ITSE201
course project

ITSE201

Online Course Registration System

Section 2

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Problem definition

Recently, most universities moved from face-to-face and phone calls registration to online course registration systems (OCRS). OCRS: It is a software that allows the students to search and register in the courses. It goes way beyond the main registration processes such as payment, adding a course, dropping a course, add to the waiting list. Where it also, allows the instructors to enter the grades and the student's absence. Through OCRS the admin can generate reports such as sending warning letters to the students that are below the minimum GPA "2", Academic Transcript, Course Schedule, Payment reports. And many other services that if they were done manually the cost will be the time and accuracy.

System description

The system from the admin's point of view: It facilitates the admin's access to all the student's information and generate accurate reports. In addition, the admin views it as a solution to reduce the transaction costs.

The system from the staff side: It relieves pressure that was due to the amount of the manual work they used to do, such as registering the courses manually for each student, calculate student's GPA manually, but with OCRS all these tasks are automated.

The system from the student's point of view: It helps the student to register in the courses from the comfort of his home. instead of going to the university to register in a course, drop a course, or print transcript.

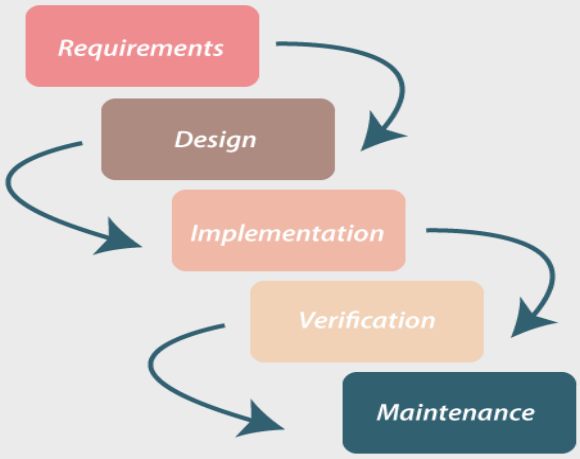
Software Process Model

A structured set of activities required to develop a software system. A software process model is an abstract representation of a process. The process includes activities such as communication, Planning, modelling, construction, and deployment.

For our project, we have chosen waterfall model because of its simplicity, easy to understand, and above all it is good for small projects and there is no complexity in our system.

Software Process model description

The waterfall model is a basic software development life cycle model that uses a sequential development process that runs like a waterfall through all phases of a, with project each step entirely completed before the next one begins. This process model is highly reliant on the front end and follows a chronological procedure with dates, requirements, and objectives. Because the stages do not overlap, each step must be completed before entirely on to going the next.



Definition of a requirement: In this phase, all project needs are examined and documented in a specification document.

1. A feasibility study is then conducted to see whether the requirements are valid.
2. System and software design: This step involves studying the needs that were discovered in phase one and building a system to ascertain the hardware needs of the system.
3. Implementation and unit testing: As the name suggests, this stage involves writing the source code in accordance with the specifications. The physical design requirements are translated into a functional code.
4. Integration and system testing: After each unit is tested, the implementation phase's generated units are all integrated into the system.

Functional requirements

Functional requirements are what function must the system performs. In other words, functional requirements are what the system does and what services does it provide? Functional requirements work to make the system does what is required for the clients and they are implemented by the system's developers. In general, Functional requirements in a software help to know what services the system provides. In our System: the online course registration system. It must provide its users with the following. And if one if the following requirements is not applied that may lead to software failure so we ensured that they are all applied in the best manner.

List of the functional requirements:

1) The student should be able to access to the system in his registration period and without any problems.
2) The student should be able to register for the courses "Add a course" (the total hours must not exceed 19 hours and not less than 12 hours and the system should check if the student already took all the perquisites of the course he registered in).
3) The system should allow the students to drop a course.
4) The system should allow the student to withdraw from a course during the semester.
5) The admin should be able to generate reports such as student's Transcript, payment bills...
6) The admin should be able to increase the number of the seats in each section.
7) The system should allow the student to apply for the re-correction service.
8) The system should allow students postpone their studies for a specific number of semesters.
9) The admin should be able to change the timing of the lectures instantly though the system.
10) The system should provide its users with payment methods so they can pay their fees.
11) The instructors should be able to store and retrieve the information from the system easily.
12) The system should provide the students with Student Major Transfer service.

Non-functional requirements

Unlike functional requirements, Non-functional requirements are used to determine the performance standards and the quality of a software. In addition, non-functional requirements describe how the system does its functions. For instance, a university's online course registration system must handle more than 5,000 users at the same time and without decline in its performance, or the response time must be less than 5 second. In case the system does not meet non-functional requirements, it may continue performing its basic functions; however, the user experience provided by the system will not as expected. For many reasons non-functional requirements are important if not essential to consider as they help software engineers' "developers" to specify the abilities and constraints that are essential for developing high- quality soft-ware. For that, non- functional requirements are as important as the functional requirements. In our Online Course Registration System, we ensured to maintain each non-functional requirement that works to enhance the performance and the quality of the built system.

We ensured that our system applies the following non-functional requirements:

1) **Security**: The system should be secured by using a unique username and password.
2) **Usability**: The system should be easy to use by making interaction between the system's users and interface, e.g., the screen color, buttons size, etc.
3) **Availability**: we ensured that the system will be available stably for a certain time, e.g., during the registration period "a moth before and after the beginning of a semester".
4) **Recoverability**: The system should be able to recover all the data after the system failure. We applied this requirement by using a backup databases and cloud computing.
5) **Performance**: The system should not make the user wait too long to access the system, faces any server-side, or client-side formatting and display delaying. We ensured that our system responses to the user within 3 seconds.
6) **Supportability**(maintainable) – The system be supportable and maintainable throughout its life cycle e.g., adding new function, or expanding an existing function as needed.
7) **Accessibility**: The System should allow access to its users, e.g., Students, teachers, and the stakeholders.
8) **Measurable**: The system should be measured. Our system can process 10 thousand users at the same time without any decline in its performance.
9) **Automatability**: The system should automate every manual task that can be automated. Our system automatically retrieves the data from our server "Databases", or outsources provided by the instructors, admin. and does some calculation automatically and them it stored the processed data in a different fill that is more readable.
10) **Traceability**: The system should be traceable in case it needs maintenance. We ensured that our system is well documented to ease the tracing process.

System components

Brief description about each component

with 10 scenarios and UML use case diagram

Component	Done by
Registration	Hussin Nooh 202106117
Course Maintenance	Haitham Abdullah 202107520
Payments	Sayed Hasan Adnan 20197177
Viewing	Abdulrahman Raed 20197956
Reports	Awab Abulhameid Raed 20185515

Registration:

Registration is a feature that allow each students/employ to create their own unique data inside the system and secure it with a password so no one can access it. An existing student or employ will have to login to access their existing data by using their email address and password. Registering and logging in have many constrains and functional requirements to balance the system.

- Scenario 1

  New student Ahmed tries to register to the system. He enters his email address and choose a password that consist of 6 digits, but the system shows a message "The minimum password length is 8 digits, and it should have at least one number and one letter" Ahmed re-enters the password with the right requirements and the system take him to the main page.

- Scenario 2

  Existing student Mariam tries to log in the system. She enters her email and password correctly and click log in. The System show her an image with 4 digits and asks her to enter the digits to prove that she's not a robot. She does and the system take her to the main page.

- Scenario 3

  Existing Student Hussain wants to log in to the System he enters his email correctly but he can't remember his password so he clicked on "Forgot password" and the system asked for his email address to send a verification code to reset the password.

- Scenario 4

  Hussain tried to login with wrong email address. The system shows a message "The email address you enter doesn't exist" So he rewrote his email correctly and logged in.

- Scenario 5

  Sarah tried to login to the system she entered her information but before she clicks log in her internet connect disconnected. The system showed a message "You have no internet connection"

- Scenario 6

  Employee Asma wants to register to the System. She entered her email address and picked a password, but the system showed a message "email is already in use"

- Scenario 7

  Employee Rita wants to login to the System. But she can't remember her password, so she clicked use-one time code. The system sends a verification code to her email, and she uses it to access the system.

- Scenario 8

  Student Sameer wants to login to the system he enters his information, but the system shows a message "you can't access the system at this time"

- Scenario 9

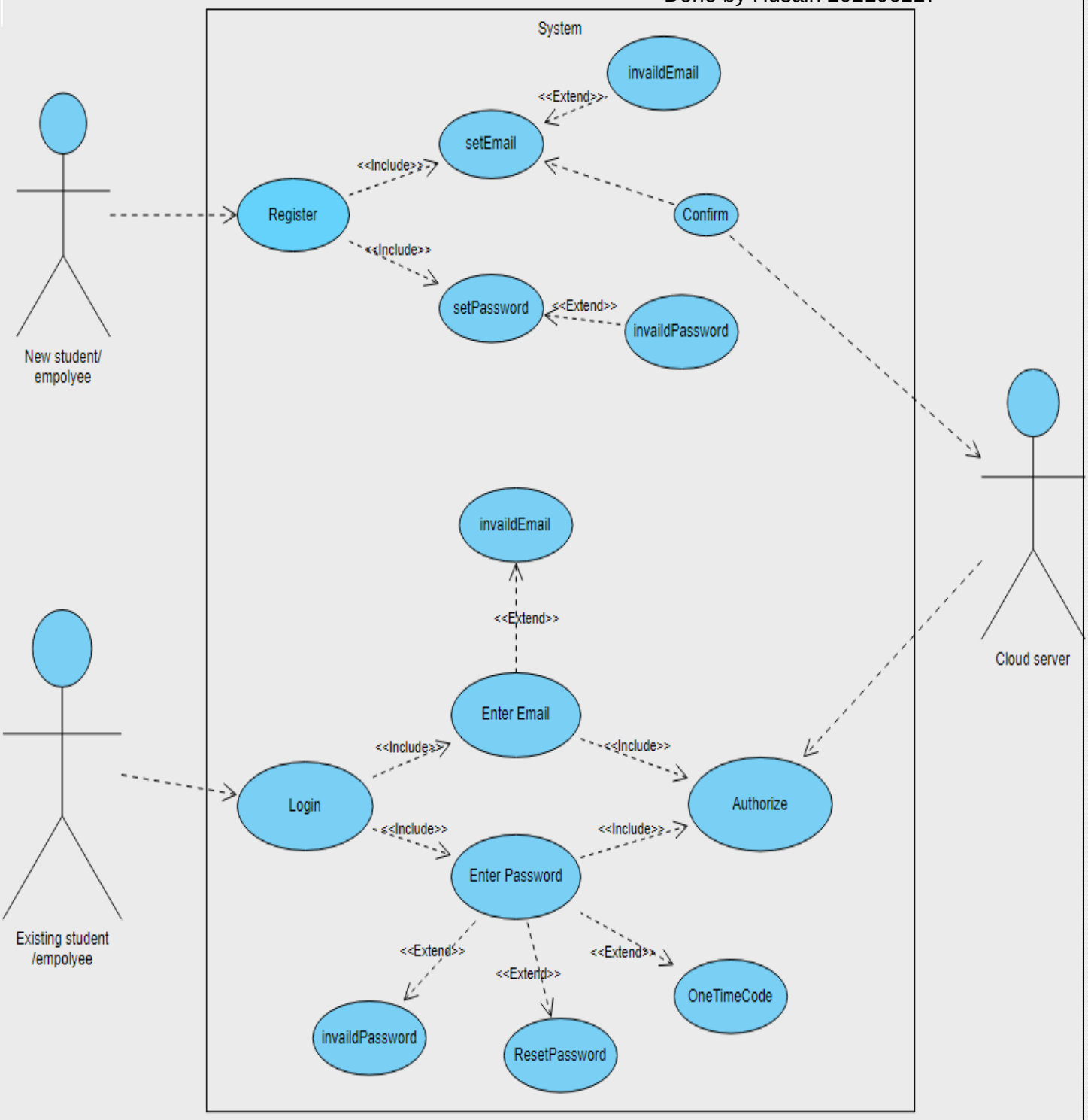
  Student Ali wants to login; he enters his information, and the system asks him to verify that he is not a robot, but Ali can't recognize the digits on the given image, so he clicks on "request new image" and the system shows new image

- Scenario 10

  Eman wants to login to the system, she enters her email address and password, The system shows a message "You are out of registration period".

