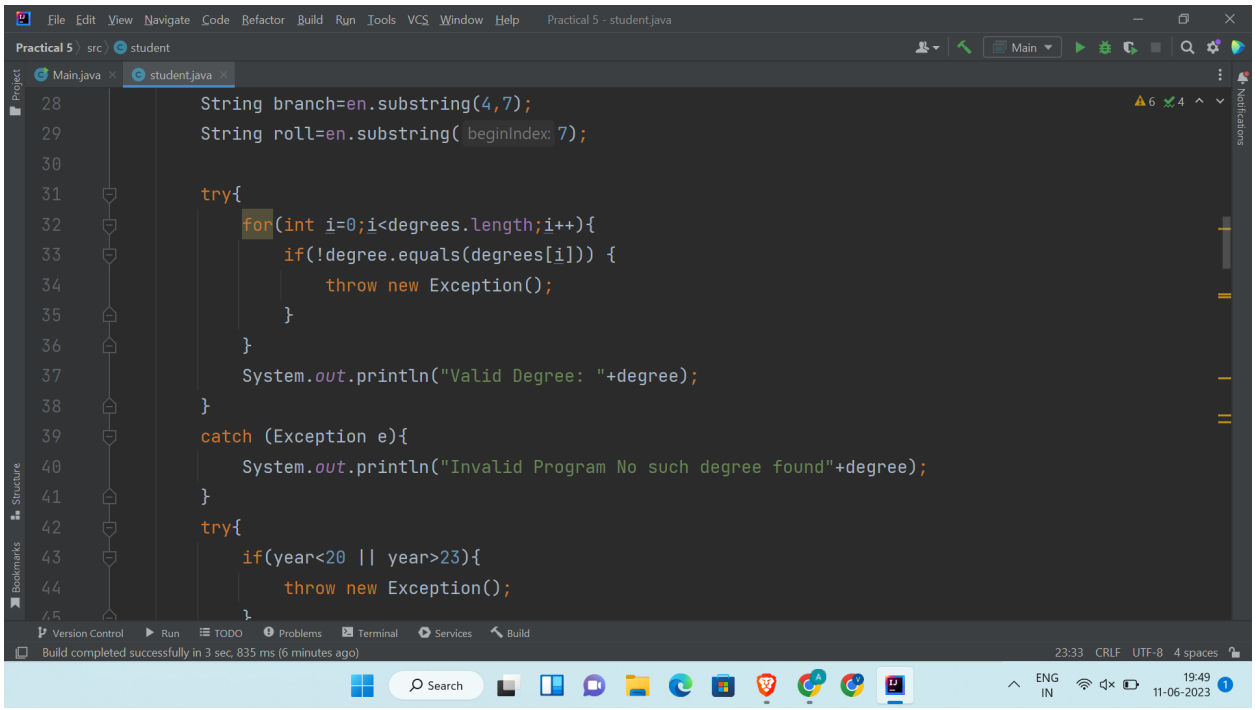
iii. Password should have minimum 8 characters. Must include 1 uppercase letter, 1 small case letter, 1 number, 1 special symbol(!, $, %, *, &)

Use proper exception handling methods. Write main() to demonstrate the working of class student.

