



## **Tawon Platform Graduation Project (1)**

**Group GP8**

<b>Student Name</b>	<b>Student ID</b>
<b>Salman Ahmad Al-zubi</b>	<b>3929517</b>
<b>Muath Abdulaziz Al-Harbi</b>	<b>3900590</b>
<b>Osama Mohammed dad</b>	<b>3901618</b>
<b>Ammar Abdulrhman Alahmadi</b>	<b>3900093</b>

**Supervised by:**

**Dr. Abdulrahman Elsharif**

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## **ABSTRACT**

Technology has significantly improved and changed our life, especially after covid-19 pandemic, now it's hard for people to gather and work together, so it became a necessity to develop new solutions that will make it easier to collab and work from home.

In these days, Students in our university are facing a challenge to attend the courses in the campus because of the pandemic which makes it hard to understand the classes and sharing knowledge between each other, we wanted to use the modern technology to help those who are having a hard time to understand their lectures by allowing students to share their knowledge by teaching each other on our website.

Our project focuses on creating a website that serves the purpose of creating and maintaining a remote help session which are created and tutored by the students and the website role is to organize and manage the process.

The methodology followed on this project is the Agile methodology where we can work in parts of the project and present it to the end-user in order to fulfil their requirements.

Brainstorming and questionnaire was the method that we used to collect information about the project we created a short questionnaire and released it to the end-user.

## **ACKNOWLEDGMENT:**

First of all, we would like to express our gratitude to Allah the almighty for helping us to successfully complete our project.

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# Table of Contents

<b>TAWON PLATFORM .....</b>	<b>I</b>
<b>ABSTRACT .....</b>	<b>II</b>
<b>ACKNOWLEDGMENT:.....</b>	<b>III</b>
<b>LIST OF FIGURES .....</b>	<b>VI</b>
<b>LIST OF TABLES .....</b>	<b>VIII</b>
<b>LIST OF ABBREVIATIONS .....</b>	<b>VIII</b>
<b>CHAPTER 1: INTRODUCTION.....</b>	<b>1</b>
1.1 INTRODUCTION:.....	2
1.2 PROBLEM DEFINITION: .....	2
1.3 PROJECT OBJECTIVES: .....	2
1.4 PROJECT SCOPE: .....	3
1.5 PROJECT TIMELINE:.....	3
1.6 DOCUMENT ORGANIZATION: .....	4
1.7 SUMMARY: .....	4
<b>CHAPTER 2: STUDY SIMILAR WORKS .....</b>	<b>5</b>
2.1 INTRODUCTION:.....	6
2.2 RELATED WORK:.....	6
2.2.1 <i>Student Success Centre by KFUPM:</i> .....	7
2.2.2 <i>Udemy:</i> .....	10
2.2.3 <i>Help sessions by waterloo university:</i> .....	13
2.2.4 <i>Relation between the Relevant Work and Our Own Work</i> .....	15
2.3 SUMMARY: .....	16
<b>CHAPTER 3: ANALYSIS .....</b>	<b>17</b>
3.1 INTRODUCTION:.....	18
3.2 COLLECTION REQUIREMENTS:.....	18
3.2.1 <i>Questionnaire:</i> .....	18
3.2.2 <i>Questionnaire Result:</i> .....	18
3.3 REQUIREMENTS .....	23
3.3.1 <i>Functional Requirements:</i> .....	23
3.3.2 <i>NON-Functional Requirements:</i> .....	23
3.4 REQUIREMENTS SPECIFICATION:.....	24
3.4.1 <i>Use case diagram:</i> .....	24
3.4.2 <i>System sequence diagram:</i> .....	27
3.5 DEVELOPMENTAL (OR RESEARCH) METHODOLOGY .....	28
3.6 SUMMARY: .....	29
<b>CHAPTER 4: SYSTEM DESIGN .....</b>	<b>30</b>
4.1 INTRODUCTION:.....	31
4.2 DATA BASE MODELLING.....	31
4.2 ENTITY RELATIONSHIP DIAGRAM .....	32
4.3 WEBSITE INTERFACE DESIGN:.....	32
4.4 SUMMARY: .....	35
<b>CHAPTER 5: SYSTEM IMPLEMENTATION.....</b>	<b>36</b>
5.1 INTRODUCTION.....	37
5.2 USED TOOLS.....	37
5.2.1 <i>Visual studio</i> .....	37
5.2.2 <i>C#</i> .....	38
5.2.3 <i>Microsoft SQL</i> .....	38
5.2.4 <i>Google Form</i> .....	39

5.2.5 Microsoft Excel .....	39
5.2.6 FileZilla .....	40
5.2.7 Zoom Meetings API .....	40
5.3 IMPLEMENTATION STEPS OF THE WEBSITE .....	41
5.3.1 Data Collection .....	41
5.3.2 Front-End Designing .....	41
5.3.2.1 Home-Landing .....	41
5.3.2.2 Classes .....	42
5.3.2.3 Contact us .....	43
5.3.2.4 Terms & Services .....	44
5.3.2.5 Mobile Compatibility .....	44
5.3.3 Database implementation .....	46
5.3.3.1 Student .....	46
5.3.3.2 Course .....	46
5.3.3.3 Tutor.....	46
5.3.3.4 Tutor Apply .....	47
5.3.3.5 Student Id check .....	47
5.3.3.6 Schedule.....	47
5.3.3.7 Schedule Tutor .....	48
5.3.3.8 Admin .....	48
5.3.3.9 PDF Files.....	48
5.3.4 Back-End Coding .....	49
5.3.4.1 Tutor Apply .....	49
5.3.4.2 Forget password .....	50
5.3.4.3 Registration page .....	51
5.3.4.4 Tutor Schedule page.....	52
5.3.4.5 Master page.....	52
5.4 Important Codes .....	55
5.4.1 Zoom API .....	55
5.4.2 Tutor Management .....	56
5.5 SYSTEM TESTING .....	58
5.5.1 register / login .....	59
5.5.2 attending a class .....	61
5.5.3 Becoming a tutor .....	63
5.5.4 scheduling a class.....	64
5.5.5 Uploading course's materials.....	65
5.6 SUMMERY .....	66
<b>CHAPTER 6: CONCLUSION AND FUTURE WORK .....</b>	<b>67</b>
6.1 CONCLUSION .....	68
6.1 FUTURE WORK .....	68
<b>REFERENCES .....</b>	<b>69</b>
<b>APPENDIX: .....</b>	<b>70</b>

## List of Figures

### Chapter 1

Figure 1.١ Project schedule

3

### Chapter 2

Figure 2.١ KFUPM home interface

7

Figure 2.٢ KFUPM new help session

7

Figure 2.٢ KFUPM session edit	8
Figure 2.٣ KFUPM session status	8
Figure 2.٤ Udemy home page	10
Figure 2.٥ Udemy courses list	11
Figure 2.٦ Udemy course	11
Figure 2.٧ waterloo acronyms	13
Figure 2.٨ waterloo course information	14
Figure 2.٩ waterloo list of courses	14

## Chapter 3

Figure 3.١ First questionnaire Questions	18
Figure 3.٢ second questionnaire Questions	19
Figure 3.٣ third questionnaire Questions	19
Figure 3.٤ fourth questionnaire Questions	20
Figure 3.٥ fifth questionnaire Questions	20
Figure 3.٦ sixth questionnaire Questions	21
Figure 3.٧ seventh questionnaire Questions	21
Figure 3.٨ eighth questionnaire Questions	22
Figure 3.٩ ninth questionnaire Questions	22
Figure 3.١٠ use case of the system	24
Figure 3.١١ sequence diagram of the system	27

## Chapter 4

Figure 4.١ Data base model	31
Figure 4.٢ ERD	32
Figure 4.٣ Sign-up Page	33
Figure 4.٤ Home Page	33
Figure 4.٥ Make A Class Page	34
Figure 4.٦ Classes Schedules	34

## Chapter 5

Figure 5. 1 Visual Studio	37
Figure 5. 2 C# Programming Language	38
Figure 5. 3 Microsoft SQL Server	38
Figure 5. 4 Google Form	39
Figure 5. 5 Microsoft Excel	39
Figure 5. 6 FileZilla FTP	40
Figure 5. 7 Zoom API Meeting	40
Figure 5. 8 Home Landing	41
Figure 5. 9 Course Content	42
Figure 5. 10 Create Classes	43
Figure 5. 11 Contact us	43
Figure 5. 12 Terms & Services	44

Figure 5. 13 Home-Landing for Mobile	44
Figure 5. 14 Course Content for Mobile	45
Figure 5. 15 Create Classes for Mobile	45
Figure 5. 16 Student Table	46
Figure 5. 17 Course Table	46
Figure 5. 18 Tutor Table	47
Figure 5. 19 Tutor Apply Table	47
Figure 5. 20 Student Id Check Table	47
Figure 5. 21 Schedule Table	48
Figure 5. 22 Schedule Tutor Table	48
Figure 5. 23 Admin Table	48
Figure 5. 24 PDF Files Table	49
Figure 5. 25 Tutor Apply Back-end Code	50
Figure 5. 26 Forget Password Back-end Code	51
Figure 5. 27 Registration page Back-end Code	51
Figure 5. 28 Tutor Schedule Back-end Code	52
Figure 5. 29 Master Page Back-end Code	52
Figure 5. 30 Master Page Back-end Code	53
Figure 5. 31 Master Page Back-end Code	54
Figure 5. 32 Zoom API Back-end Code	55
Figure 5. 33 Zoom API Back-end Code	56
Figure 5. 34 Zoom API Back-end Code	56
Figure 5. 35 Tutor Management Front-end	57
Figure 5. 36 Tutor Management Front-end	57
Figure 5. 37 Tutor Management Front-end	58
Figure 5. 38 Tutor Management Front-end	58
Figure 5. 39 Register / Login	59
Figure 5. 40 Sign up	60
Figure 5. 41 Sign in	60
Figure 5. 42 Attending a Class	61
Figure 5. 43 Attending a Class	61
Figure 5. 44 Attending a Class	62
Figure 5. 45 Attending a Class	62
Figure 5. 46 Become A tutor	63
Figure 5. 47 Become a tutor	63
Figure 5. 48 Become a tutor	63
Figure 5. 49 Scheduling a class	64
Figure 5. 50 Scheduling a class	64
Figure 5. 51 Scheduling a class	65
Figure 5. 52 Uploading course's materials	65
Figure 5. 53 Uploading course's materials	66