Registration UML use case diagram

Done by Husain 202106117



Course Maintenance:

Since our system is an online registration system an important component to be considered would be course maintenance. Course maintenance component will take care of everything related to the courses.

This component is used when a user wants to perform any process related to the courses. An order will be received from the user, then it will be processed by the system, after that the result will be sent to the user. For example, if the user wants to add a course, he/ she must choose the course to be added, then the system will check If the user can be registered to the required course or not. If yes, the system will register him/her in the course and that will be stored in the database.

Scenarios:

Scenario 01:

- Ali wants to register in ENGL155 course. He selected the course, but when he pressed on the add button the system generated a message telling Ali that he cannot take this course because he did not finish the perquisite ENGL154.

Scenario 02:

- Noor wanted to register in ITCS144, after she selected the course, she pressed on the add button. Then the system generated a message "You are Enrolled in the course successfully".

Scenario 03:

- Ali tried to register in a course. He selected the course, but when he pressed on the add button the system generated a message "You exceed the maximum number of hours that you can register".

Scenario 04:

- In the middle of the semester, Fatima decided to drop a course, so she logged into the online registration system. she pressed on the drop button; the System generated a message "The course is dropped. NO Fees will be returned".

Scenario 05:

- After a few weeks form the start of a semester, Mohammed decided to drop a course, so he logged into the system. After he pressed on the drop button the system generated a message "The course is dropped. Fees will be returned"

Scenario 06:

- Jassem wanted to register in a course. He logged into the system, and he selected the desired course but before conforming his selection by pressing on the add button for unknown reasons he pressed on the cancel button instead, so the system returned him back to the main page of registration and the course was not added.

Scenario 07:

- Talal wanted to replace ITCS214 with ITSE201, so he logged into the system. Then, he pressed on course registration. The system took him to the page of registration. After that he pressed on the replace option appearing next to the course that he wants to replace. A drop menu containing the course that he can register in was shown to Talal. he chose ITSE201 and pressed on the confirm button. Finally, the system generated a message "ITCS214 is replaced by ITSE201."

Scenario 08:

- Noor registered on 5 courses, but she did not pay her fees within the registration period, so the system canceled her Enrollment in all of the courses.

Scenario 09:

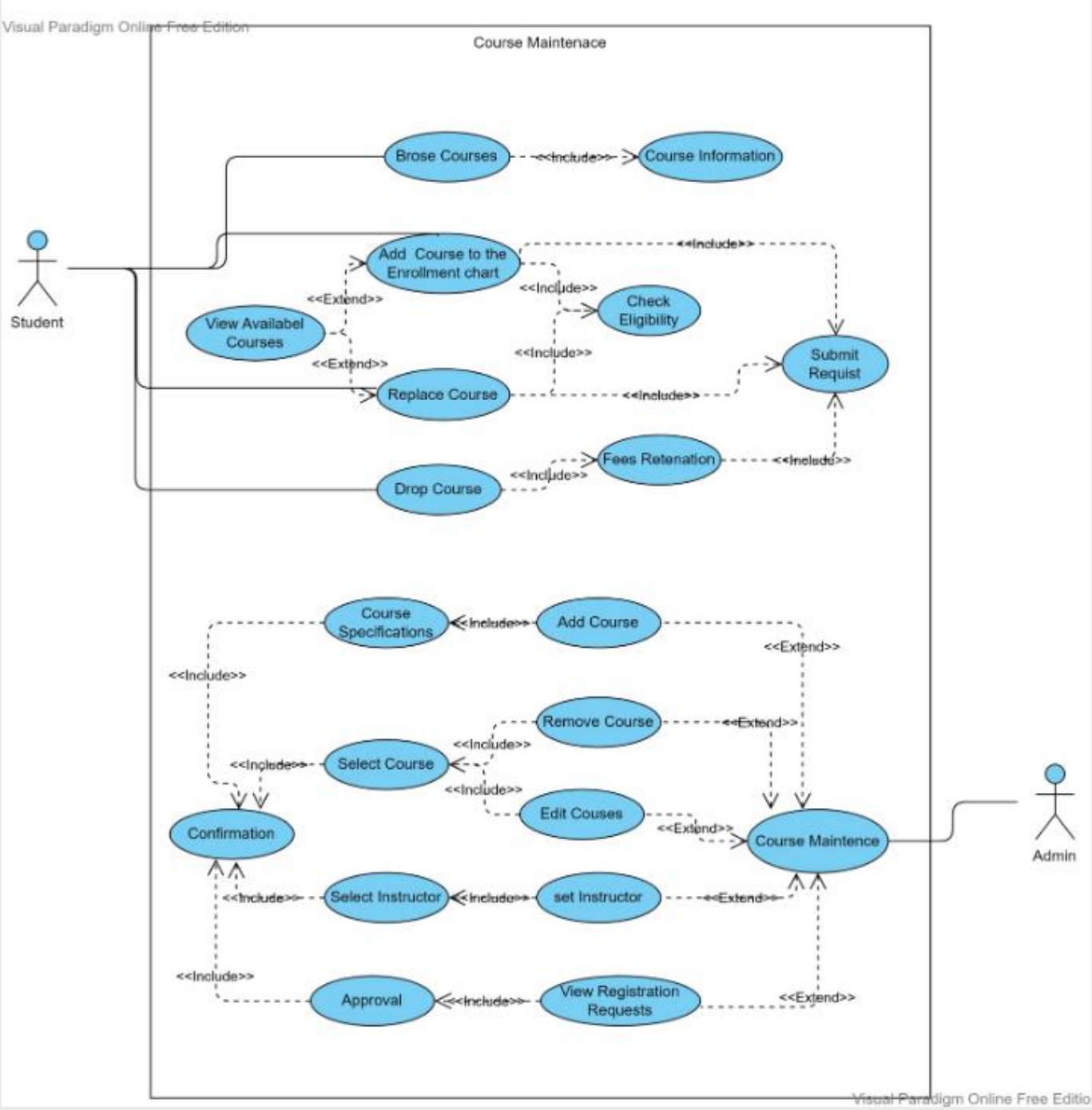
- The admin of the system wanted to add a new course to the database of the system, so they logged into the system, and they pressed on the course registration, then they pressed on add course button a form was shown this form contains the course specifications. So, the admin fills it out and pressed on confirm the system took the information form the form and stored then in the database.

Scenario 10:

- The admin wants to give the course ITSE201 to Dr. Taher. So, they logged into the system and went to the course registration. They pressed on the Set instructor option the system showed all the courses the admin selected ITSE201. After that the system showed all the instructors that are eligible to teach this course and the admin chose Dr. Taher. Finally, after pressing on the confirm button; the system generated a message "Dr. Taher is set to teach ITSE201".

Course Maintenance UML use case diagram

Done by Haitham 202107520



Payments + refunds:

It is a tool that gives the student the advantage of electronic payment and greatly facilitates this process for the student so that he is not forced to go and pay manually, no matter that it will be more than one method available and the person chooses the most appropriate method for him.

- Scenario 1

  The student Ali decided to pay the university registration fees through SADAD and he succeeded in paying without facing any problems.

- Scenario 2

  The student Fatima decided to pay the university registration fees through the bank card and sent an OTP message to her mobile phone and entered the number in a correct way and she succeeded in paying without facing any problems.

- Scenario 3

  The student, Maryam, decided to pay the university registration fees through the bank card and sent an OTP message to her mobile phone, but she entered the number incorrectly and she did not succeed in the payment, and a message appeared to her "the number you entered is incorrect."

- Scenario 4

  The student Sarah decided to pay the university registration fees through the bank card, but she entered the card number incorrectly, and she was unable to continue paying, and a message appeared to her that the card was incorrect.

- Scenario 5

  The student Ahmed decided to pay the university registration fees through the bank card, and when he entered all the card information, his internet was cut off and an error message appeared.

- ## Scenario 6

  The student Qasim decided to pay the university registration fees through the bank card, and when he entered all the card information and then entered the OTP correctly, he discovered that he did not have enough money in his bank card to complete the payment, so a message appeared to him that there is a problem with the payment, try again later.

- ## Scenario 7

  reham wants to pay the university registration fees, she enters her email address and password, and she go to payment and The system shows a message "You are out of payment period".

- ## Scenario 8

  The student Muhammad decided to pay the university registration fees through the bank card, and when he entered all the card information and an OTP message was sent to him, his phone was not near him so that he could see the message, so he could not complete the payment process completely.