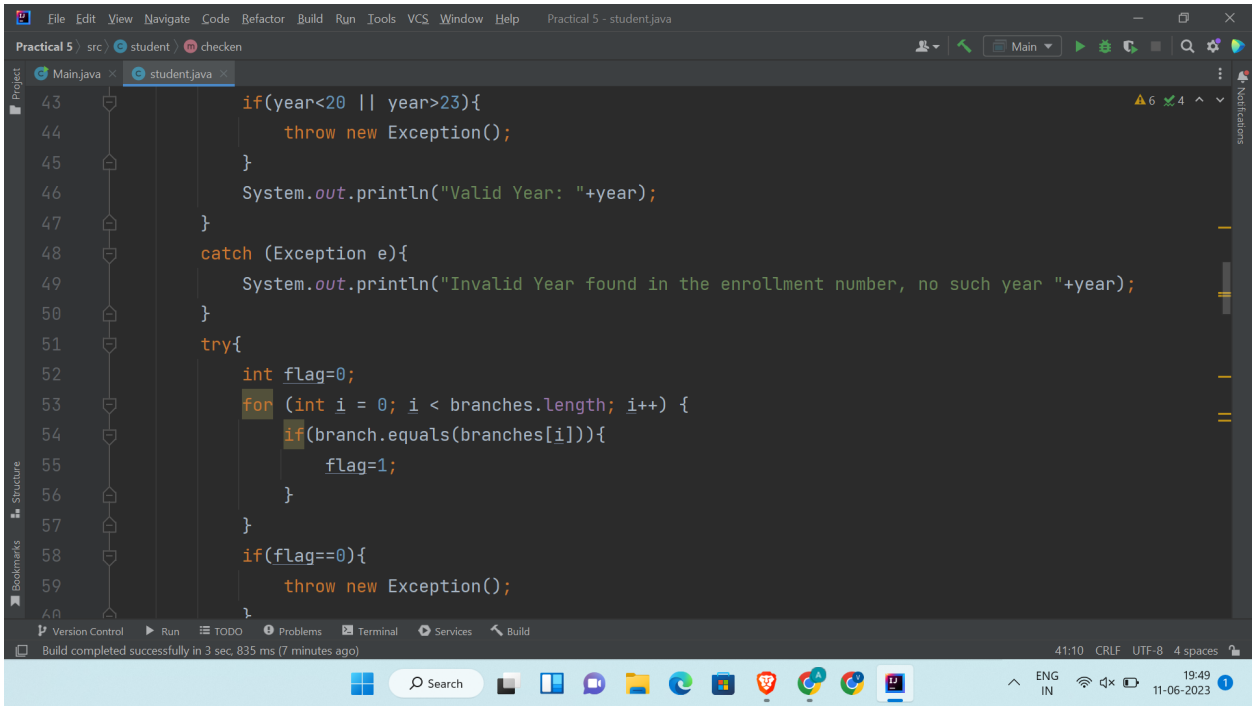
Student Class:



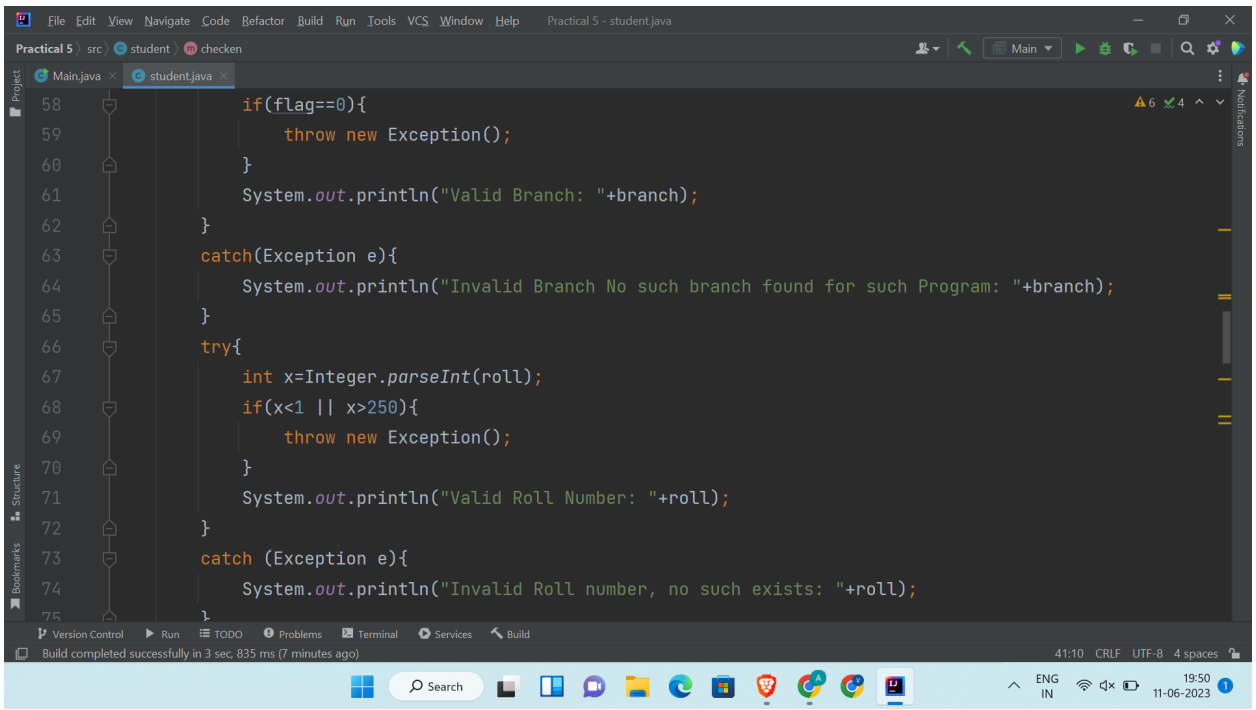
```
        try{
            if(cgpa<0 || cgpa>10){
                throw new Exception();
            }
        System.out.println("Valid CGPA: "+cgpa);
        }
        catch (Exception e) {
            System.out.println("Invalid CGPA: "+cgpa);
        }
    }
    1 usage
    void checken(){

        String[] degrees={"BE"};
        String[] branches={"CSU", "ENU", "ECU", "EEU"};

        String degree=en.substring(0,2);
```



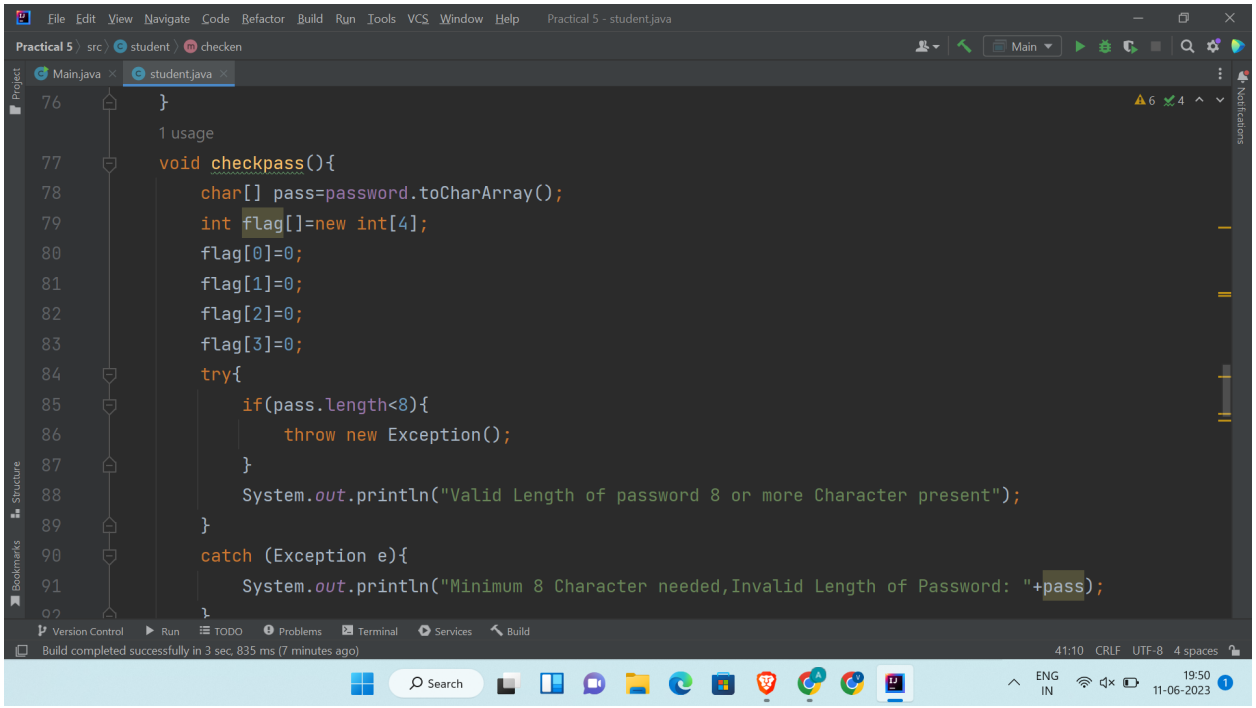
```
        String branch=en.substring(4,7);
        String roll=en.substring( beginIndex: 7);

        try{
            for(int i=0;i<degrees.length;i++){
                if(!degree.equals(degrees[i])) {
                    throw new Exception();
                }
            }
            System.out.println("Valid Degree: "+degree);
        }
        catch (Exception e){
            System.out.println("Invalid Program No such degree found"+degree);
        }
        try{
            if(year<20 || year>23){
                throw new Exception();
```

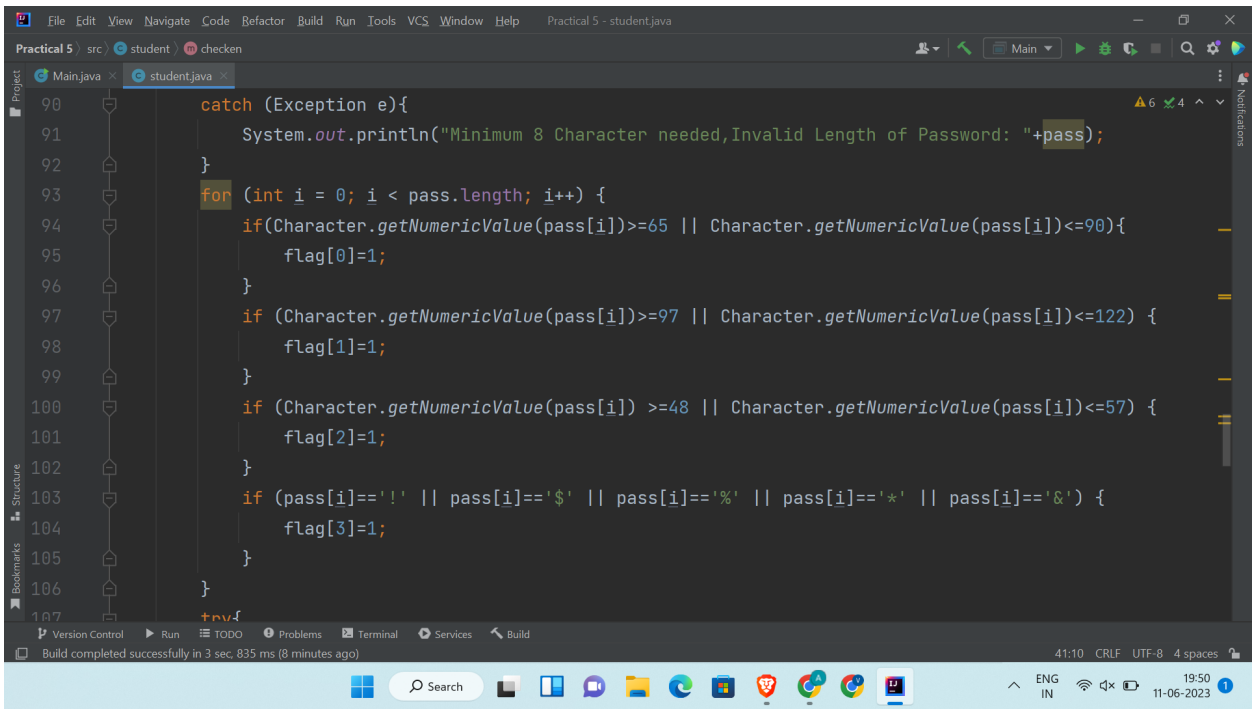


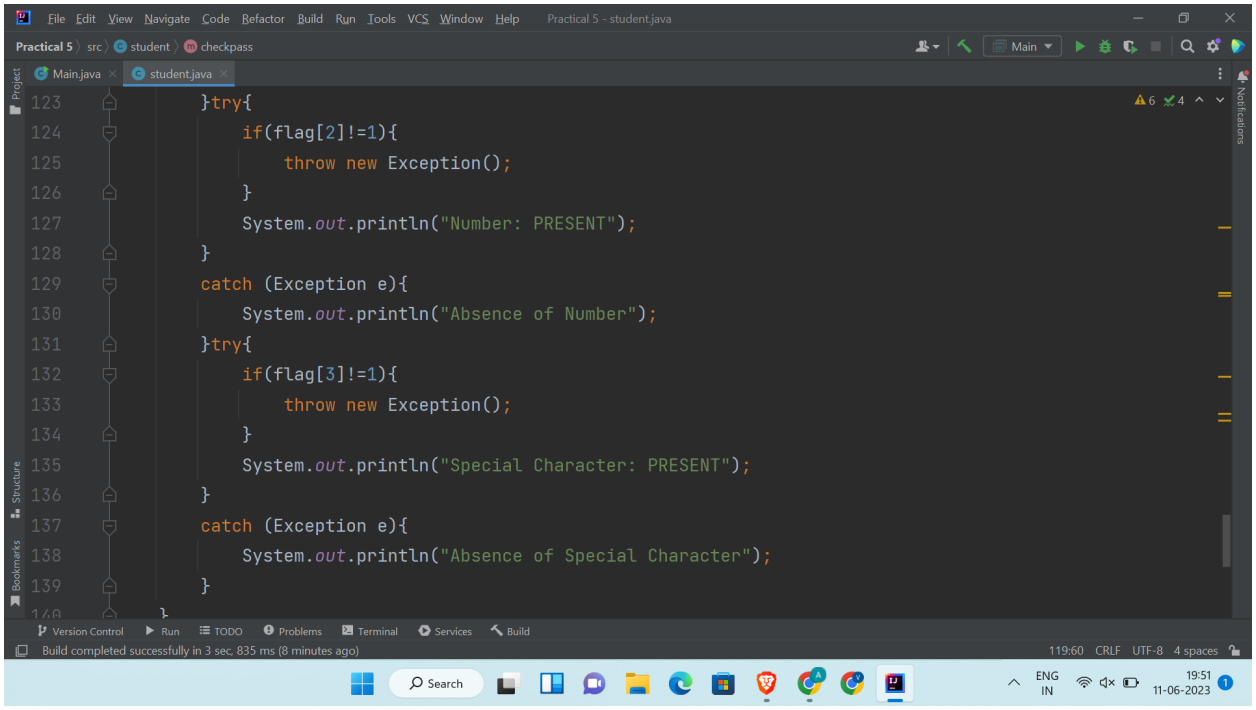