## **List of Tables**

### **Chapter 3**

Table 3. 1 Relation Between Projects .....	16
Table 3.2 use case “sign up” .....	25
Table 3.3 use case “sign up” .....	25
Table 3.4 use case “making a class” .....	25
Table 3.5 use case “making a class” .....	25
Table 3.6 use case “view classes” .....	26
Table 3.7 use case “view classes” .....	26
Table 3.8 use case “choosing class” .....	26

## **List of Abbreviations**

SSC      Student Success Centre

KFUPM   King Fahad University of Petroleum and Minerals

FTP   File Transfer Protocol

# **CHAPTER 1: INTRODUCTION**

## **1.1 Introduction:**

Technology has made our lives easier, so we wanted to jump on this train by coming up with this project (Tawon Platform) the students will be able to help and teach each other using our website and they are going to benefit by sharing knowledge between each other, this is going to improve the quality of studying in our university.

## **1.2 Problem Definition:**

Students used to gather before exams to study and work together duo to covid-19 it became harder to do that, so in our project we want to give the opportunity to any hardworking student to share his knowledge and help others to understand the subject that he understands by tutoring them via our website.

## **1.3 Project Objectives:**

With this project we intended to create a website that help student who struggle with difficult subjects by making an improvement classis for student by student and this will help with:

- Raising in student grade.
- Improve the understanding of the subject.
- Raising teamwork between students.
- Experience for the lecture presenter (students).
- Due to covid-19 pandemic this is a safe way for group studies.

## 1.4 Project Scope:

This project is going to serve the educational field in Taibah university by linking some tools in one website to help students attend helping sessions that are provided from other student in their college.

## 1.5 Project Timeline:

In our project we will be using Gantt Chart to display the tasks and the date for each task and the duration of it as table 1.1 below shows:

- Planning the project
- Study similar works
- Collection of requirements
- Analysis
- Design
- Preparing and practicing

ID	Task	Task1	Week 2	Week 3	Week 4	Week 5	Week 6
	Duration	Start 28/09/2021 End 10/10/2021	Start 10/10/2021 End 22/10/2021	Start 26/10/2021 End 10/11/2021	Start 10/11/2021 End 20/11/2021	Start 20/11/2021 End 01/12/2021	Start 01/12/2021 End 10/12/2021
1	Planning The Project						
2	Study similar works						
3	The collection of requirements						
4	Analysis						
5	Design						
6	Preparing and practicing						

Figure 1. 1 Project schedule

## **1.6 Document Organization:**

This project divided into six chapters which is going to give a vision of the scientific steps we took in our project process; the following points gives a brief description about the contents of each chapter.

**Chapter 1:** provide the reader of a general idea of the project and the tools were used in the developing process.

**Chapter 2:** Provides a brief idea about other related work.

**Chapter 3:** It shows the analytical side of the project.

**Chapter 4:** Provides an idea of the initial design of the project UI.

**Chapter 5:** The actual implementation of the project.

**Chapter 6:** The final Chapter which provide a general conclusion for the project.

## **1.7 Summary:**

Finally, implementing a site for organizing and managing online help sessions will help students to reach each other easily and it's going to change the classic way where student must meet in person to study together and share knowledge.

## **CHAPTER 2: STUDY SIMILAR WORKS**

## **2.1 Introduction:**

In this chapter we are going through some related websites that have a related concept to our project, in Section 2.2 we are going to list down some of related works and we will document them by providing some screenshots and highlight the advantages and disadvantages for each one of them.

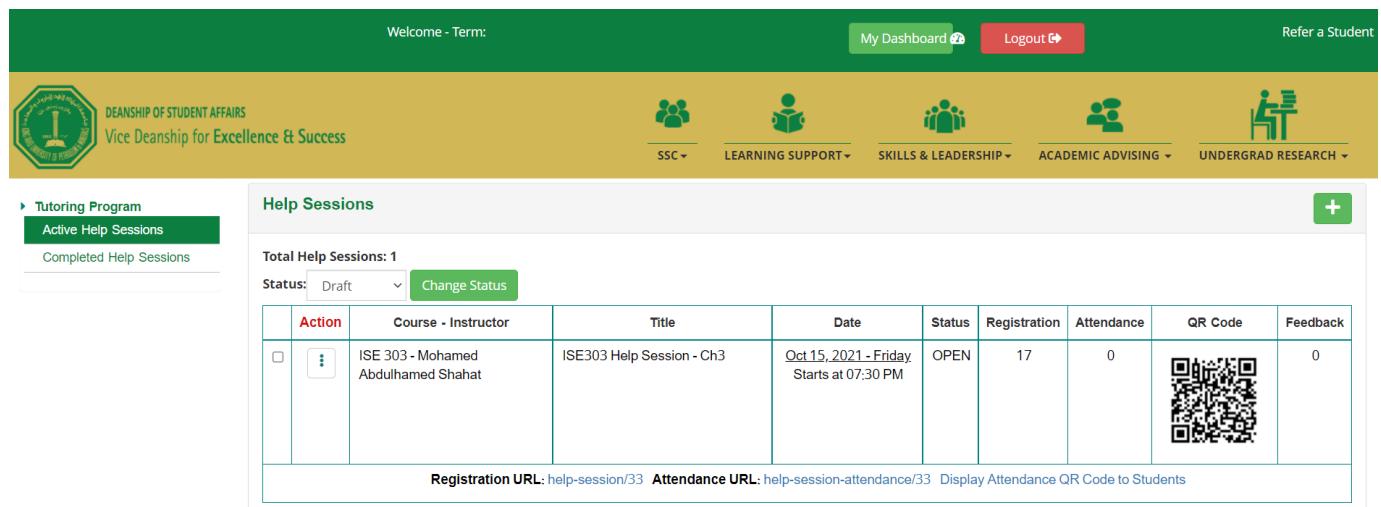
## **2.2 Related work:**

In this section, we will highlight a few applications that are related to our project or have a similar process that exist in our site, our goal is to take the best features that are available in these site and work on improving the weakness that's exists in those platforms.

## 2.2.1 Student Success Centre by KFUPM:

"SSC is a portal provided by KFUPM for students to organize teachers and students into online meeting session." [1]

Figure 2.1 show the home screen for KFUPM SCC that shows the available help sessions with the session information.



Welcome - Term:

My Dashboard  Logout 

Refer a Student

DEANSHIP OF STUDENT AFFAIRS  
Vice Deanship for Excellence & Success

SSC  LEARNING SUPPORT  SKILLS & LEADERSHIP  ACADEMIC ADVISING  UNDERGRAD RESEARCH 

Tutoring Program

Active Help Sessions

Completed Help Sessions

**Help Sessions**

Total Help Sessions: 1

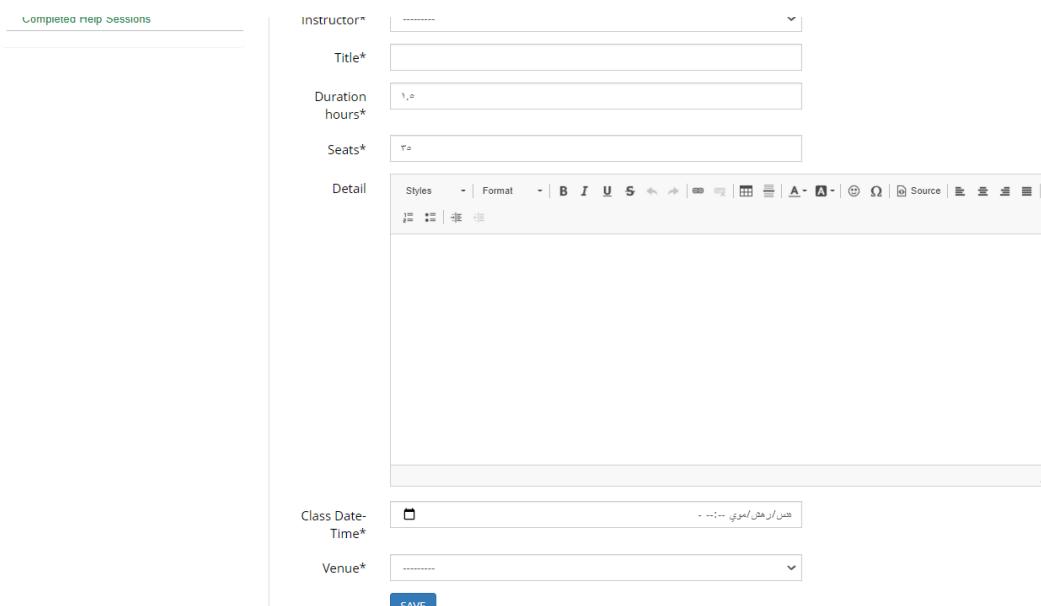
Status: Draft 

Action	Course - Instructor	Title	Date	Status	Registration	Attendance	QR Code	Feedback
<input type="checkbox"/> 	ISE 303 - Mohamed Abdulhamed Shahat	ISE303 Help Session - Ch3	Oct 15, 2021 - Friday Starts at 07:30 PM	OPEN	17	0		0

Registration URL: [help-session/33](#) Attendance URL: [help-session-attendance/33](#) Display Attendance QR Code to Students

Figure 2.2 KFUPM home interface

Figure 2.2 show the page for adding or editing a help session with the session information.



