The problem statement demanded for a Course Management System (like Nalanda) where both students and admin can login and perform their respective day to day tasks.

The program created runs on the command-line and takes user input to traverse through different parts of the program.

As soon as the program is run, the main function calls the login function.
The Login function takes inputs for Student/Admin as well as gives an option to create a new user or login as existing user.
Upon selecting any, and passing the user verification check, an object of it's respective type is created. This further leads to displaying all the options and tasks that we can take up. `

The class structure and inheritance implemented is explained below.

Person Class – Common class which stores inputs and details that are common for both Teacher and student. It consists of an inner Service Class that consists of common functions like displaying notices etc.

Student Class – Takes in Student Specific information like Id no and course enrolled and contains their respective getter functions. Also consists of StudentService class to implement student specific functions like displaying marks etc.

Admin Class – Manually hardcodes Admin details (as was demanded by the problem statement) and consists of the inner function to make upcoming events, Set-important links etc.

Test Class – This class allows the possibility to take tests. This class also automatically updates the marks based on the test given.

Upon login, we are greeted with a message of all the options available and on selecting the specific inputs, we can perform specific tasks.

All the details of the students and notices, links etc. are stored in text files. Also the marks change is being updated automatically in the files from which the details are fetched.

The same is explained in the video.
No test cases were provided. We were guided to implement as many features as we could.

Below are a few Screenshots from the terminal that will better enable us to understand the working.

The greeting message:

```
            Welcome to the Course Management Portal

Press 1 for Student or 2 for Admin
```

Creating a Student via Signup:

```
Press 1 to signIn or 2 to signUp
2
Enter emailID
hridaykedia@gmail.com
Enter password
hriday
Enter Name
Hriday Kedia
Enter Country
India
Enter City
Siliguri
Enter StudentId
2019B2A70964P

 You can successfully signed Up, please sign In to use the portal.
```

Signing In Via preexisting details and the options that we get on screen:

```
CourseManagement [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.0.11.jdk/Contents/Home/bin/java  (25-Nov-2021, 8:03:46 PM)
Press 1 to signIn or 2 to signUp
1

Enter emailID
hridaykedia@gmail.com

Enter password
hriday

Enter 1 to see your Personal Details
Enter 2 to view Enrolled Courses
Enter 3 to view Marks
Enter 4 to take Active Tests
Enter 5 to view upcoming events
Enter 6 to view important links
Enter 7 to view notices
Enter 8 to view the student list
Enter 9 to log out
```

Viewing Personal Details, Enrolled Courses and Marks

```
Enter 8 to view the student list
Enter 9 to log out
1

Name:Hriday Kedia
EmailId:hridaykedia@gmail.com
StudentId:2019B2A70964P
City:Siliguri
Country:India

Enter 1 to see your Personal Details
Enter 2 to view Enrolled Courses
Enter 3 to view Marks
Enter 4 to take Active Tests
Enter 5 to view upcoming events
Enter 6 to view important links
Enter 7 to view notices
Enter 8 to view the student list
Enter 9 to log out
2
CS F213

Enter 1 to see your Personal Details
Enter 2 to view Enrolled Courses
Enter 3 to view Marks
Enter 4 to take Active Tests
Enter 5 to view upcoming events
Enter 6 to view important links
Enter 7 to view notices
Enter 8 to view the student list
Enter 9 to log out
3
0

Enter 1 to see your Personal Details
Enter 2 to view Enrolled Courses
Enter 3 to view Marks
Enter 4 to take Active Tests
Enter 5 to view upcoming events
Enter 6 to view important links
Enter 7 to view notices
Enter 8 to view the student list
Enter 9 to log out
```

Taking a test:

```
Enter 1 to see your Personal Details
Enter 2 to view Enrolled Courses
Enter 3 to view Marks
Enter 4 to take Active Tests
Enter 5 to view upcoming events
Enter 6 to view important links
Enter 7 to view notices
Enter 8 to view the student list
Enter 9 to log out
4
Q1. OOP Stands for ?[1 marks]
a.Object Object Programming
b.Oriented Object Programming
c.Object Oriented Programming
d.None of the Above

Please enter the correction option('a','b','c','d')
c
Q2. Which of the option is not a feature of OOP ?[1 marks]
a.Encalsulation
b.Inheritance
c.Polymorphism
d.Recursion

Please enter the correction option('a','b','c','d')
d
Q3. What is the code of the course OOP ?[1 marks]
a. CS F211
b. CS F212
c. CS F213
d. CS F214

Please enter the correction option('a','b','c','d')
c
Q4. Who is the IC of OOP ?[1 marks]
a. Amitesh Rajput
b. Rajesh Kumar
c. Prateek Narang
d. Amit Dua

Please enter the correction option('a','b','c','d')
d
```

Logging Out:

```
Enter 1 to see your Personal Details
Enter 2 to view Enrolled Courses
Enter 3 to view Marks
Enter 4 to take Active Tests
Enter 5 to view upcoming events
Enter 6 to view important links
Enter 7 to view notices
Enter 8 to view the student list
Enter 9 to log out
9
|
            Thank you for using the portal
```

Signing in as Admin and seeing the MarksList:

```
            Welcome to the Course Management Portal

Press 1 for Student or 2 for Admin
2

Enter 1 to see your Personal Details
Enter 2 to view Course Teaching
Enter 3 to view Student MarksList
Enter 4 to make Tests
Enter 5 to set upcoming events
Enter 6 to set important links
Enter 7 to give notices
Enter 8 to view the student list
Enter 9 to log out
3
Siddarth Todi 2019B2A70991P 3
Hriday Kedia 2019B2A70990P 0
abc def 2020B1AB0991P 0
Hriday 7777 0
Hriday Kedia 2019B2A70964P 8
```

Creating a new Event:

```
HFiuay keuia 2019BZA70904r 8

Enter 1 to see your Personal Details
Enter 2 to view Course Teaching
Enter 3 to view Student MarksList
Enter 4 to make Tests
Enter 5 to set upcoming events
Enter 6 to set important links
Enter 7 to give notices
Enter 8 to view the student list
Enter 9 to log out

5
How many upcoming events, do you want to add
1
Enter the events
Make-Up Exams

Enter 1 to see your Personal Details
Enter 2 to view Course Teaching
Enter 3 to view Student MarksList
```

Also, Below are the UML Class diagrams which will further clarify any doubts:

Person

-name:string
-emailID:string
-password:string
-country:string
-city:string

+Person()

+getName()

+getEmailID()

+getCountry()

+getCity()

Student

-studentID:string
-courseEnrolled:string
-marks:int

+Student()

+getStudentID()

Admin

-facultyID:string
-courseTeaching:string

+Admin()

+getfacultyID()

Service

-studentName:string[ ]
-upcomingEvents(brup):BufferedReader
-ImportantLinks(brimp):BufferedReade
-Notices(brnot):BufferedReade

+displayUpcomingEvents()
+displayImportantLinks()
+viewNotices()
+displayStudentList()

Student Service

+displayCourseEnrolled()
+displayMarks()

Admin Service

+displayCourseTeaching()
+displayMarksList()
+setUpcomingEvents()
+setImportantLink()
+setNotices()

Test

-Questions(br):BufferedReader

+Test()

+answerChecking()

+updateMarks