```
43              if(year<20 || year>23){
44                  throw new Exception();
45              }
46              System.out.println("Valid Year: "+year);
47          }
48          catch (Exception e){
49              System.out.println("Invalid Year found in the enrollment number, no such year "+year);
50          }
51          try{
52              int flag=0;
53              for (int i = 0; i < branches.length; i++) {
54                  if(branch.equals(branches[i])){
55                      flag=1;
56                  }
57              }
58              if(flag==0){
59                  throw new Exception();
60              }
```



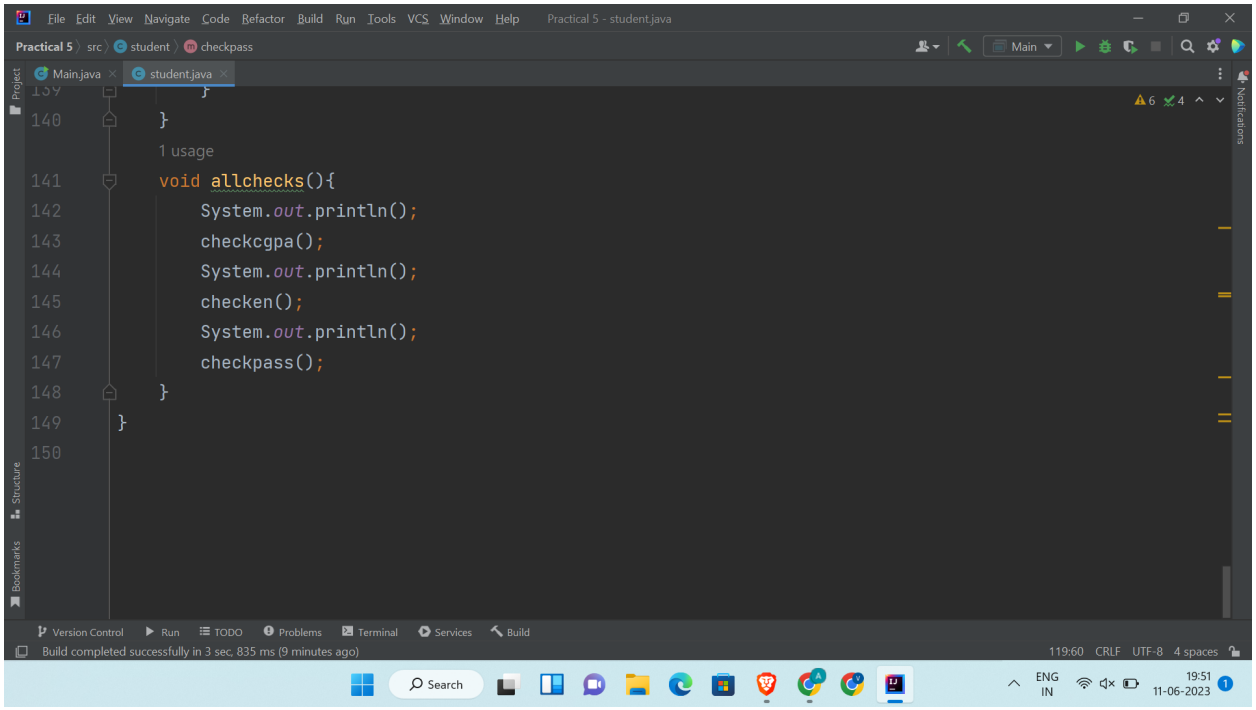

```
58              if(flag==0){
59                  throw new Exception();
60              }
61              System.out.println("Valid Branch: "+branch);
62          }
63          catch(Exception e){
64              System.out.println("Invalid Branch No such branch found for such Program: "+branch);
65          }
66          try{
67              int x=Integer.parseInt(roll);
68              if(x<1 || x>250){
69                  throw new Exception();
70              }