Completed Help Sessions

Instructor\*

Title\*

Duration hours\*

Seats\*

Detail

Class Date- Time\*

Venue\*

**SAVE**

Figure 2.1 New help session

In figure 2.3 You can order the sessions by the type of status it have.

Status		Detail	List of Sessions							
	A	Draft	Course - Instructor	Title	Date	Status	Registration	Attendance	QR Code	Feedback
<input type="checkbox"/>	Open	Mohamed Shahat	- Mohamed Shahat	Example	Oct 27, 2021 - Wednesday Starts at 07:33 PM	DRAFT	0	0		0
<input type="checkbox"/>	Complete	ISE 303 - Mohamed Abdulhamed Shahat	ISE 303 Help Session - Ch3		Oct 15, 2021 - Friday Starts at 07:30 PM	OPEN	18	0		0

Registration URI: [help-session/33](#) Attendance URI: [help-session-attendance/33](#) Display Attendance QR Code to Students

Figure 2.3 KFUPM session status

In figure 2.4 you can see the action you can make for the session such as enrolment and attendance

<input type="checkbox"/>		ISE 303 - Mohamed Abdulhamed Shahat	ISE303 Help Session - Ch3
		<a href="#"> EDIT DETAIL</a> <a href="#"> INVITATION EMAIL</a> <a href="#"> ENROLL MANUALLY</a> <a href="#"> REGISTRATIONS</a> <a href="#"> MARK ATTENDANCE</a>	URL: <a href="#">help-session/33</a> Attendance URI: <a href="#">help-session-attendance/33</a>

Figure 2.4 KFUPM session edit

## **Advantages and Disadvantages of SSC:**

We interviewed one of the students at KFUPM we conclude the following advantages and disadvantages of the SSC.

### **Advantages:**

- The possibility of evaluation after each lecture for the tutor and he can see the evaluation without the names of the students.
- The course registration link and the preparation link will automatically appear for the tutor so that he can send it to the students.
- The tutor can blacklist disrespectful students (so that the student cannot register with the teacher in future courses).

### **Disadvantages:**

- It does not have mobile compatibility, you need to use a computer for smooth access.
- The teacher must start a Zoom meeting before each lecture (There is no integration in Zoom).
- There is no reminder before each lecture by e-mail of lecture times or the possibility of sending e-mail to students registered in the course

## 2.2.2 Udemy:

"Udemy is a platform meant for recorded online course that is worldwide with several languages contains different courses Starting with IT courses like networking, security, and programming also it provides a variety of other categories like marketing, business, financial and design." [2]

Figure 2.5 show the home page of Udemy that offer a broad selection of sources from multiple majors.

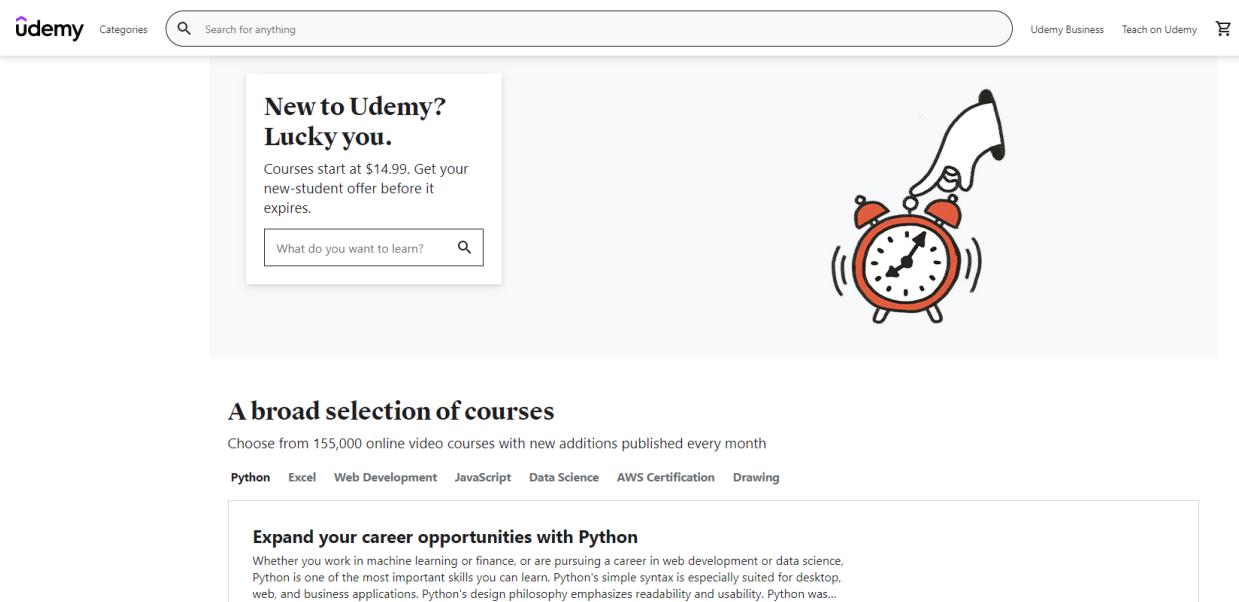


Figure 2.4 Udemy home page

Figure 2.6 show courses from specific subject it also shows the new and trending courses.

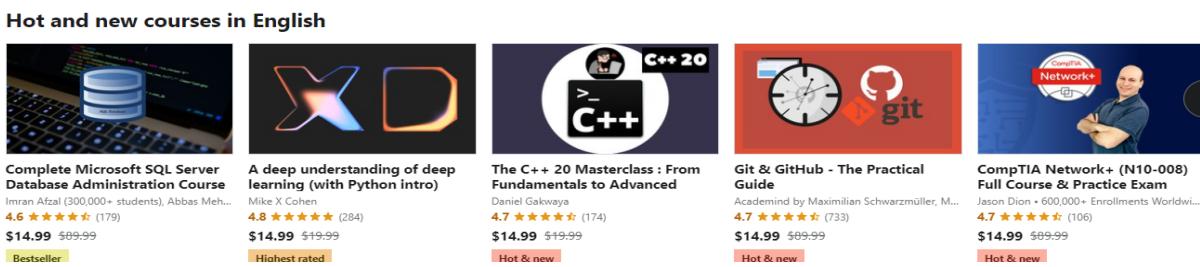


Figure 2.5 Udemy courses list

In figure 2.7 you can see the content of the course with its multiple sections.

Figure 2.6 Udemy course

## **Udemy advantages and disadvantages:**

We have been using Udemy for many years made a short brainstorming session to discuss the advantages and disadvantages to get inspiration in our project.

### **Advantages:**

- It provides more than 183,000 courses.
- Multiple language support.
- Gives certificate of completion.

### **Disadvantages:**

- Paid courses.
- Pre recorded courses.
- Arabic language support is limited.
- No online meetings with the instructors

### 2.2.3 Help sessions by waterloo university:

"Help session at waterloo helps with scheduling meeting for student at waterloo university to help the first-year student form engineering major with their subject with the help of their teachers." [3]

Figure 2.8 show some useful acronym that is used for the help sessions.

Engineering » Undergraduate Students » First year »

## Help sessions

### Glossary of acronyms used on this page:

<i>Course acronym</i>	<i>Meaning</i>
AE	Architectural Engineering
CHE	Chemical Engineering
CIVE	Civil Engineering
ECE	Electrical and Computer Engineering
ENVE	Environmental Engineering
GEOE	Geological Engineering
MATH	Mathematics
PHYS	Physics

Figure 2.7 waterloo acronyms

Figure 2.9 show the list of session with the subject and time for the session.

	MATH 115 AE/CIVE/ENVE/GEOE 115	<u>Lakshay Goel</u> 6:30-8:30 p.m. in person WEEF Lab [E2-1792]  <u>Sookeong Cho</u> 8:30-10:30 p.m. <u>WebEx meeting</u>
	Physics PHYS 115	<u>Ansh Juneja</u> 6:30-8:30 p.m. in person MMLab [CPH-1346]
	Chemistry CHE 102	<u>Amy Wohlgemuth</u> 6:30-8:30 p.m. <u>WebEx meeting</u>
Tuesday	Calculus MATH 116 and 117	<u>Cael Johnston</u> 6:30-8:30 p.m. in person WEEF Lab  <u>MS Teams</u> - live stream
	Physics AE/CIVE 104	<u>Sookeong Cho</u> 6:30-8:30 p.m. <u>WebEx meeting</u>
	Algebra MATH 115 AE/CIVE/ENVE/GEOE 115	<u>Aamer Akhand</u> 8:30-10:30 p.m. <u>WebEx meeting</u>
Wednesday	Algebra MATH 115 AE/CIVE/ENVE/GEOE 115	<u>Lakshay Goel</u> 6:30-8:30 p.m. in person WEEF Lab  <u>Aamer Akhand</u> 8:30-10:30 p.m. <u>WebEx meeting</u>

Figure 2.9 waterloo list of courses

In figure 2.10 you can see the courses information such as the period of the courses.

1. These sessions are held from Wednesday September 15, 2021 until the end of the term with the last session on Tuesday December 7, 2021.
2. These sessions are cancelled on October 11-15.
3. During midterm exam week, these help sessions will change according to the exam schedule.

Updated: October 4, 2021

Figure 2.10 waterloo course information

## **Waterloo advantages and disadvantages:**

We went through the waterloo's help sessions and found out the following advantages and disadvantages

### **Advantage:**

- The courses meeting runs on the university own website for less errors.
- They have useful acronyms that may not be known for first years.