- ## Scenario 9

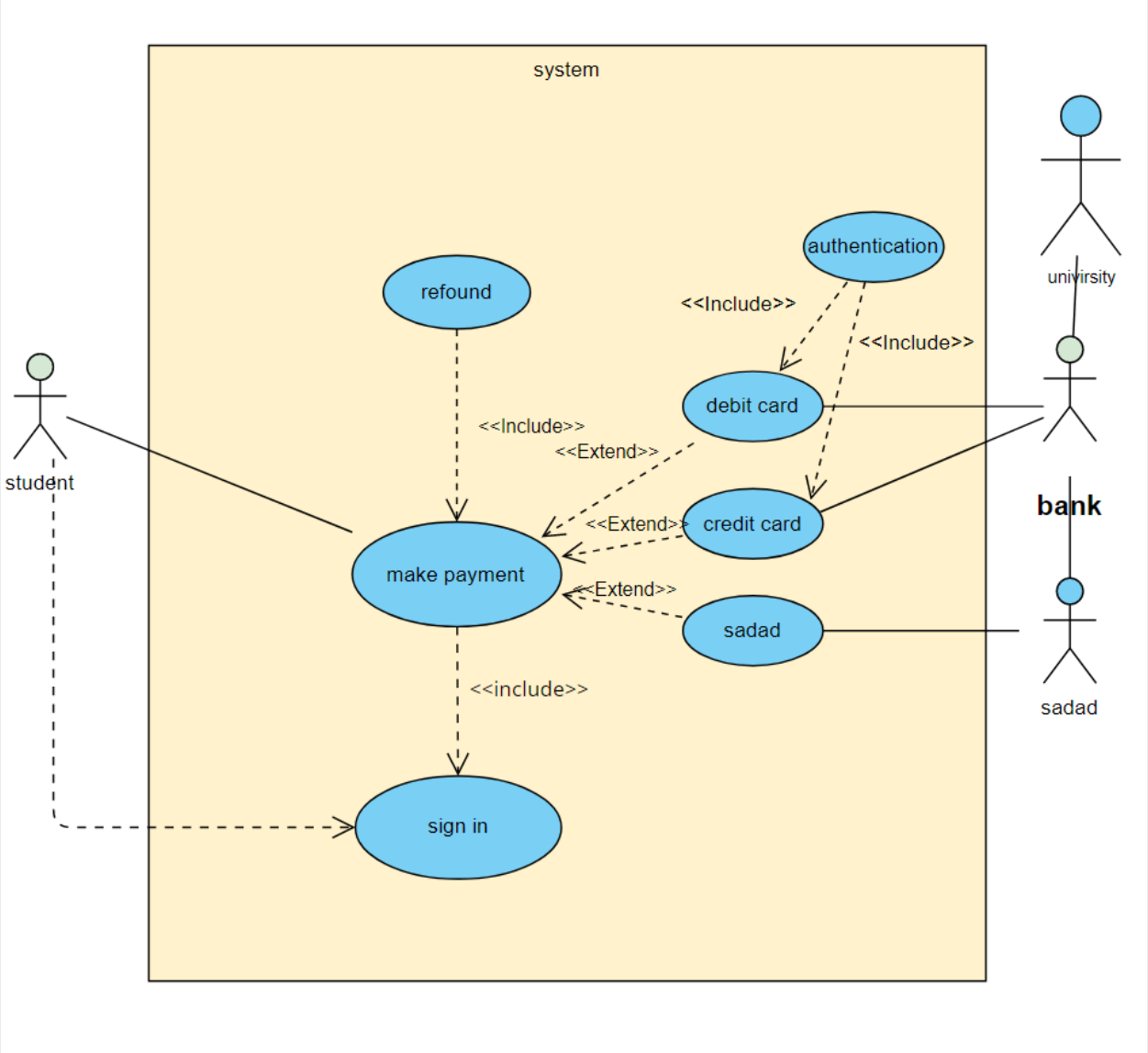
  After the student Hamad completed all the payments to the university, he decided that he would withdraw from the class and fully recover his money before the withdrawal period expired. He submitted an application and was accepted, so he was able to recover his money.

- ## Scenario 10

  The student Majed decided to make a refund for his money, and when he applied, an error message appeared to him because he did not complete the payment process from asking to be able to get his money back.

Payments + refunds UML use case diagram

Done by Sayed Hasan 20197177



Viewing or help services

This service provides many services for the student to help him. It shows the student's study plan, such as compulsory and elective subjects, etc. It also shows the student's information such as name, academic rate, and address, and there is also another service such as updating contact information from address, phone number, and others.

- Scenario 1

  The student lost his contact number, so he updates the contact number and changes it through the data update service.

- Scenario 2

  A student who has transferred a major and does not know what his study plan and arrangement are.

- Scenario 3

  A student facing academic problems wants help from her academic advisor and does not know who he is, so she is looking for information about her academic.

- Scenario 4

  A student who has failed a course and wants to find out whether he is offered an academic warning or not.

- Scenario 5

  For a student who wants to remember the previous payments, if he has a remainder of the previous payments, then the old payments are recorded for him.

- Scenario 6

  A student who has completed three years of his major and wants to know whether there is a sub-specialty of his major that he must complete to graduate or not.

- Scenario 7

  A student who wants to start his graduation project, but there is a condition that he must have completed 85 hours of study and wants to know how many hours he has already passed.

- Scenario 8

  The student Ali has become less than 2 GBA and does not know whether he was subjected to official expulsion or only an academic warning.

- Scenario 9

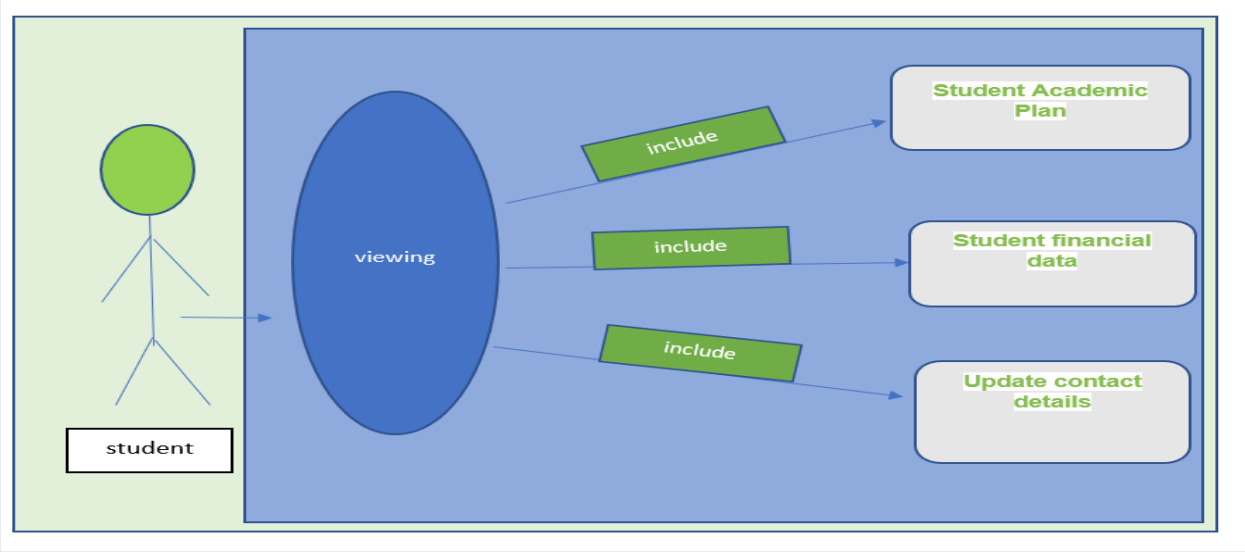
  The student who could not graduate because he did not see the success conditions specified for the major because he did not read the required study plan

- Scenario 10

  A student submits a request to review his grade in a final exam and his grade has increased, and he wants to see his specialized average, in particular, whether it has increased or not.

Viewing UML use case diagram

Done by ABDULRAHMAN 20197956



Report and schedule:

The students can view all of their report from the past semesters, the students also able to view their schedule and modify it by adding or removing courses.

- Scenario 1: Mohammed wants to view his schedule. He signed in with his student email and password. After signing in multiple options were available. Mohammed clicked on the schedule icon. A new page popped up showing his schedule.

- Scenario 2: Ali wanted to view his schedule. He signed in using his student email and password. Ali clicked on the schedule icon. Ali's internet connection was bad. A new page popped up. The new page took a lot of time to load the schedule.

- Scenario 3: Ahmed wanted to view his schedule. Ahmed signed in using his student email and password. Ahmed clicked on the schedule icon. There was an issue with the servers. A new page popped up. The page was empty.

- Scenario 4: Abdulla wanted to view his schedule. Abdulla signed in using his student email and password. Abdulla clicked on the schedule icon. Abdulla's schedule is yet to be released. A new page popped up. The page said "Schedules are yet to be released".

- Scenario 5: Jassim wanted to view his schedule to change sections. Jassim signed in using his student email and password. Jassim clicked on the schedule icon. A new page popped up with the schedule. Jassim clicked on replace and changed the section.

- Scenario 6: Khalifa wanted to view his schedule to add a course. Khalifa signed in using his student email and password. Khalifa clicked on the schedule icon. Khalifa clicked on add course. Khalifa chose a new course and clicked on add. A message popped up saying "Course added successfully."

- Scenario 7: Khaled wanted to view his schedule to remove a course. Khaled signed in using his student email and password. Khaled clicked on the schedule icon. A new page popped up showing his schedule. Khaled clicked on the remove icon next to the subject. A message popped up saying "Course removed successfully."

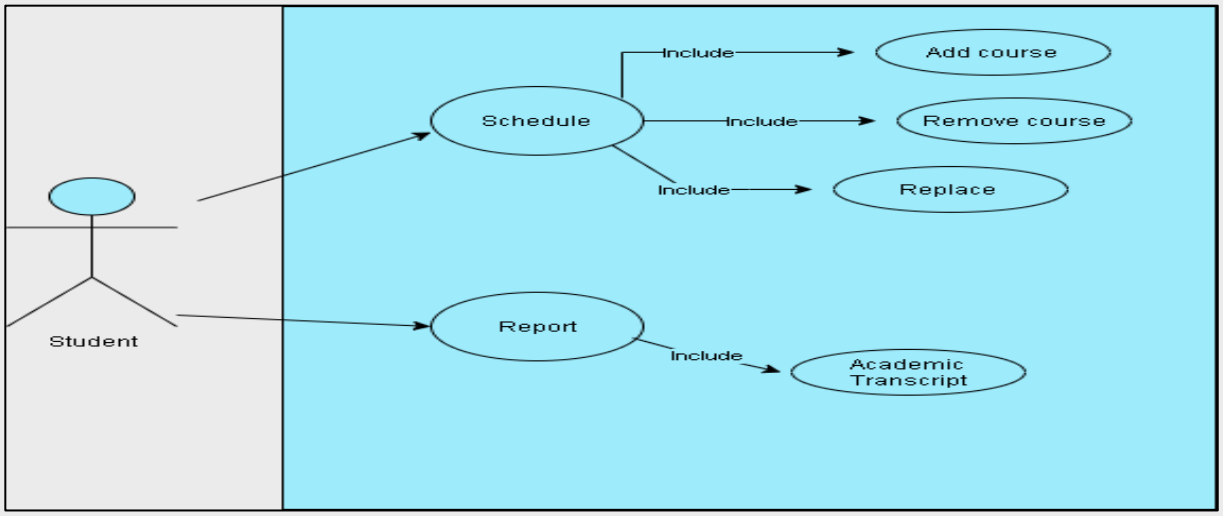
- Scenario 8: Talal wanted to view his transcript. Talal signed in using his student email and password. Talal clicked on the report icon. There was an issue with the servers. A new page popped up. The page was empty.

- Scenario 9: Hamad wanted to view his Transcript. Hamad signed in using his student email and password. Hamad clicked on the Report icon. Hamad's Transcript is yet to be released. A new page popped up. The page said "Transcript is not available yet".

- Scenario 10: Fares wants to view his Transcript. Fares signed in with his student email and password. After signing in multiple options were available. Fares clicked on the Report icon. A new page popped up showing his Transcript.