71              System.out.println("Valid Roll Number: "+roll);
72          }
73          catch (Exception e){
74              System.out.println("Invalid Roll number, no such exists: "+roll);
75          }
```


File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
Practical 5 - student.java
Practical 5 src student checken
Main.java
student.java
}
1 usage
void checkpass(){
char[] pass=password.toCharArray();
int flag[]=new int[4];
flag[0]=0;
flag[1]=0;
flag[2]=0;
flag[3]=0;
try{
if(pass.length<8){
throw new Exception();
}
System.out.println("Valid Length of password 8 or more Character present");
}
catch (Exception e){
System.out.println("Minimum 8 Character needed,Invalid Length of Password: "+pass);
Version Control
Run
TODO
Problems
Terminal
Services
Build
Build completed successfully in 3 sec, 835 ms (7 minutes ago)
41:10 CRLF UTF-8 4 spaces
Search
ENG IN
19:50 11-06-2023


File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
Practical 5 - student.java
Practical 5 src student checken
Main.java
student.java
catch (Exception e){
System.out.println("Minimum 8 Character needed,Invalid Length of Password: "+pass);
}
for (int i = 0; i < pass.length; i++) {
if(Character.getNumericValue(pass[i])>=65 || Character.getNumericValue(pass[i])<=90){
flag[0]=1;
}
if (Character.getNumericValue(pass[i])>=97 || Character.getNumericValue(pass[i])<=122) {
flag[1]=1;
}
if (Character.getNumericValue(pass[i]) >=48 || Character.getNumericValue(pass[i])<=57) {
flag[2]=1;
}
if (pass[i]=='!' || pass[i]=='$' || pass[i]=='%' || pass[i]=='*' || pass[i]=='&') {
flag[3]=1;
}
}
Version Control
Run
TODO
Problems
Terminal
Services
Build
Build completed successfully in 3 sec, 835 ms (8 minutes ago)
41:10 CRLF UTF-8 4 spaces
Search
ENG IN
19:50 11-06-2023



```
        }try{
            if(flag[2]!=1){
                throw new Exception();
            }
            System.out.println("Number: PRESENT");
        }
        catch (Exception e){
            System.out.println("Absence of Number");
        }try{
            if(flag[3]!=1){
                throw new Exception();
            }
            System.out.println("Special Character: PRESENT");
        }
        catch (Exception e){
            System.out.println("Absence of Special Character");
        }
    }
```



```
    }
    1 usage
    void allchecks(){
        System.out.println();
        checkcgpa();
        System.out.println();