### **Disadvantage:**

- Only for engineering major student and limited subjects.
- The meeting is done by a teacher.
- The session is only done for a period.
- Poor UI/UX for some information are not known.

## **2.2.4 Relation between the Relevant Work and Our Own Work**

Our website stands among other websites we mentioned in its availability for every student in Taibah university and it will take the way student share their knowledge to the next level, where they can communicate without boundaries and no limitation because it is a free to use website, unlike most online courses websites.

Table 3. 1 Relation Between Projects

website	SSC	Udemy	Waterloo	Tawon
Availability	For student only	For everyone	For student only	For student only
free	✓	✗	✓	✓
Done live	✓	✗	✓	✓
Reminder before the session	✗	-	✗	✓
The session is done automatically	✗	✓	✓	✓
mobile compatibility	✗	✓	✗	✓
Multiple majors	✗	✓	✗	✓
Limited subjects	✗	✗	✓	✗
Limited time period	✗	✗	✓	✗

## 2.3 Summary:

After reviewing some of the related websites and projects, we decided to use the related website's advantages points in our favor by improving our project's structure. Also, we learned a lot from their disadvantages and weaknesses which is going to help us to come up with a useful and special project that is going to fulfill the needs for our university's students.

## **CHAPTER 3: ANALYSIS**

### 3.1 Introduction:

It's important to study and analyze the current system and gather as many information as we could to come up with a strong understanding of the project so we can carry on with the designing and implementation chapters.

### 3.2 Collection Requirements:

#### 3.2.1 Questionnaire:

We prepared a few questions that will help us to gather information from the end users.

#### 3.2.2 Questionnaire Result:

Question one we asked the student about their age as we need to collect data about what kind of users will use the website:

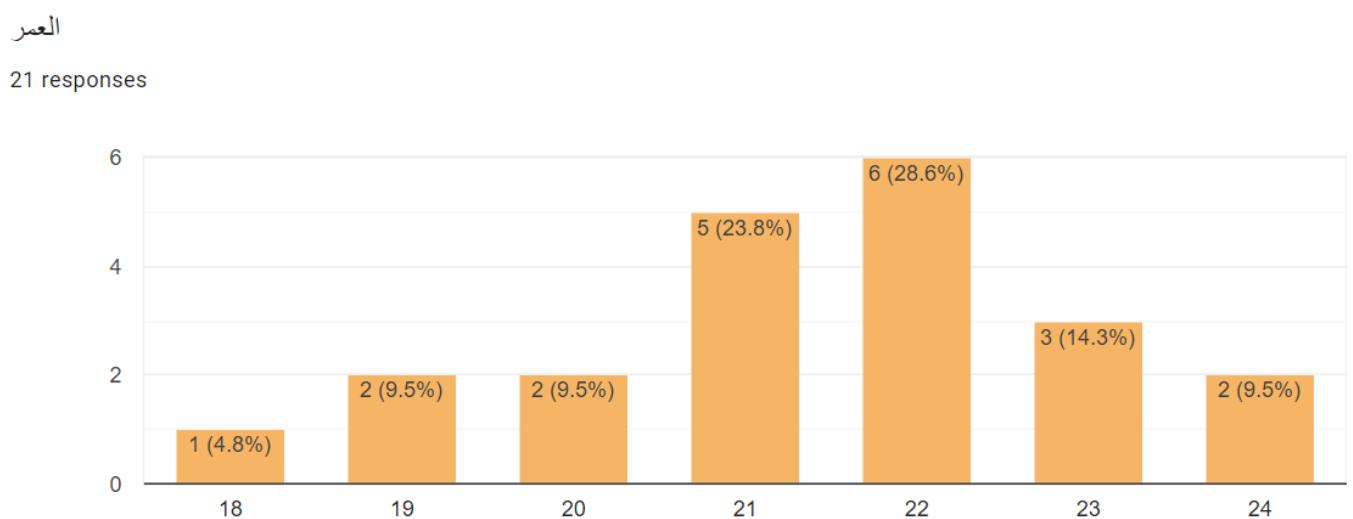


Figure 3.1 First questionnaire Questions

Question two we asked how much the pandemic affected their meetings with their colleagues to evaluate how much the effect of the pandemic to physical meetings is. The majority of the answers we got is that it affected them a lot:

مأمدى تأثير الجائحة على اجتماعاتك مع زملاء الدراسة؟

21 responses

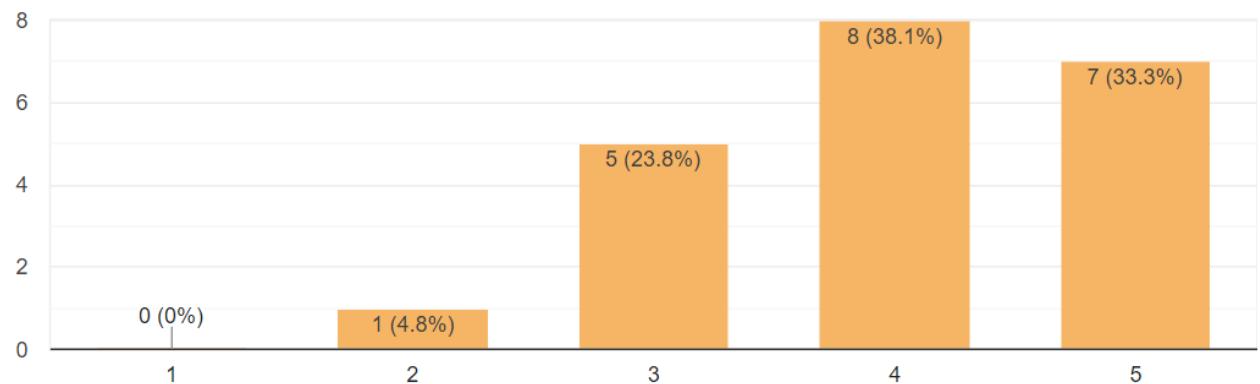


Figure 3.2 second questionnaire Questions

Question three we asked if they ever occurred a problem understanding the subject from the teacher of the course so we can gather information about the student needs for another way they can study the subjects. The majority of the answers we received is Yes They encountered problems with the course instructor:

هل قد واجهت مشكلة في فهم المواضيع الدراسية من معلم المادة؟

21 responses

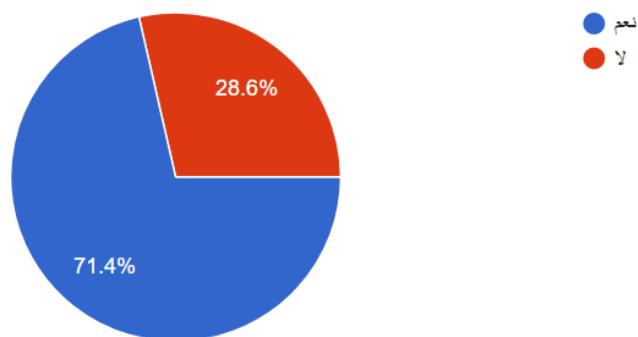


Figure 3.3 third questionnaire Questions

Question four we asked what the quality of the online studying or distance education for us is to evaluate the quality of online studies as our website is based on an online platform. The answers we received were vary but the majority answered neutral:

برأيك مامدى جودة التعليم عن بعد؟

21 responses

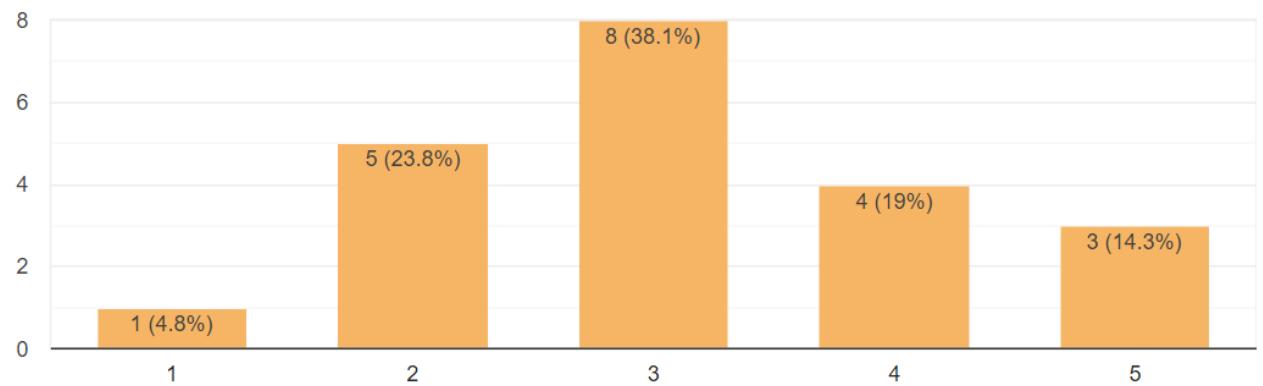


Figure 3.4 fourth questionnaire Questions

Question five we asked if they ever took a course online to see how much they are familiar with online or distance education. The majority answered Yes they took online courses before:

هل سبق وان اخذت مقرر تعليمي او دورة عن بعد؟

21 responses

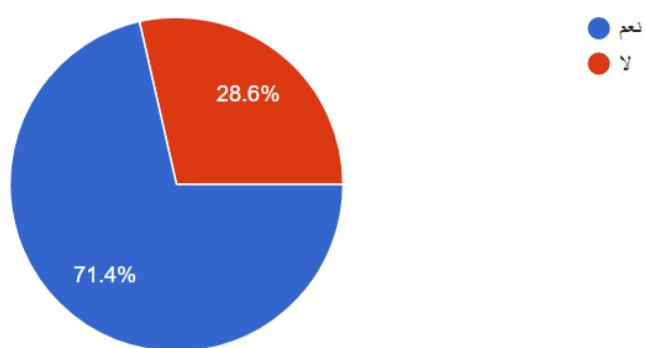


Figure 3.5 fifth questionnaire Questions

Question six we asked how much they want to take online sessions with their colleges in order to see how much they are willing to take online sessions with their colleges. The majority answered that they are willing to take online sessions with their colleges:

مامدى رغبتك باخذ جلسات مساعدة او دروس تقوية عن طريق زملاء الدراسة عن بعد (بدون معلم)؟

21 responses

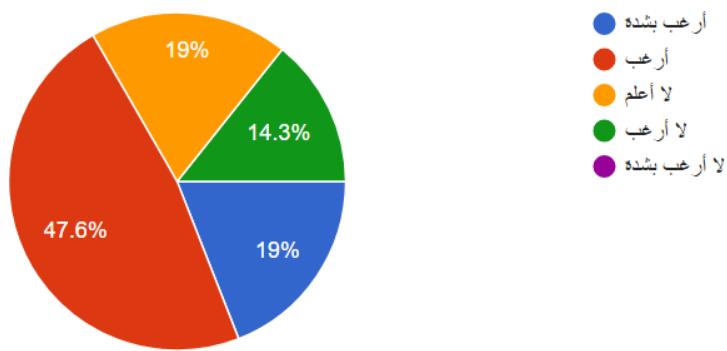


Figure 3.6 sixth questionnaire Questions

Question seven we asked if they prefer to attend online courses using their phone or computer so we can design the website to fit the users needs. The majority answered they prefer to use a computer:

هل تفضل استخدام جهاز الكمبيوتر ام الهاتف المحمول لحضور الدورات والدروس التعليمية عن بعد؟

21 responses

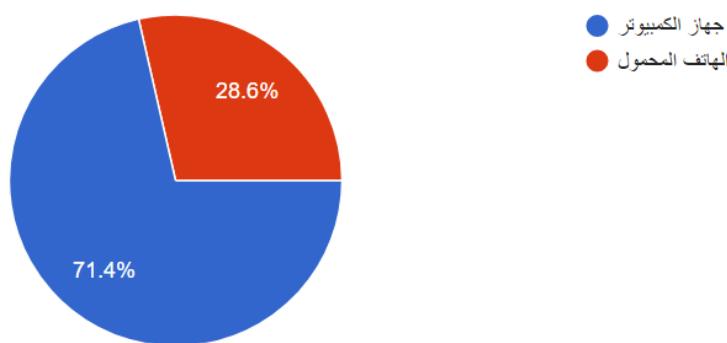


Figure 3.7 seventh questionnaire Questions

Question eight we asked if they prefer to study alone or with their colleges. The majority of the answers is between prefer and very prefer to study with their colleges:

هل تفضل المذاكرة او المراجعة مع زملاء الدراسة ام لوحده؟

21 responses

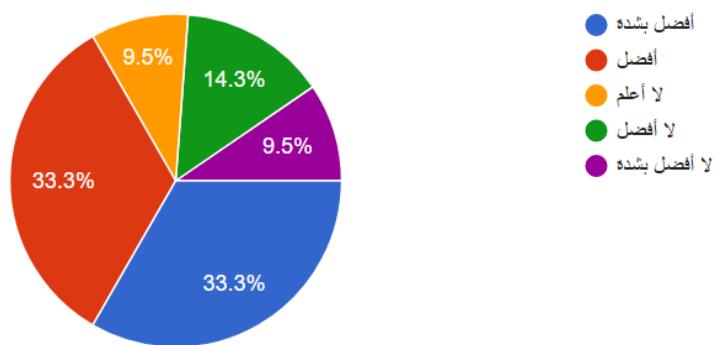


Figure 3.8 eighth questionnaire Questions

Question nine we asked if they want the platform to be in college level or university level or in all university level across the kingdom of Saudi Arabia. The majority answered to be across the university of kingdom of Saudi Arabia:

على اي مستوى تفضل وجود هذه الخدمة؟

21 responses

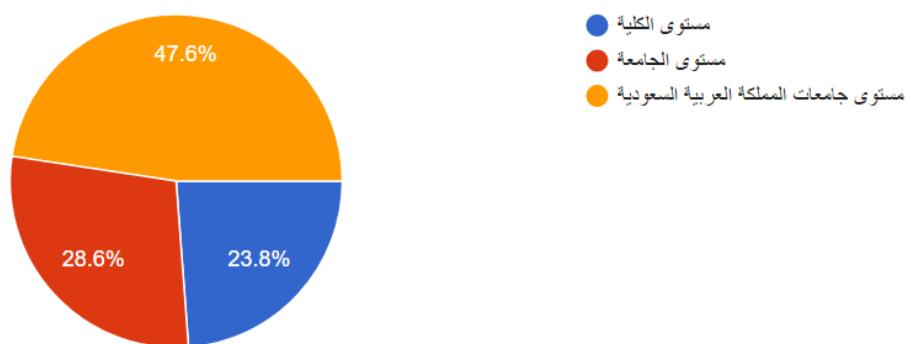


Figure 3.9 ninth questionnaire Questions

### **3.3 Requirements**

After a brainstorming session we listed down the functional and the non-functional requirements.

#### **3.3.1 Functional Requirements:**

- Allow the user to login into the website.
- The tutor can create a class so other students can attend.
- Display the courses that the student is currently taking.
- Students should be able to get the material from the site.
- The Admins should be able to manage the tutor's and student's account.

#### **3.3.2 NON-Functional Requirements:**

- Usability: The site should be easy to use to serve students from all departments.
- Reliability: The website should fulfill the users' needs without any errors or breakdowns.
- Availability: The site should be available to the students within the university.
- Performance: The website should have a fast response time.
- Maintainability: The website should receive fixed scheduled maintenance.
- Security: The data of the website's users should be secure.

## 3.4 Requirements Specification:

In this project we will use the following for analysing:

- Use case diagram
- System sequence diagram

### 3.4.1 Use case diagram:

"Use case diagram is a basic form of system/software requirement for a new undeveloped software program, use case define the expected action (the what), but not the method for making it happen (the how). Use cases can be represented both textual and visual." [4]

In our project we have 2 actors:

- The student (viewer): the person who want to learn from the classes.
- The student (presenter): the person who is sharing and presenting the classes.

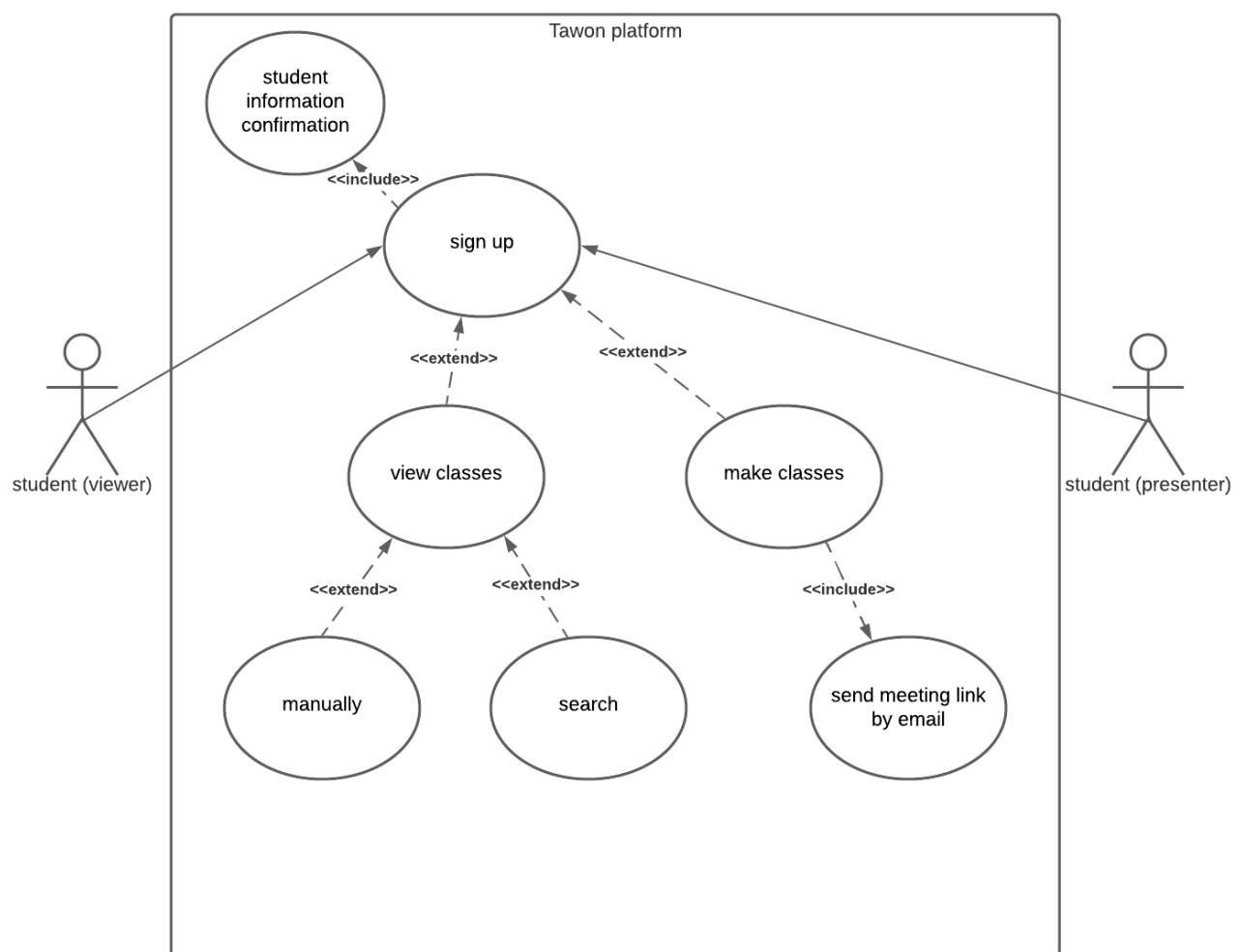


Figure 3.10 use case of the system

## Use case description (more detailed):

Table 3.2 use case “sign up”