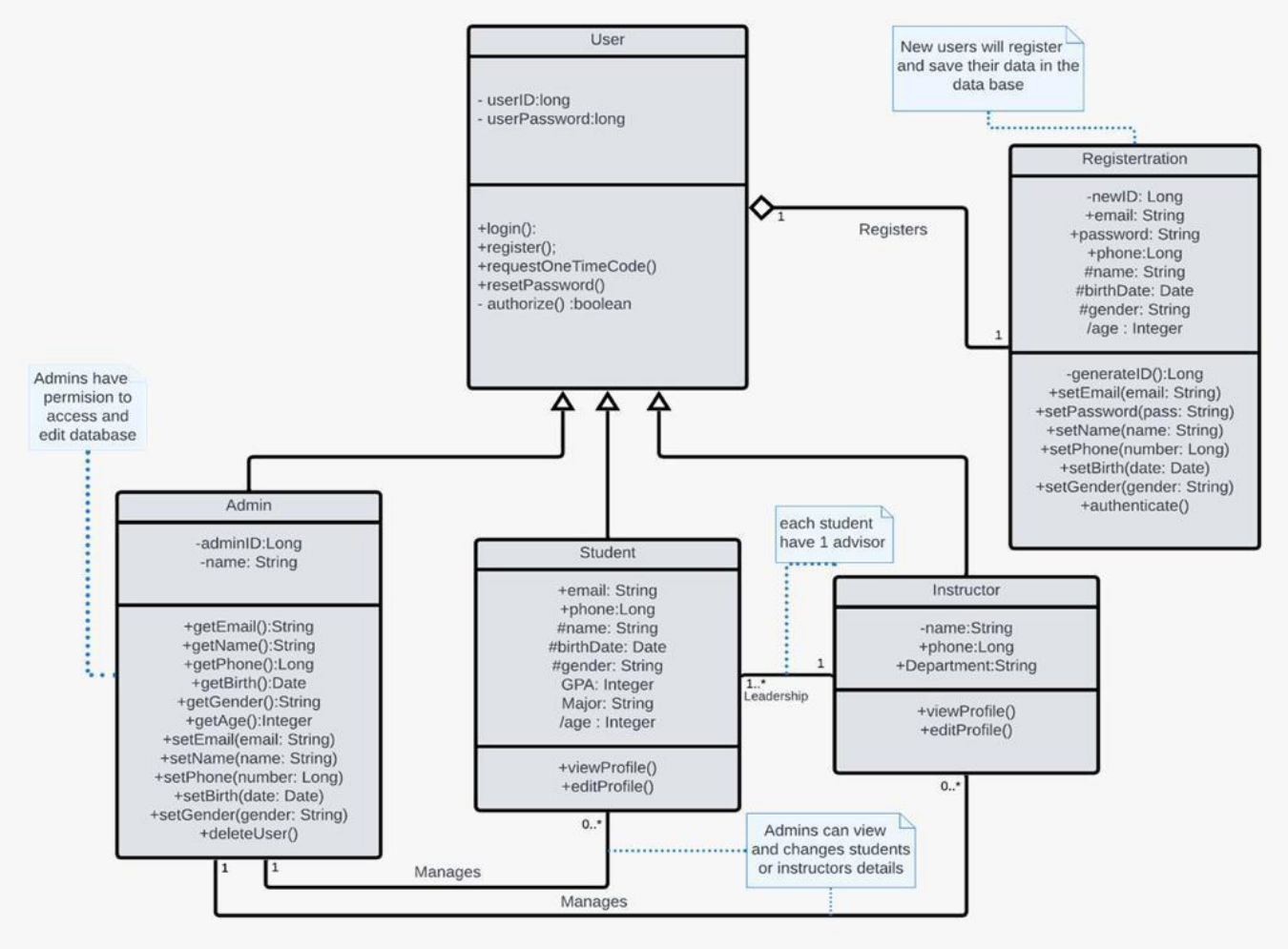
UML Use Case Diagram

Done by Awab Abdulhameid **20185515**



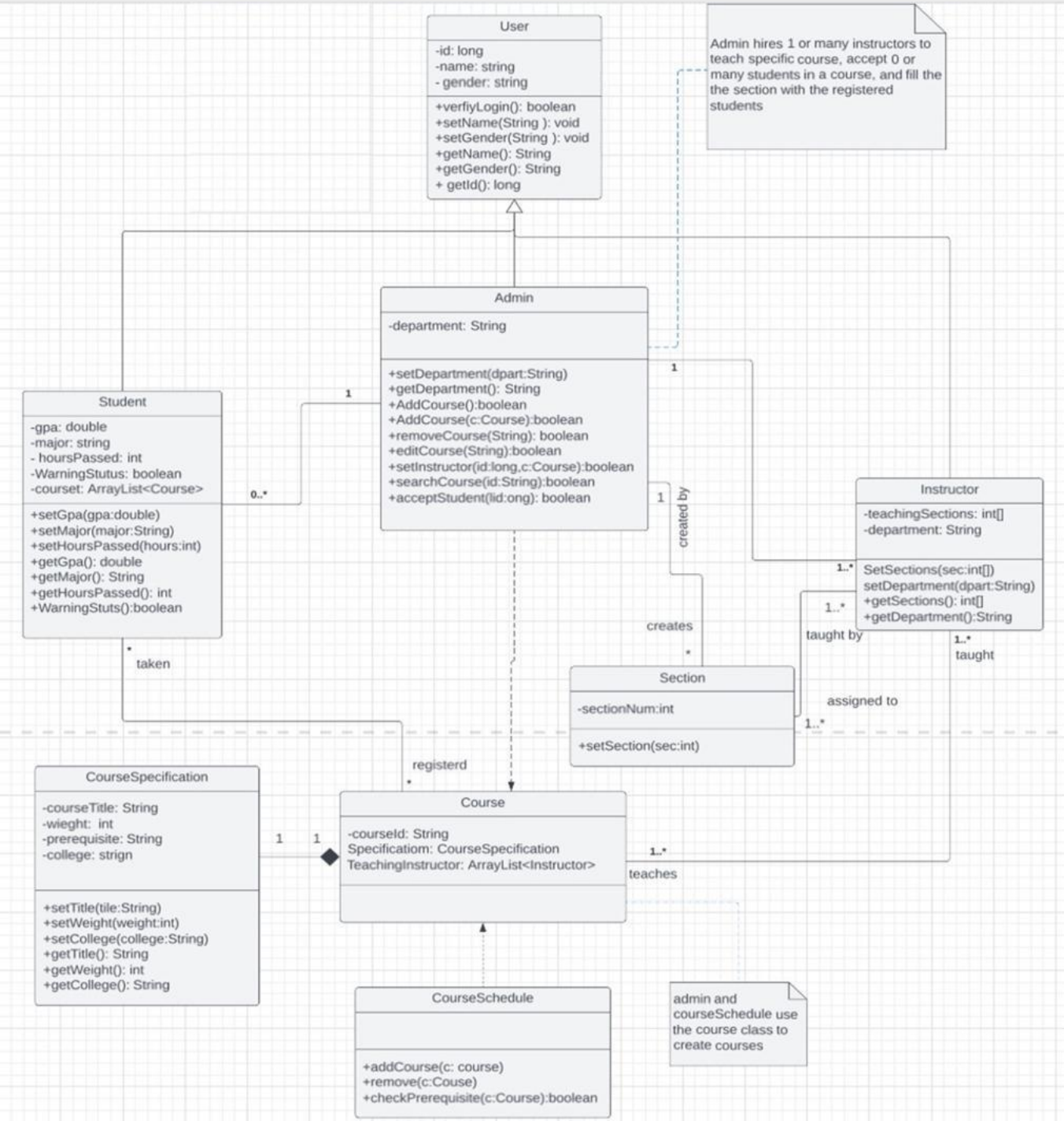
Class Diagram

Class Diagram for registration system

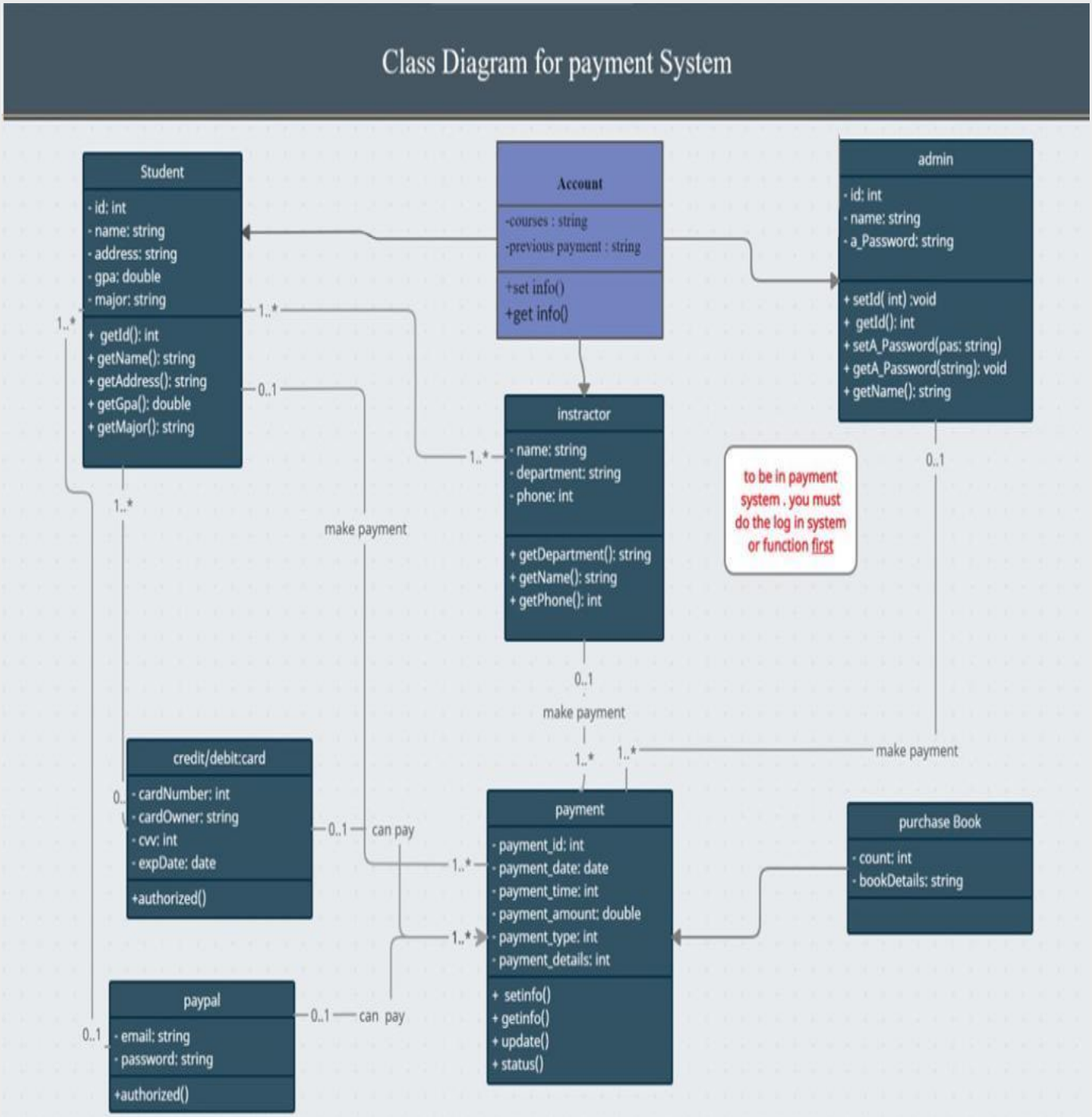


The Above diagram was done by 202106117 HUSAIN ALI AHMED NOOH

Class Diagram for Course Maintenance Component



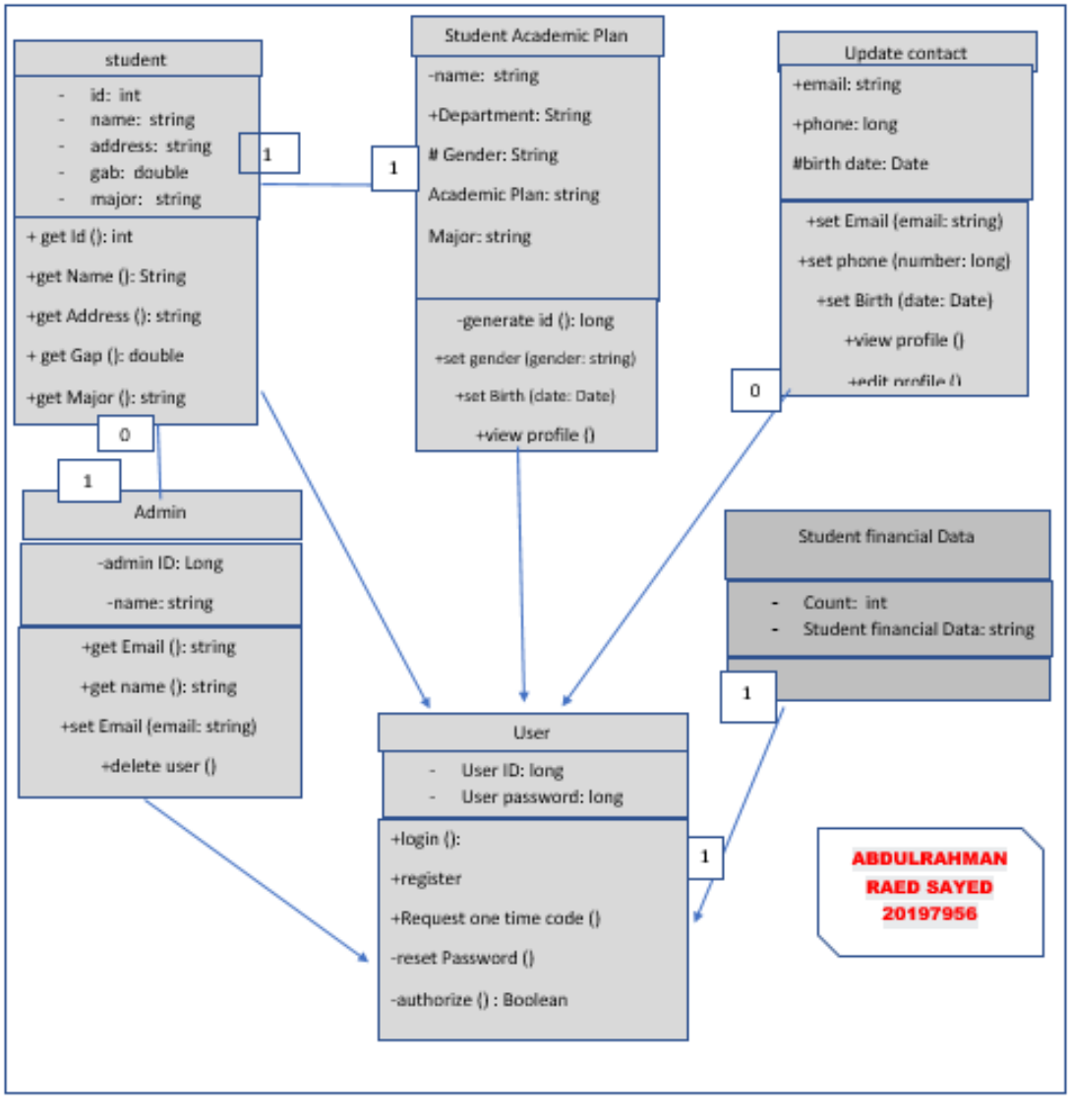
The Above diagram was done by 202107520 Haitham Abdullah Taher



