Run the main in Main.java. Then my code would ask you the role for which you want to login. The login data of admin and professors have been provided in the code already and student need to register first for logging in.

--> FOR STUDENT FIRST REGISTER AND THEN LOGIN USING THE SAME DETAILS

--> PROFESSORS EMAIL AND PASSWORD ARE IN THE MAINE FILE ON LINE 34-36:-

A. Name - name1
Email - email1 Password - 123

B. Name - name2
Email - email2 Password - 123

C. Name - name3
Email - email3 Password - 123

ADMIN EMAIL - Admin@iiitd.ac.in
ADMIN PASSWORD - 123

--> TA EMAIL AND PASSWORD ARE IN THE MAIN FILE ON LINE 37-39:-

A. Name - ta1
Email - email1 Password - 123

B. Name - ta1
Email - email2 Password - 123

C. Name - ta1
Email - email3 Password - 123

I have added 6 courses in my code. Among these 3 are for the
first semester(MAT101,MAT102,MAT103) and 2 are for the second semester(CSE101,CSE102) and 1 for the 3rd semester (CSE103).

The professor initially does not know the courses allocated to him.

He will only know after the admin allocates the course to him .

The student need not register all the courses available in each semester, and if he fails in one of the course registered by him, then he will remain in the same semester.

Admin assigns grade and accordingly the SGPA is calculated eventually cgpa is also calculated.

OOPS CONCEPTS APPLIED:
1.CLASSES - Used everywhere to make different entities like student, professor , admin etc.
2.INTERFACE - "User" interface was used and implemented on student,professor and admin to make sure they implement a menu method.
3.POLYMORPHISM - Can be seen in various places like Overriding toString method to return string value of objects, Constructor overloading in classes by making parameterised and non parameterised constructors.
4.ENCAPSULATION - Getters are Setters are used in evey class to get and set private attributes (like name , email, password etc in student class).
5.GENERICS - Used for detailed feedback system so that student can either give rating out of 10 or give detailed detailed feeback which can be viewd by the professor. Both type of feedbacks are stored in the same class with help of generics.
6.INHERITANCE - Inheritance has been used to make TA class which extends Student class and all its methods.
7.EXCEPTION HANDLING - 3 Types of Custom exceptions are made :CourseFullException,InvalidLoginException,DropDeadlinePassedException which are invoked using try-catch blocks with a custom message whenever there is an exception in program.

1. Exception Handling:-

Exception triggered due to invalid login credentials of Student,admin,professor:-

```
Login as Professor
Enter email:
123
Enter password:
234
Wrong credentials!
```

```
1
1. Login
2. If you're new, Register
3. Exit student portal
2
Register your account.
Enter name:
sanjeev
Enter email:
sanjeev23483@iiitd.ac.in
Enter password:
123
1. Login as Student
2. Login as Professor
3. Login as Admin
4. Login as TA
5. Exit application.
1
1. Login
2. If you're new, Register
3. Exit student portal
1
Login as Student
Enter email:
s1234
Enter password:
123
Wrong login credentials!
```

```
1. Login as Admin
2. Exit admin portal
1
Enter email:
123
Enter password:
fdg
Wrong password try again!
```

Exceptions due to exceeded students limits for the course;-

```
Courses available to you are:
Course Code: MAT101 | Semester: 1 | Title: Calculus | Credits: 2 | Class Timings: 8AM - 10AM | Professor: null | Syllabus: xyz | Pre Requisites: null | Enrollment Limit

Course Code: MAT102 | Semester: 1 | Title: Differential Equations | Credits: 4 | Class Timings: 10AM - 12 Noon | Professor: null | Syllabus: xyz | Pre Requisites: MAT10

Course Code: MAT103 | Semester: 1 | Title: Complex Variables | Credits: 2 | Class Timings: 2PM - 4PM | Professor: null | Syllabus: xyz | Pre Requisites: MAT102 | Enroll

Select Courses to Register by entering the Course Code:
MAT101
Course: MAT101 is full. Cannot register.
```

Exception due to dropping the course after the dropping deadline has passed;-

```
Your registered courses are :
Course Code: MAT101 | Semester: 1 | Title: Calculus | Credits: 2 | Class Timings: 8AM - 10AM | Professor: null | Syllabus: xyz | Pre Requisites: null | Enrollment Limit

Select Courses you want to drop by entering the Course Code:
MAT101
The drop deadline for MAT101 has passed. You cannot drop this course now.
```

2. FEEDBACK:-

```
    Welcome to Professor Portal.
Select what you want to do:
1. View Courses.
2. Update Courses.
3: View course feedback.
4. Assign Grade.
3
Feedback Detail for the assigned course is: 8
Do you want to do more as a Professor? (y/n)
```

```
    Welcome to Professor Portal.
Select what you want to do:
1. View Courses.
2. Update Courses.
3: View course feedback.
4. Assign Grade.
3
Feedback Detail for the assigned course is: 8
Feedback Detail for the assigned course is: THE course was very informative and very well taught.
Do you want to do more as a Professor? (y/n)
```

3. TA ;-

Here TA is able to view the grade assigned by admin:-

```
n
1. Login as Student
2. Login as Professor
3. Login as Admin
4. Login as TA
5. Exit application.
4
1. Login
2. Exit TA portal.
1
Login as TA
Enter email:
email1
Enter password:
123
    Welcome to TA Portal.
Enter name of your assigned professor:
prof1
Select what you want to do:
1. View Grades.
2. Assign Grade.
3. Perform Student Functionalities.
1
Following are the grades of your assigned professor's students:
Student name: 1 | Grade in MAT101: B
Student name: 1 | Grade in MAT101: B
Do you want to do more as a Teacher Assistant? (y/n)
```

Here the TA is able to update the grade:-

```
1. Login
2. Exit TA portal.
1
Login as TA
Enter email:
email1
Enter password:
123
    Welcome to TA Portal.
Enter name of your assigned professor:
prof1
Select what you want to do:
1. View Grades.
2. Assign Grade.
3. Perform Student Functionalities.
2
Pick a student by name:
Student name: 1 | Grade: 0
1
Enter new grade for your subject:
7
Do you want to do more as a Teacher Assistant? (y/n)
y
1. View Grades.
2. Assign Grade.
3. Perform Student Functionalities.
1
Following are the grades of your assigned professor's students:
Student name: 1 | Grade in MAT101: 7
Do you want to do more as a Teacher Assistant? (y/n)
```