Use case number	1	
Use case name	Sign up	
actor	Student (view) Student (presenter)	
Description	The sign-up process	
precondition	None	
Flow path	Actor action	System response
	User put in information	The system checks on the user information
exception	The user information my not be correct	

Table 3.4 use case “making a class”

Use case number	2	
Use case name	Make a classes	
actor	Student (presenter)	
Description	The student (presenter) wants to make a new class	
Precondition	Need to be signed in	
Flow path	Actor action	System response
	Go to make a class	
	Fill in the class information	The system sends in the confirmation
exception	none	

Table 3.6 use case “view classes”

Use case number	3	
Use case name	View classes	
actor	Student (viewer) Student (presenter)	
Description	The user wants to see the available classes	
Precondition	Need to be signed in	
Flow path	Actor action	System response
	Go to view	the system shows the available classes
	the user can search for a specific class	The system shows the search result
exception	none	

Table 3.8 use case “choosing class”

Use case number	4	
Use case name	Choose a class	
actor	Student (viewer)	
Description	The user can choose the wanted class	
Precondition	The user will go through use case 3	
Flow path	Actor action	System response
	The user will choose a class	The system will show the class information
	The user will confirm the choice	The system will confirm the choice
exception	none	

### 3.4.2 System sequence diagram:

"Sequence diagram simply represent the interactions between actors and objects in sequential order, sequence diagram describe how and in what order the objects in a system function, it is also known as event diagram or event scenarios." [5]

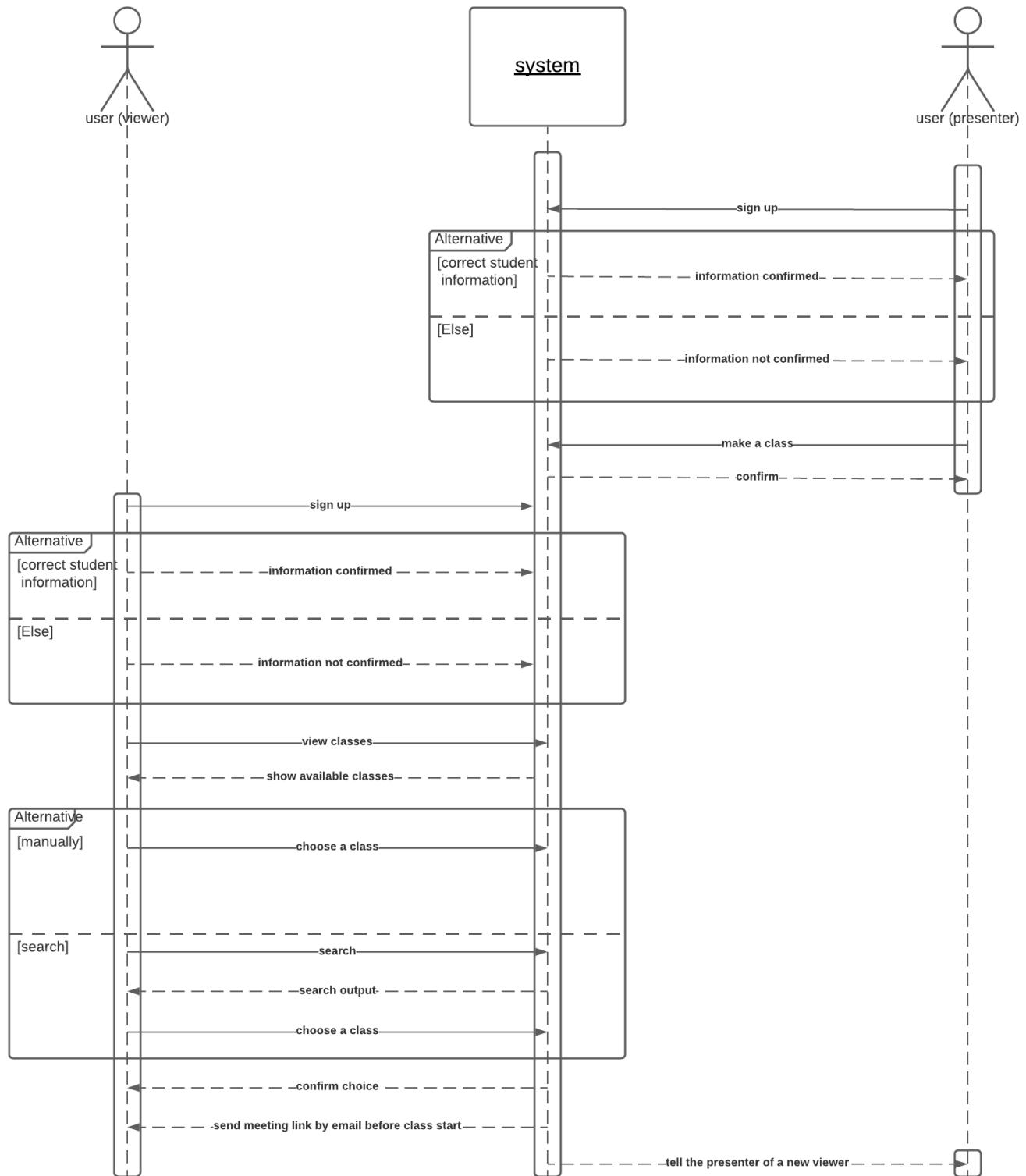


Figure 3.11 sequence diagram of the system

### **3.5 Developmental (or Research) Methodology**

The methodology that we are going to use is Agile system development method, it focuses on presenting the work to the client for every section we finish of the project to ensure their requirements are fulfilled, as a result, we will be up to date with any changes or any requests the client may add to the project.

#### **Procedure:**

- Define:

On this step we determine the project objectives, collect the requirements and defining the scope.

- Design:

Here we set the project key features and structure to achieve the project goal.

- Build:

Here the project is developed and ready for test phase.

- Test:

The test phase is an essential step in agile development life cycle to receive feedback, so the project meets the business demands.

- Release:

The final phase of Agile development life cycle is to release the final products after checking that the requirements are fulfilled.

#### **Tools Used in Project:**

#### **Data collected:**

The survey consisted of 8 multiple-choice questions and 1 written question for providing suggestions.

The aim was to conduct the survey with number of students from Taibah university from 7-13 of November. The student was defined as a person who studied in Taibah university.

### **3.6 Summary:**

After gathering information from the end users, we made a brainstorming session and we came up with a general idea of the requirements that will be needed to successfully prepare the project, after that we worked on the use case diagram and the sequence diagram which visualize how the system will function and interact with the users.

## **CHAPTER 4: System Design**

## 4.1 Introduction:

This chapter will be focusing on the Layout and the database structure for the website.

## 4.2 Data base modelling

"Data modelling is the process of creating a visual representation of either a whole information system or parts of it to communicate connections between data points and structures. The goal is to illustrate the types of data used and stored within the system, the relationships among these data types, the ways the data can be grouped and organized and its formats and attributes." [6]

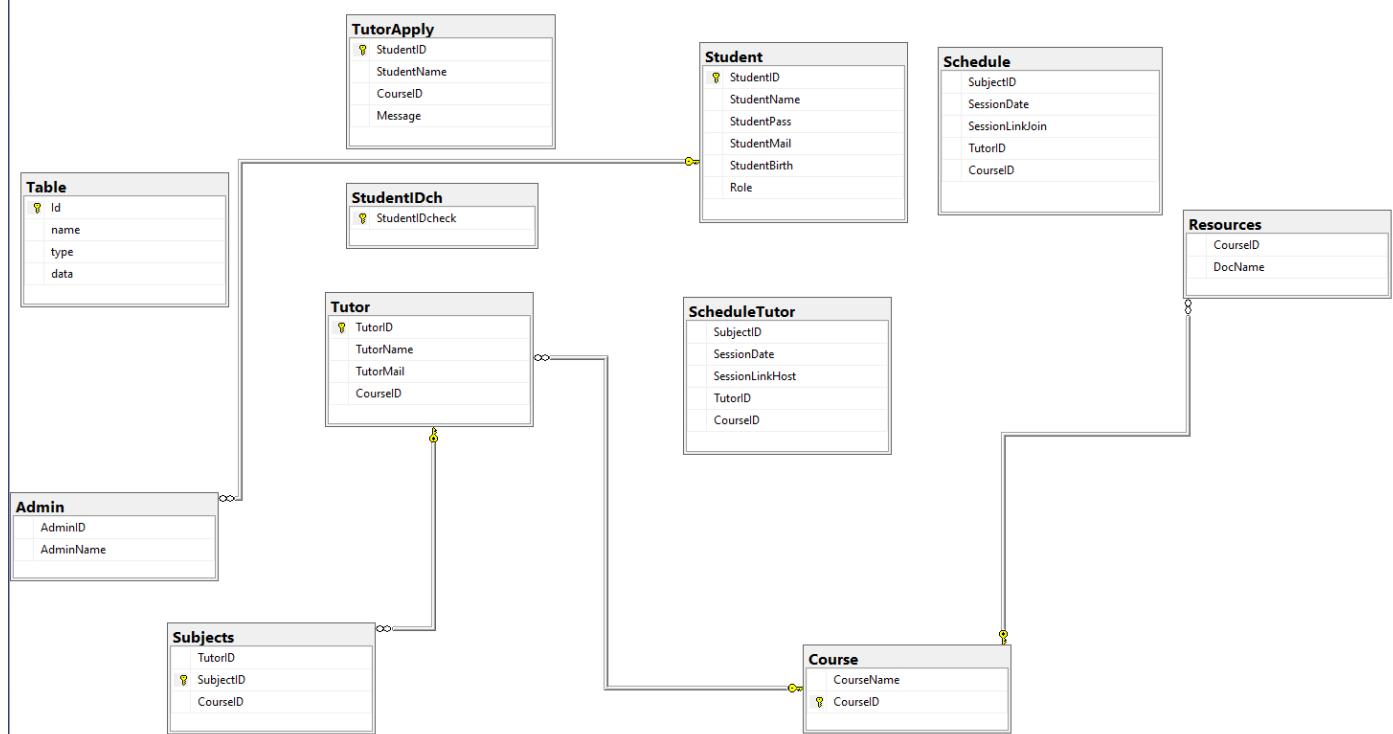


Figure 4.1 Data base model

## 4.2 Entity Relationship Diagram

"Database systems are often modelled using an entity relationship (ER) diagram as the blueprint from which the actual data are stored; the blue-print is the output of the design phase. The ER diagram is an analyst's tool to diagram the data to be stored in a database system"[7]