The Above diagram was done by 20197177 **SAYED HASAN ADNAN HAMEED AHMED**

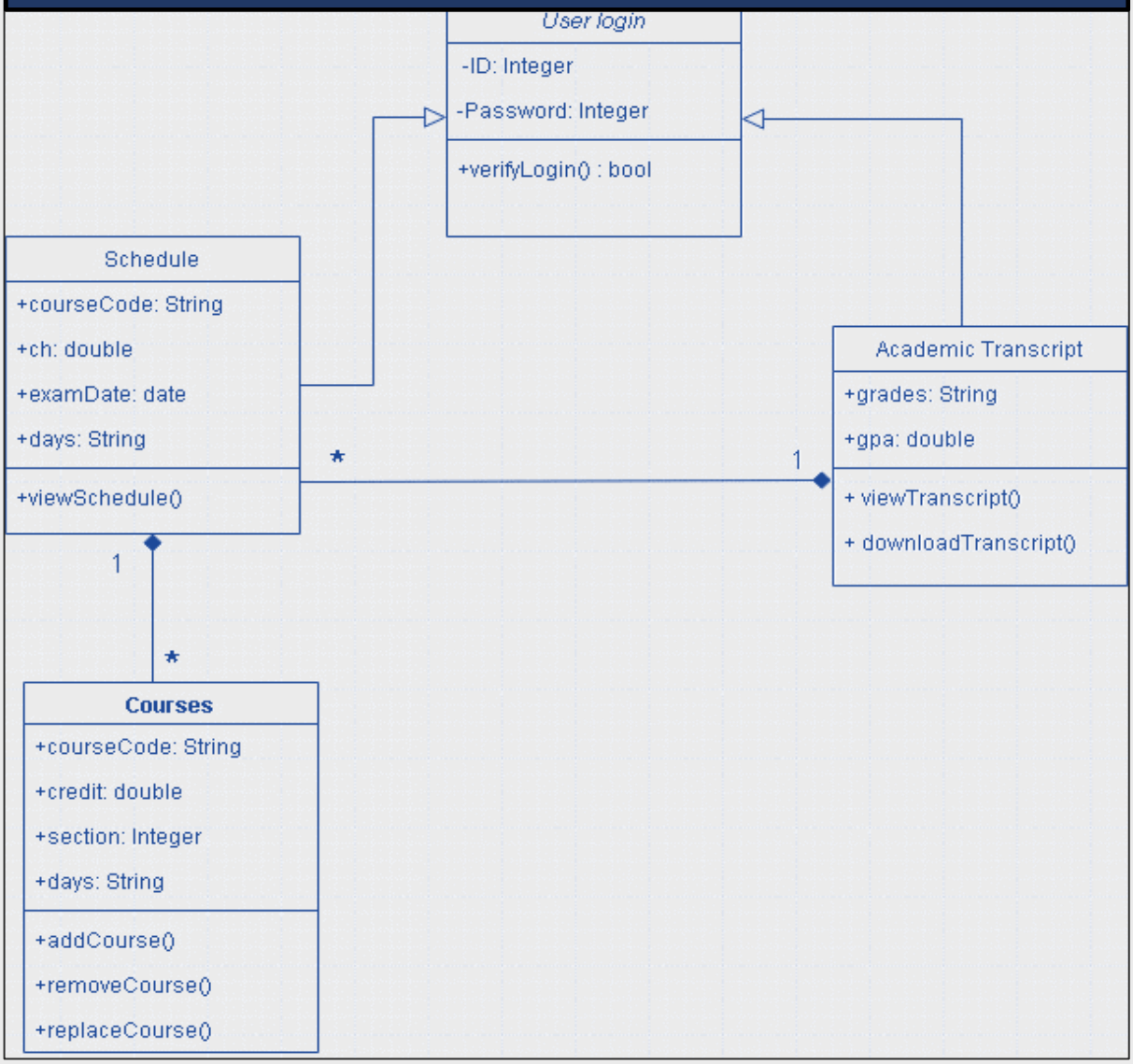
Done by ABDULRAHMAN 20197956

Class Diagram for Viewing



Done by Awab Abdulhameid**20185515**

Class Diagram for Report and schedule



University Of Bahrain

College Of Information Technology
ITSE201
2022/2023

Online Registration System Interfaces

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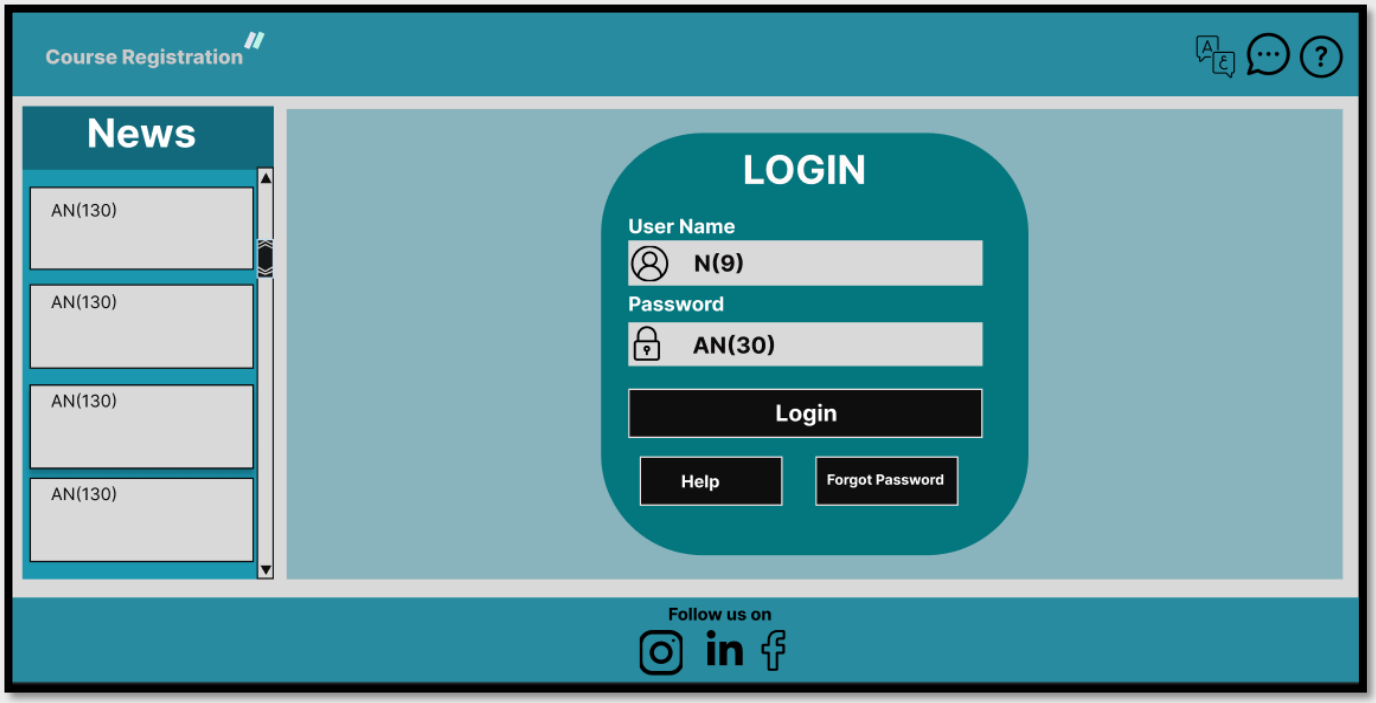
- **Login Interface**