        checken();
        System.out.println();
        checkpass();
    }
}
```

```
public class student {
String name,password,en;
double cgpa;
student(String name,double cgpa,String en,String pass){
this.name=name;
```

```
this.cgpa=cgpa;
this.en=en;
password=pass;
}
void checkcgpa(){
try{
if(cgpa<0 || cgpa>10){
throw new Exception();
}
System.out.println("Valid CGPA: "+cgpa);
}
catch (Exception e) {
System.out.println("Invalid CGPA: "+cgpa);
}
}
void checken(){

String[] degrees={"BE"};
String[] branches={"CSU", "ENU", "ECU", "EEU"};

String degree=en.substring(0,2);
int year=Integer.parseInt(en.substring(2,4));
String branch=en.substring(4,7);
String roll=en.substring(7);

try{
for(int i=0;i<degrees.length;i++){
if(!degree.equals(degrees[i])) {
throw new Exception();
}
}
System.out.println("Valid Degree: "+degree);
}
catch (Exception e){
System.out.println("Invalid Program No such degree
found"+degree);
```

```
}
try{
if(year<20 || year>23){
throw new Exception();
}
System.out.println("Valid Year: "+year);
}
catch (Exception e){
System.out.println("Invalid Year found in the enrollment
number, no such year "+year);
}
try{
int flag=0;
for (int i = 0; i < branches.length; i++) {