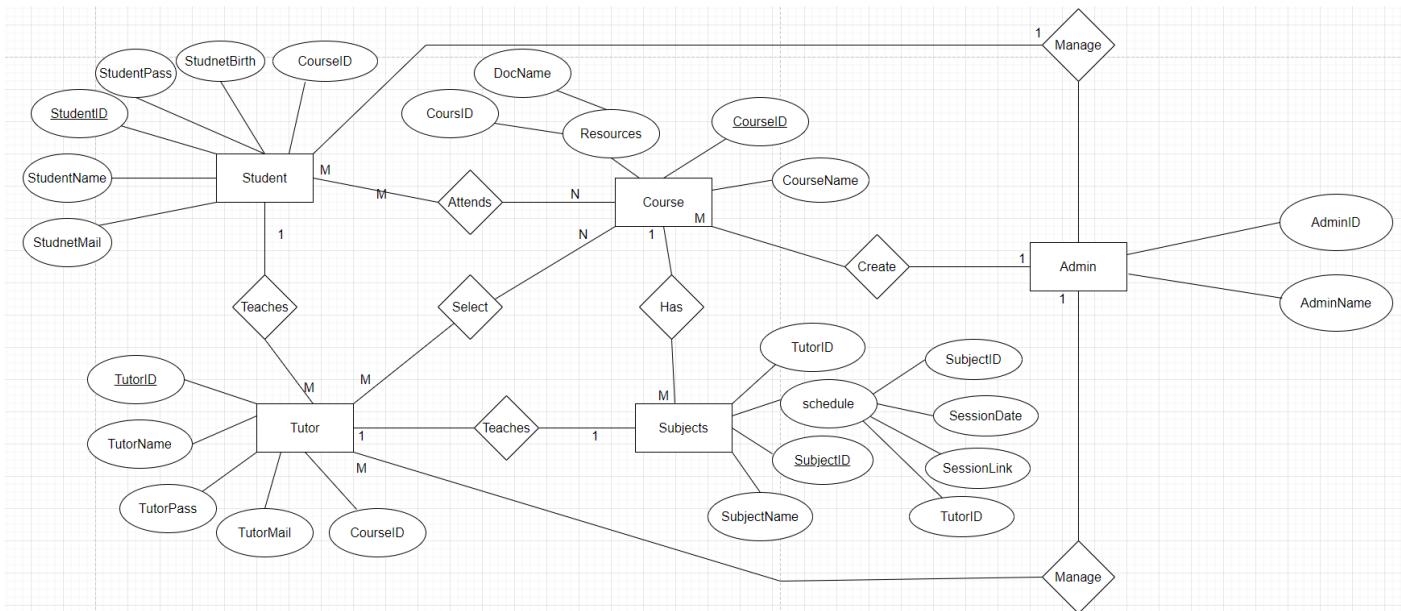


Figure 4.1 ERD

## 4.3 WEBSITE INTERFACE DESIGN:

We designed a simple interface for our website that we are going to change when moving on to implementation phase, designing an initial interface helps to provide a better understanding for the project.

### 4.3.1 Sign up page

In figure 4.3 you can see the initial sign-up page.