Testing Scenarios:

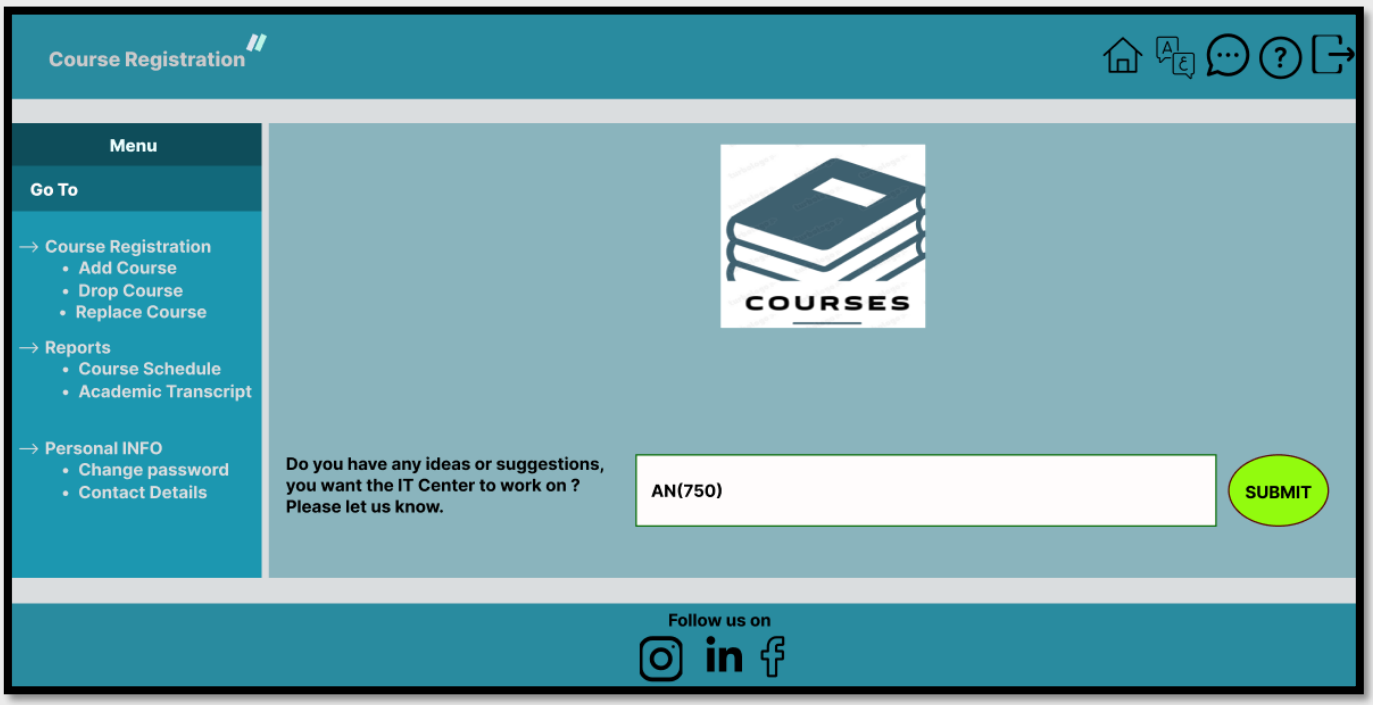
1- **Testing correct username and wrong password**: The user tried to log into the system he entered the username correctly but the password he entered was wrong, so the system generated "The username or password is not valid".

2- **Testing wrong username**. The user tried to log into the system he entered his username and password, but the username was not found in the system "Wrong username", so the system generated "The username or password is not valid".

3- **Testing wrong username and password:** The user tried to log into the system he entered his username and password wrongly, so the system generated "The username or password is not valid".

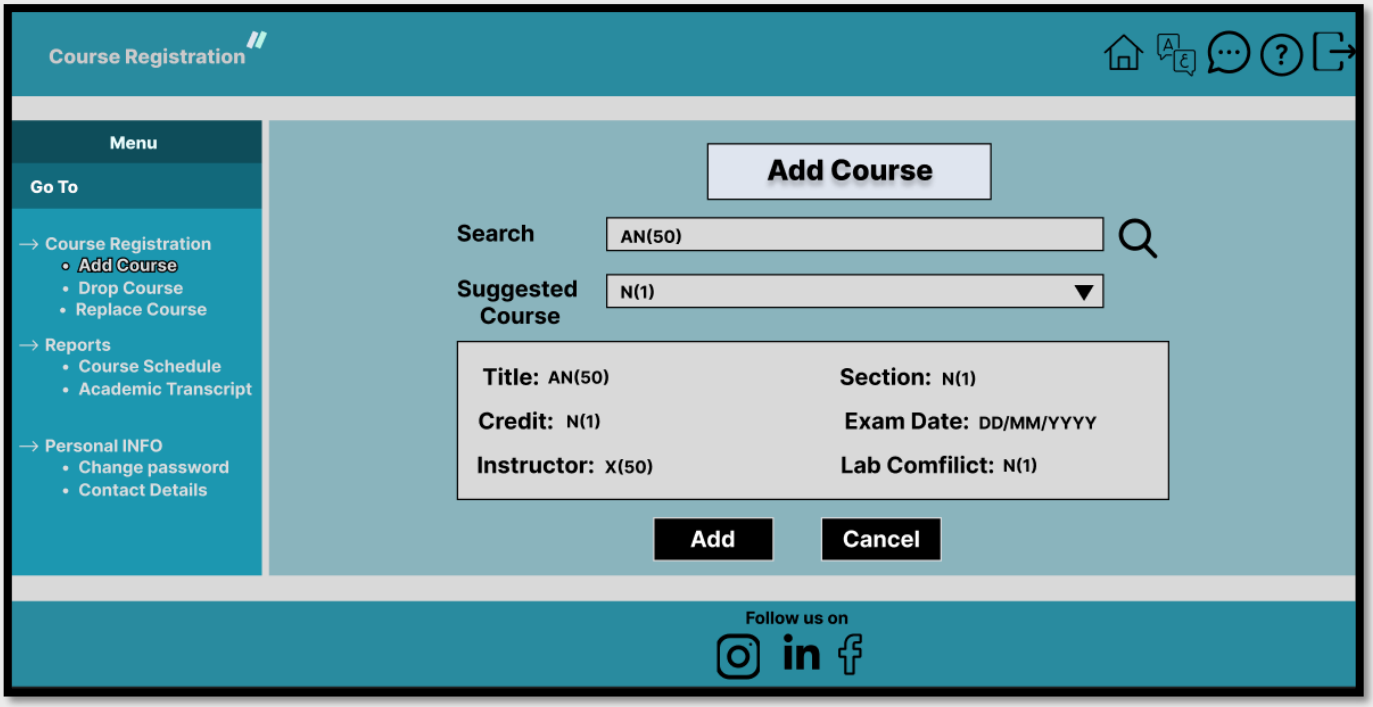
4- **Testing correct username and password:** The user tried to log into the system he entered his username and password correctly, so the system took him to the Homepage.

- **Homepage Interface**



Note: using this page the user can navigate through the system.

- **Add Course Interface**



Testing Scenarios:

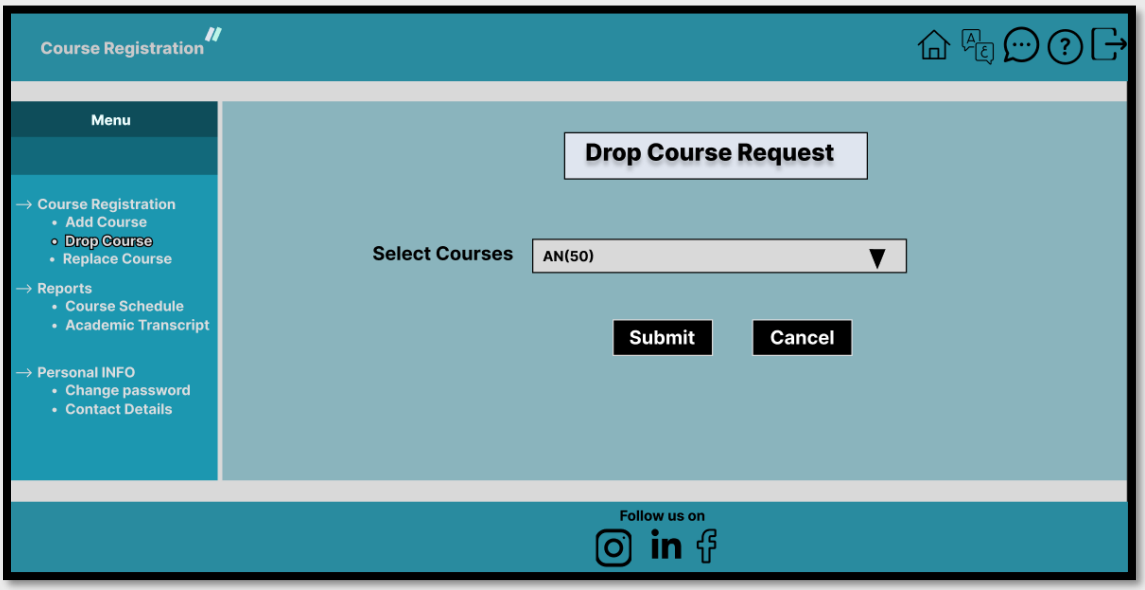
1- **Testing whether the system will reject a registration of a course with untaken perquisite or not**. We test to register MATH102 course, when MATH101 is not taken yet. So, when we pressed on the add button the system generated a message "Sorry cannot be registered because you did not finish all the perquisite of MATH102"

2- **Testing if all the constrains are satisfies** that will result in enrolling in the selected course. So, we test to register in ITSE201, after selecting the course, we pressed on the add button. Then the system generated a message "You are Enrolled in the course successfully".

3- **Testing if a user tried to to register in a course when he/she has reached to the maximum number of hours**. We selected a course while number of hours registered is 19 hours, so when we pressed on the add button the system generated a message "You exceed the maximum number of hours that you can register".