if(branch.equals(branches[i])){
flag=1;
}
}
if(flag==0){
throw new Exception();
}
System.out.println("Valid Branch: "+branch);
}
catch(Exception e){
System.out.println("Invalid Branch No such branch found
for such Program: "+branch);
}
try{
int x=Integer.parseInt(roll);
if(x<1 || x>250){
throw new Exception();
}
System.out.println("Valid Roll Number: "+roll);
}
catch (Exception e){
```

```
System.out.println("Invalid Roll number, no such exists:
"+roll);
}
}
void checkpass(){
char[] pass=password.toCharArray();
int flag[]=new int[4];
flag[0]=0;
flag[1]=0;
flag[2]=0;
flag[3]=0;
try{
if(pass.length<8){
throw new Exception();
}
System.out.println("Valid Length of password 8 or more
Character present");
}
catch (Exception e){
System.out.println("Minimum 8 Character needed,Invalid
Length of Password: "+pass);
}
for (int i = 0; i < pass.length; i++) {
if(Character.getNumericValue(pass[i])>=65 ||
Character.getNumericValue(pass[i])<=90){
flag[0]=1;
}
if (Character.getNumericValue(pass[i])>=97 ||
Character.getNumericValue(pass[i])<=122) {
flag[1]=1;
}
if (Character.getNumericValue(pass[i]) >=48 ||
Character.getNumericValue(pass[i])<=57) {
flag[2]=1;
}
```

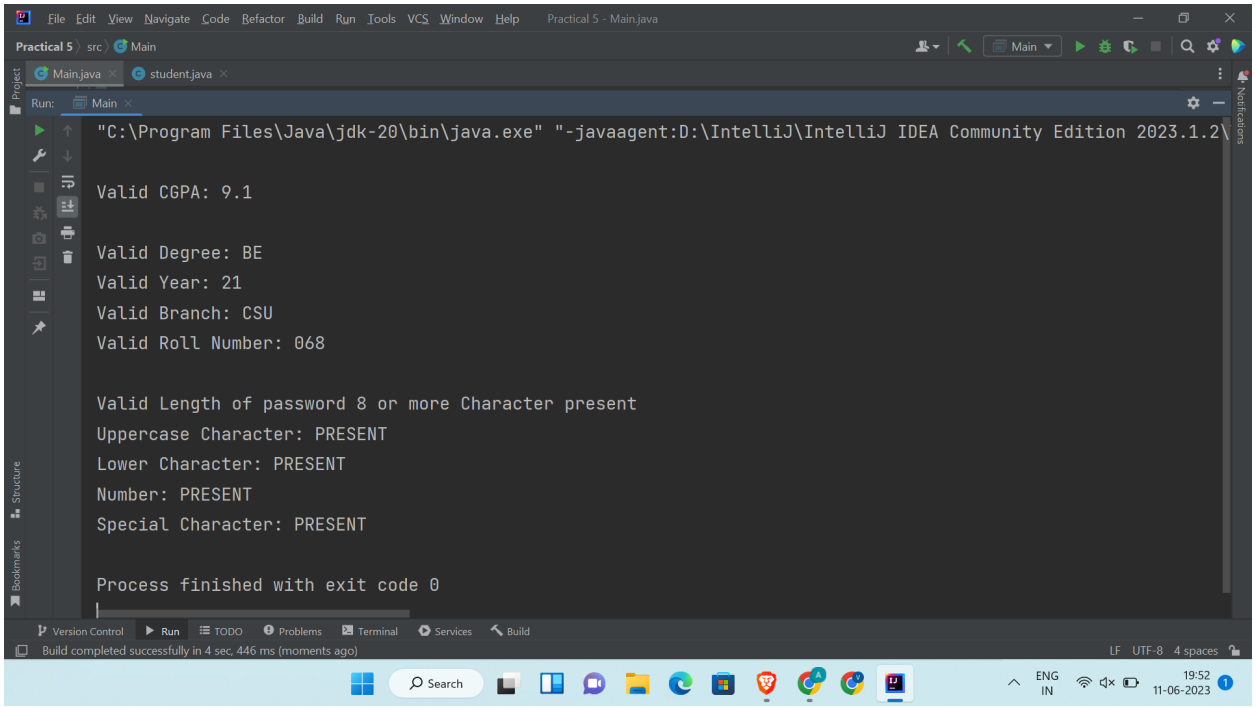