4- **Testing whether the if the cancel button works**: We selected ENGL154 course, after everything was set, we press on the Cancel button, so the system generated a message "The registration process has been canceled"

- **Drop Course Interface**



Testing Scenarios:

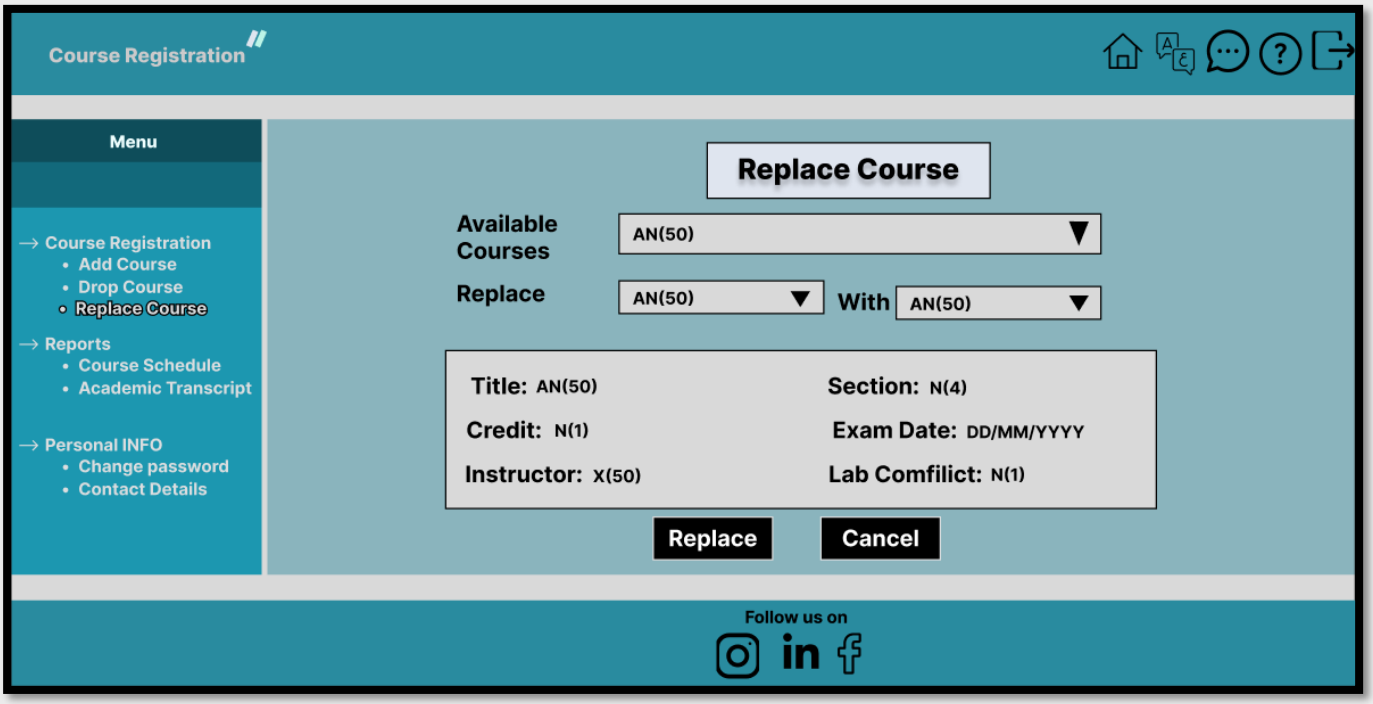
1- **Testing if an attempt to drop a course is done during the refund " dropping period" duration:** We logged into the system and registered in15 hours, then we selected one of the courses to be dropped, after that, we pressed on the drop button the system generated a message "The course is dropped. Fees will be returned"

2- **Testing whether the system will accept dropping a course if that lead to less than the minimum number,** we tried to drop a course when the registered hours is 12. So, we selected the course to be dropped. After that we pressed on the drop button the system generated a message "You cannot have a schedule with less than 12 hours, drop process Failed."

3- **Testing if an attempt to drop a course is done after the dropping deadline**: We selected the course to be dropped, then we pressed in the drop button and the system generated a message "Sorry, the course cannot be dropped dropping period finished."

4- **Testing if an attempt to drop a course is done after the refund" dropping period" duration:** We logged into the system and while registering in 16 hours, then we selected courses to be dropped, after that, we pressed on the drop button the system generated a message "The course is dropped. No Fees will be returned"

- **Replace Course Interface**



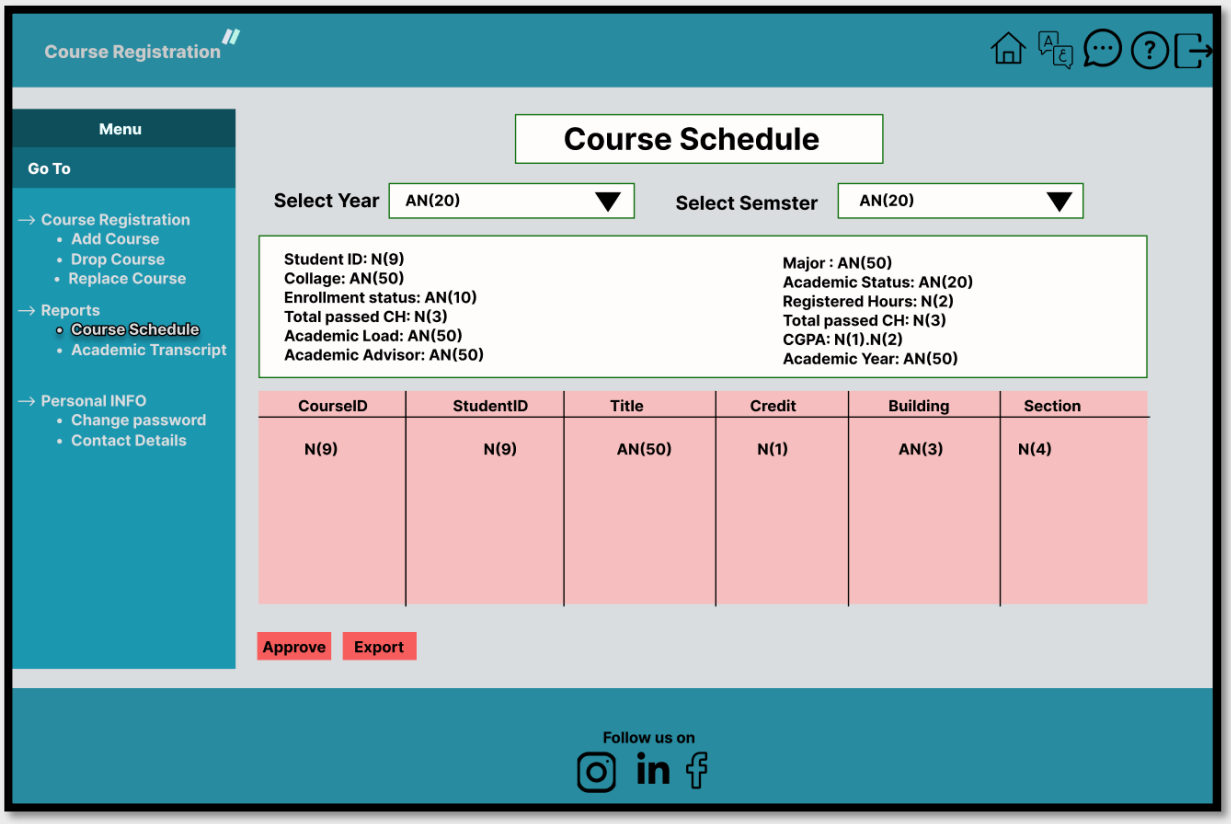
Testing Scenarios:

1- **Testing to replace a course we all the constrains requited are satisfied**. We logged into the system, and we selected the course to be replaced and the replacement course "X is replaced with Y."

2- **Testing to replace After the registration period** "We logged into the system and then we selected the course to pe replaced and the replacement course, after that we pressed on the replace button. The system generated:" Sorry, you can't replace a course because the registration period Finished."

Note: All test cases that has been tested in Add Course Must be tested in Replace Course

- **Course Schedule Interface**



Testing Scenarios:

1- **Testing to view course schedule during the semester:** We performed all the requirements to view a course schedule "year, semester", successfully. Then, the system retrieved the data assigned to that specific period and showed it on the screen.

2- **Testing to view course schedule that's not assigned with data**, so we logged into the system. We selected a year and a semester without in it (wrong year/semester). The system generated a message "No data registered in this semester".

Next page shows the report preview:

Course Schedule Report example

University of Bahrain

Student Registration Schedule

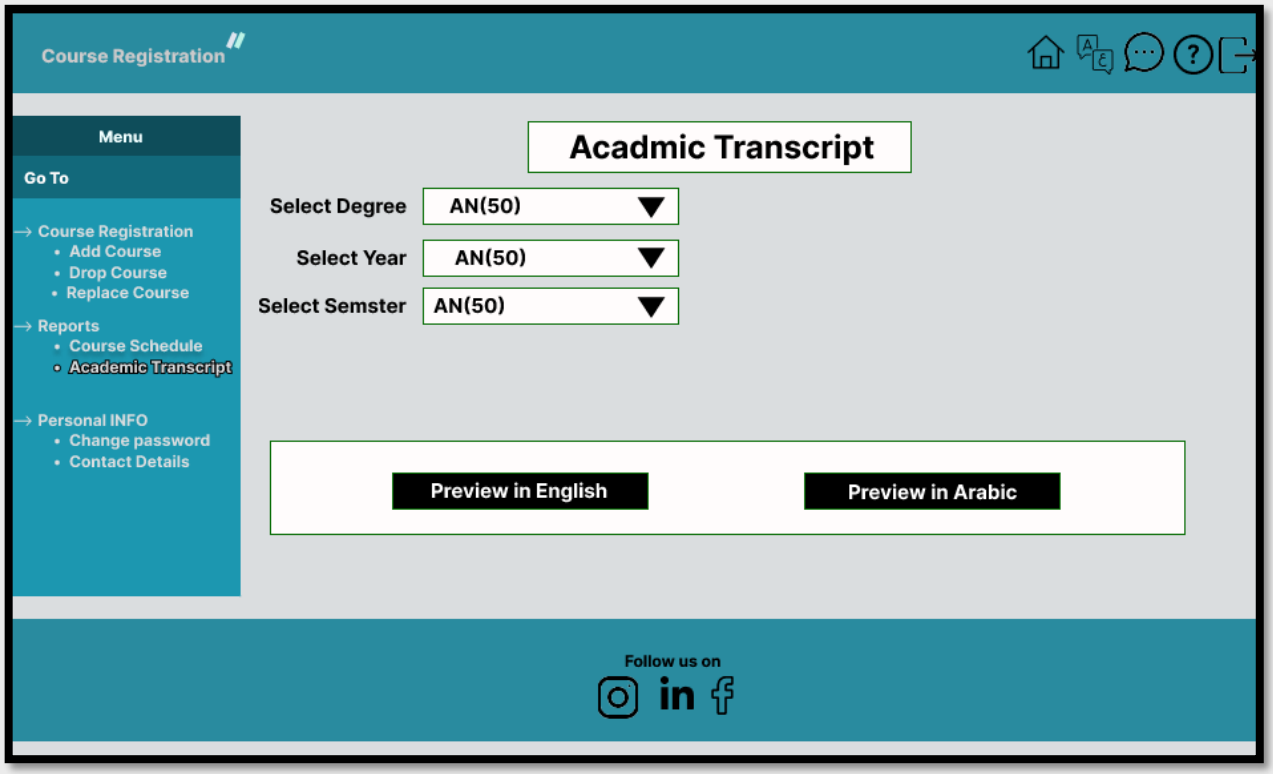
Deanship Of Admission and Registration

Student N0.	202106117		
College	College of Information Technology	Major	B.Sc. in Software Engineering
Enrollment Status	Enrolled	Academic Status	Excellence
Total Passed CH	40.00	Registered CH	16.0
Academic Load	Min 12.000 Max CH 19.000	CGPA	3.99
Academic Advisor	Dr. Faisal Qaseem Khaleel Alkhateeb	Sponsor	

CourseID	Exam Date	Title	Credit	Building	Section
BIOLS102	1/22/2023	GENERAL BIOLOGY	4	S41	1103
ENGL219	1/16/2023	TECHNICAL REPORT WRITING	3	S40	2050
ITCS214	1/19/2023	DATA STRUCTURES	3	S40	2046
STAT273	1/9/2023	PROBABILITY AND STATISTICS	3	S41	1102

Printed on 12/31/2002

- **Academic Transcript**



Testing Scenarios:

1- **Testing to view the Degree-Transcript before graduation:** So, we logged into the system and did all the requirements to view Transcript. The system generated "No data found".

2- **Testing to view the Degree-Transcript after graduation:** So, we logged into the system and did all the requirements to view Transcript, successfully. The system displayed the Transcript with options to switch between Arabic and English.

3- **Testing to view a finished Semester-Transcript**. So, we logged into the system and selected the year and the semester. Then the system displayed. The system displayed the Transcript with options to switch between Arabic and English.

4- **Testing to view unfinished Semester-Transcript**. So, we logged into the system and selected the year and the semester, the system generated "No data found".

Academic Transcript Report example

University of Bahrain

College of Information Technology

Student

Academic Transcript

Student Number: 202106117 **Date of Admission:** First 2021/2022

Student Name: HUSAIN ALI AHMED NOOH / حسين علي احمد نوح

Academic Advisor: Dr. Faisal Qaseem Khaleel Alkhateeb

2021/2022 First Semester

B.Sc. in Software Engineering - 2017

CourseID	Title	Credit	Grade
BIOLS102	GENERAL BIOLOGY	4	A
ENGL219	TECHNICAL REPORT WRITING	3	A
ITCS214	DATA STRUCTURES	3	A
STAT273	PROBABILITY AND STA-TISTICS	3	A

Semester Cr. Attended:	16	Passed:	16	SGPA:	4
Cumulative Cr. Attended:	16	Passed:	16	CGPA:	4
MCGPA:	4.00	IGPA:	0.00		

Enrolled

Printed on 12/31/2022

- **Contact Details Interface**

Testing Scenarios:

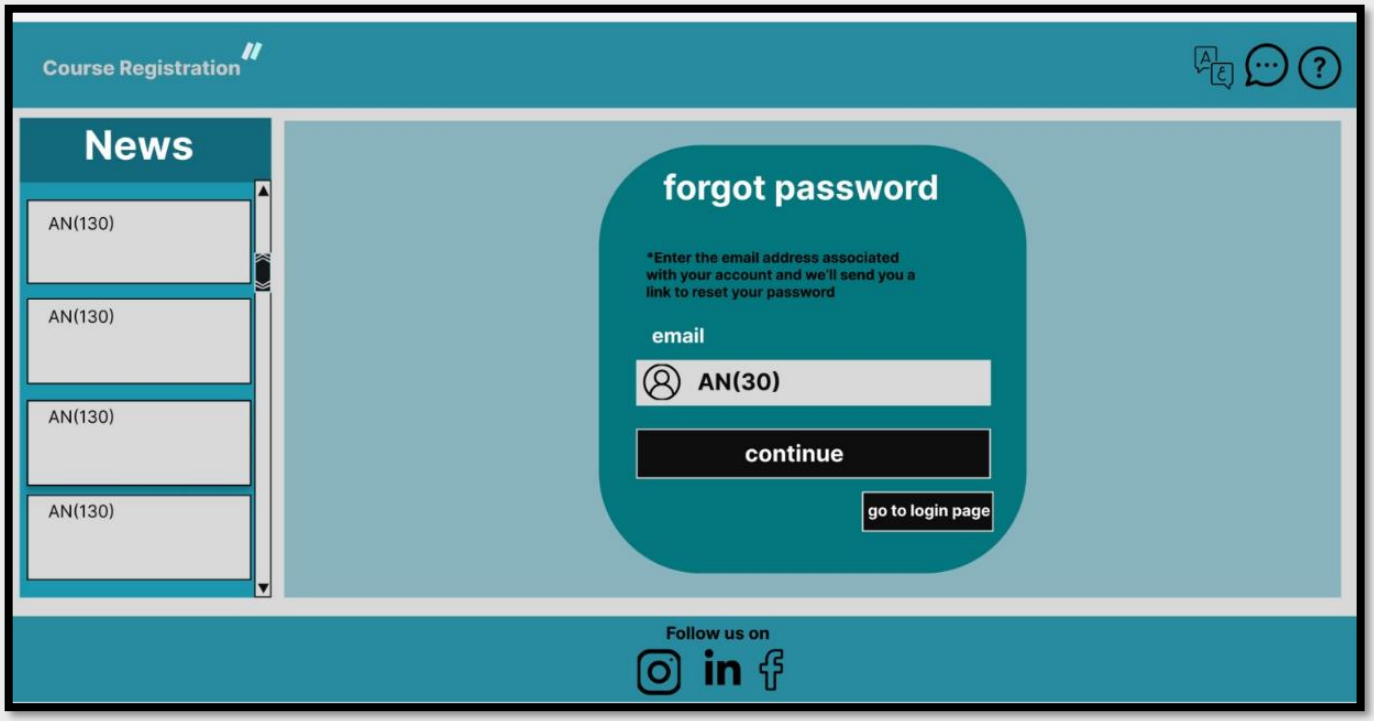
1- **Testing to check the verification Code:** So, we logged into the system and did all the requirements to change contact details, but we entered wrong verification code. The system generated "Failed to verify".

2- **Testing to check the SMS Mobile number:** So, we logged into the system and did all the requirements to change contact details, but we entered wrong 10 digits number. The system generated "Data is incorrect".

3- **Testing to check the Email:** So, we logged into the system and did all the requirements to change contact details, but we entered wrong email address. The system generated "Data is incorrect".

4- **Testing to check if everything works fine:** So, we logged into the system and did all the requirements to change contact details by entering correct input. The system generated "Changed successfully".

- **Forgot Password**

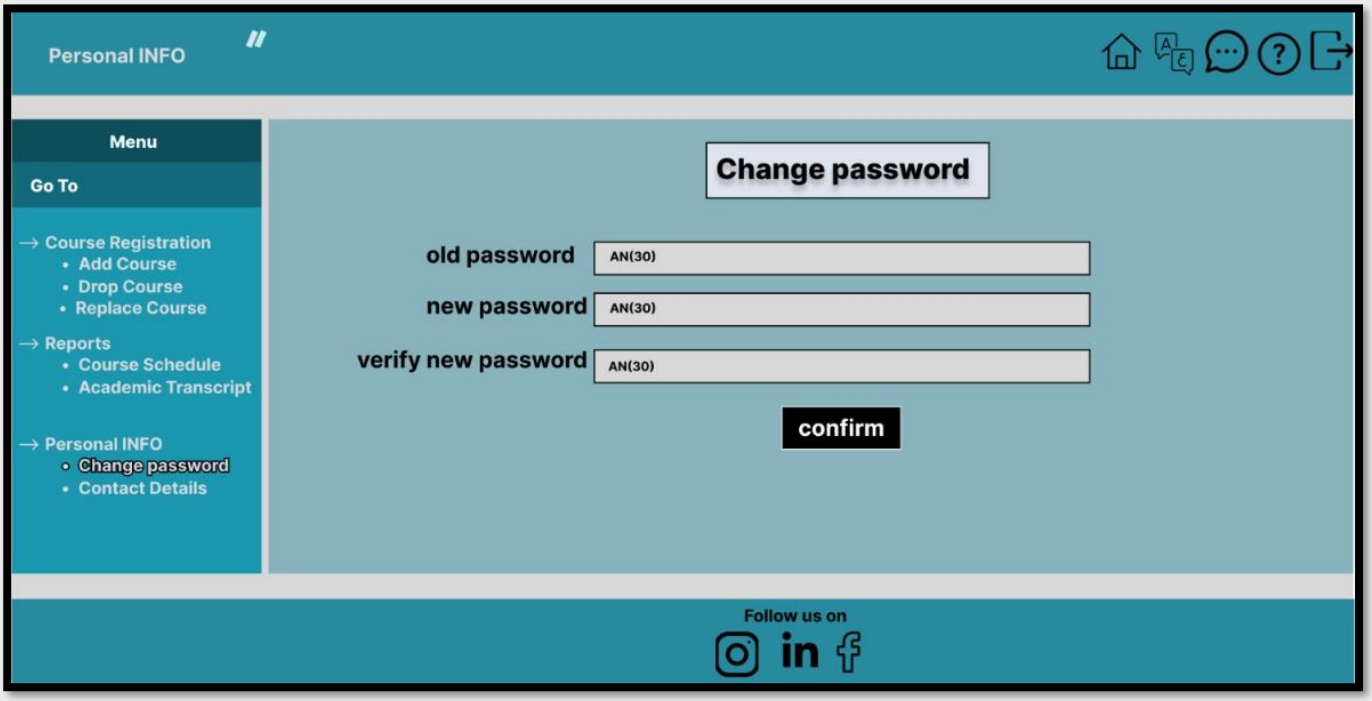


Testing Scenarios:

1- **Testing to check the Email:** So, we clicked forgot password icon and we entered wrong email address. The system generated "Data is incorrect".

2- **Testing to check if the system will send email:** So, we clicked forgot password icon and we entered correct email address. The system generated "An email has been sent".

- **Change Password Interface**



Testing Scenarios:

1- **Testing to check verify new password:** So, we logged into the system and went to change password menu, we entered different password in new password and verify new password. The system generated "Password does not match".

2- **Testing to check old password:** So, we logged into the system and went to change password menu, we entered wrong password in old password. The system generated "Password is incorrect".

3- **Testing to check changing password:** So, we logged into the system and went to change password menu, we entered all data correctly. The system generated "Password changed successfully".

Database Tables

- **Student Table**

studentID	firstName	lastName	BOB	telephoneNo	gender	address	major	GPA	enrollingData
202007500	Fatima	Ali	9/26/2019	33888367	Female	Manama	Computer science	3.20	9/1/2020
202107360	Ali	Jassim	9/9/2019	3890111	Male			3.00	9/1/2021
202107500	Noor	Mohammed	12/9/2020	32222222	Female			2.8	9/1/2019
202107520	Nasser	Ali	12/8/2022	38701707	Male	Manama	Software Engineering	1.5	9/1/2020

- **Course Table**

courseID	studentID	title	credit	building	section
CHEMY101	202107520	General Chemistry	4	S50	14
ENGL155	202107500	Ready to Write	3	SAB	0163
ITCS214	202107360	Data Structure	3	S40	2049
ITSE201	202107520	Introduction to Software Engineering	3	S40	2148
STAT273	202007500	Statistics and probabilities	3	S41	0100

- **Grade Table**

studentID	courseID	date	grade	photo
202007520	STAT273	12/28/2022	B	
202107360	ITCS214	9/26/2022	D	
202107520	CHEMY101	9/26/2022	A	
202107520	ITSE201	9/26/2022	A	
ENGL155	202107500	12/22/2022	C	

- **The Relationships Between the Tables**