```
if (pass[i]=='!' || pass[i]=='$' || pass[i]=='%' ||
pass[i]=='*' || pass[i]=='&') {
flag[3]=1;
}
}
try{
if(flag[0]!=1){
throw new Exception();
}
System.out.println("Uppercase Character: PRESENT");
}
catch (Exception e){
System.out.println("Absence of Uppercase Character");
}try{
if(flag[1]!=1){
throw new Exception();
}
System.out.println("Lower Character: PRESENT");
}
catch (Exception e){
System.out.println("Absence of Lower Character");
}try{
if(flag[2]!=1){
throw new Exception();
}
System.out.println("Number: PRESENT");
}
catch (Exception e){
System.out.println("Absence of Number");
}try{
if(flag[3]!=1){
throw new Exception();
}
System.out.println("Special Character: PRESENT");
}
catch (Exception e){
```

```
System.out.println("Absence of Special Character");
}
}
void allchecks(){
System.out.println();
checkcgpa();
System.out.println();
checken();
System.out.println();
checkpass();
}
}
```

Main Class:

```
import java.io.IOException;

public class Main {
public static void main(String[] args) throws
java.lang.Exception {
student s1=new student("Vedant
Tiwari",9.1,"BE21CSU068","VeDaNt&123");
s1.allchecks();
}
}
```

OUTPUT:



Result:

Successfull execution of Practical 5.