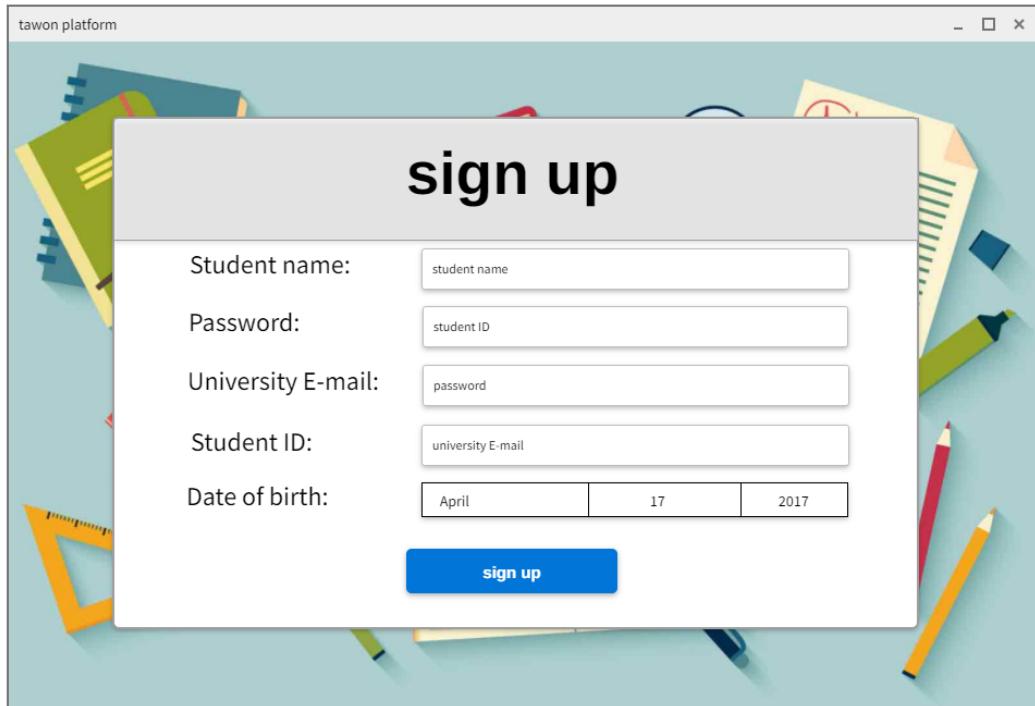


Figure 4.3 Sign-up Page

### 4.3.2 Home page

In figure 4.4 you can see the initial Home Page

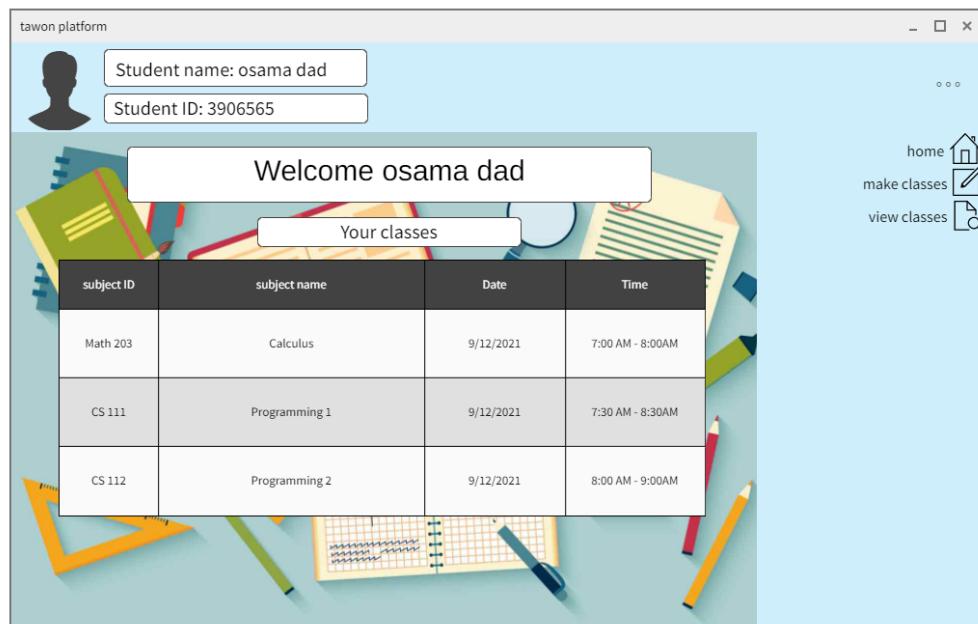


Figure 4.4 Home Page

### 4.3.3 Make a class page

In figure 4.5 you can see the initial Home Page

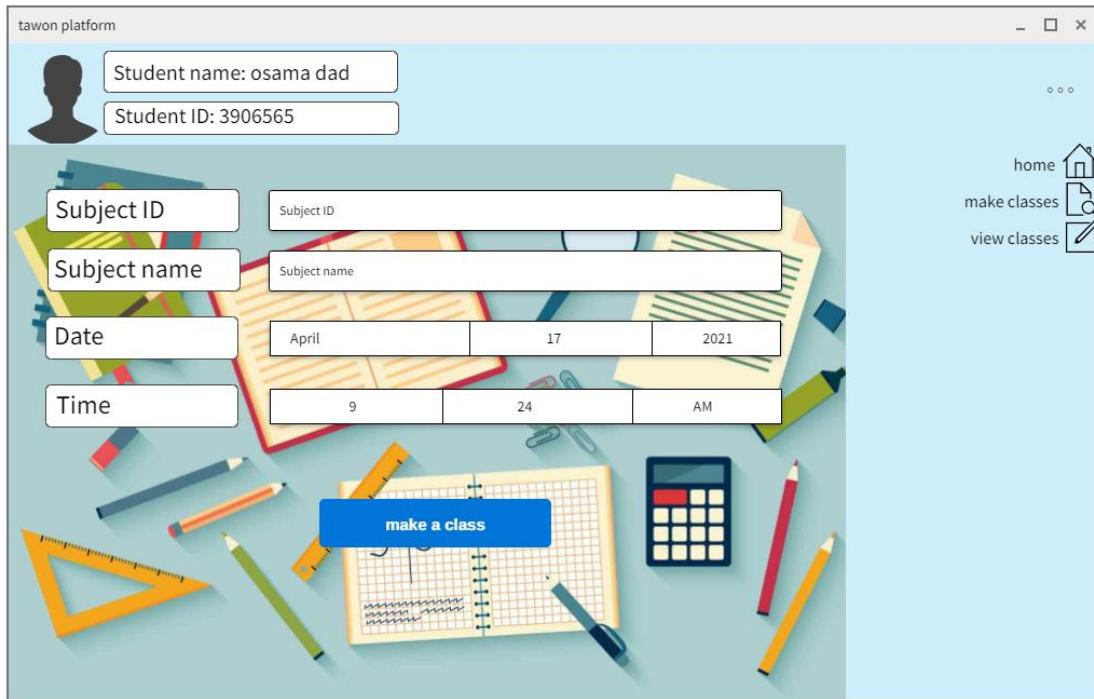


Figure 4.º Make A Class Page

#### 4.3.4 Class schedules

In figure 4.5 you can see the initial class schedules page

Figure 4.º Classes Schedules

#### **4.4 Summary:**

After finishing the initial design for we web site now, we are ready to start working on the implementation phase without any problems, since we are using the Agile methodology, we might change the user interface during the next phase if the end users require us to do that.

## **CHAPTER 5: System Implementation**

# Chapter 5 – Implementation

## 5.1 Introduction

In this chapter, we will talk in detail about the tools we used, programming languages, platforms, every single working tool we used to build out project. After that, we will spotlight the steps we took during the implementation of our website. Also, we will cover some of the challenges we faced during the implementation journey.

## 5.2 Used Tools

In the following section, we will talk in detail about the tools and programming languages we used in our project's implementation process. Which include:

- **Visual studio**
- **C#**
- **Microsoft SQL**
- **Google Form**
- **Microsoft Excel**
- **FileZilla**
- **Zoom Meetings API**

### 5.2.1 Visual studio

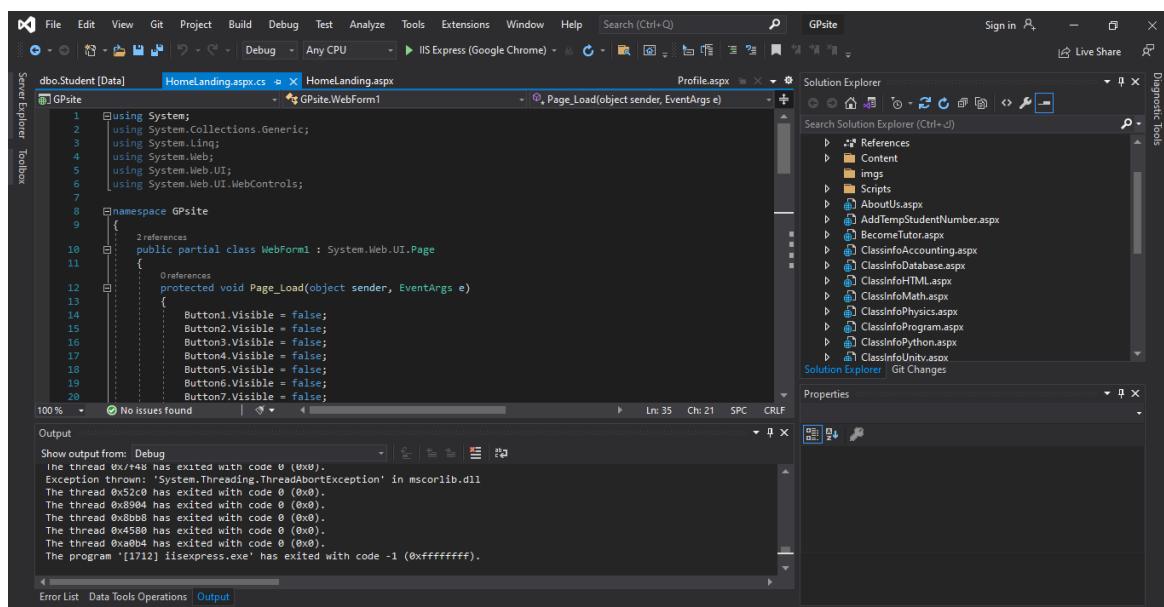


Figure 5. 1 Visual Studio

Visual studio is an integrated development environment (IDE) that support and optimize building web, cloud, and desktop application

Visual studio is also a free and accessible from multiple platforms like windows mac and linux. Many of the feature that visual studio provides such as:

- 1- Support for a lot of languages like c/c++, JavaScript, Python and c#, asp.net which we use for our website.
- 2- Ease of use and other helpful features like autocomplete, syntax highlighting, graphical designing, and easy debugging from the editor.
- 3- Being an open-source project enables third party extensions and themes.
- 4- Built in SQL database for easy connection and access.[8]

## 5.2.2 C#

C# is an object-oriented and safe programming language that uses .net framework that was developed by Anders Heijberg in 2000 that is similar to java and it the programming language for our website.[9]

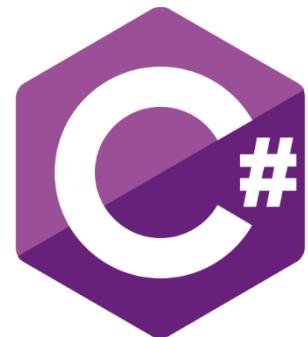


Figure 5. 2 C# Programming Language

## 5.2.3 Microsoft SQL

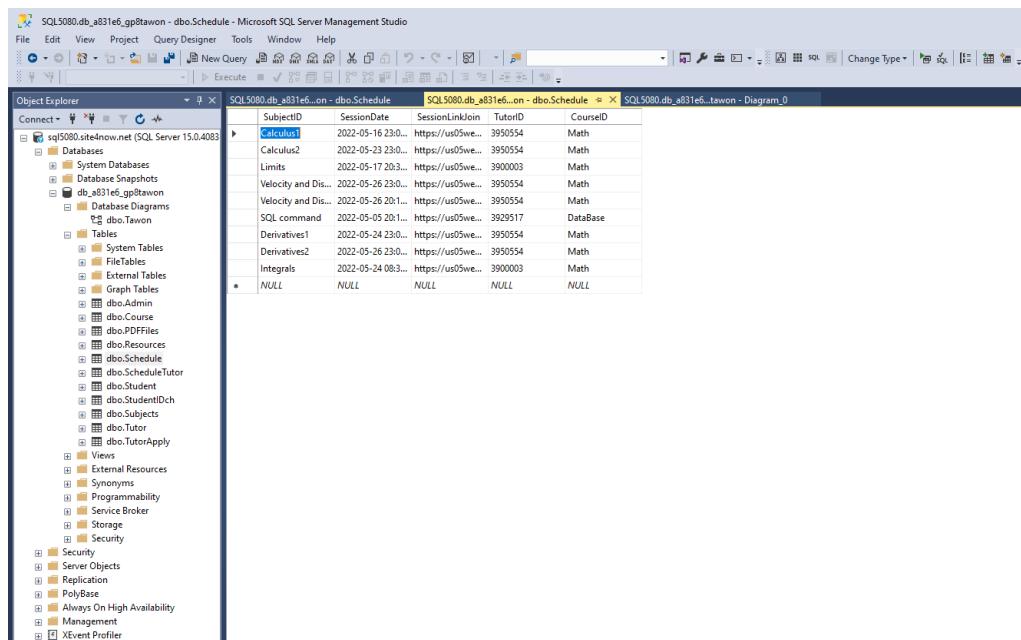


Figure 5. 3 Microsoft SQL Server

Microsoft SQL is a built in database management system in visual studio for storing and managing the website user's data.

## 5.2.4 Google Form

ما مدى تأثير الجائحة على اجتماعيتك مع زملاء الدراسة؟ \*

1 2 3 4 5

دائم ملتحض       دائري على

هل قد واجهت مشكلة في فهم المحتوى التعليمي من معلم المادة؟ \*

نعم   
 لا

برأيك ما مدى جودة التعليم عن بعد؟ \*

1 2 3 4 5

سيئة       ممتاز

هل سبق وأن اختت مقرر تعلمي أو دورة عن بعد؟ \*

نعم   
 لا

Figure 5. 4 Google Form

Google form is a software that allow you to make surveys that we used to collect data about our project idea.[10]

## 5.2.5 Microsoft Excel

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE						
				Start	Task1	Week 2	Week 3	Week 4	Week 5	Week 6																												
				Duration	Start	28/09/2021	Start	10/10/2021	Start	26/10/2021	End	01/11/2021	Start	10/11/2021	Start	20/11/2021	End	01/12/2021	Start	07/12/2021	End	14/12/2021	Start	21/12/2021	End	28/12/2021	Start	03/01/2022	End	10/01/2022	Start	17/01/2022	End	24/01/2022	Start	31/01/2022	End	07/02/2022
1	1	Planning The Project																																				
2	2	Study similar works																																				
3	3	The collection of requirements																																				
4	4	Analysis																																				
5	5	Design																																				
6	6	Preparing and practicing																																				

Figure 5. 5 Microsoft Excel

Is a spreadsheet software program with a data visualization and analysis tool, that we used to make our project timeline.[11]

## 5.2.6 FileZilla

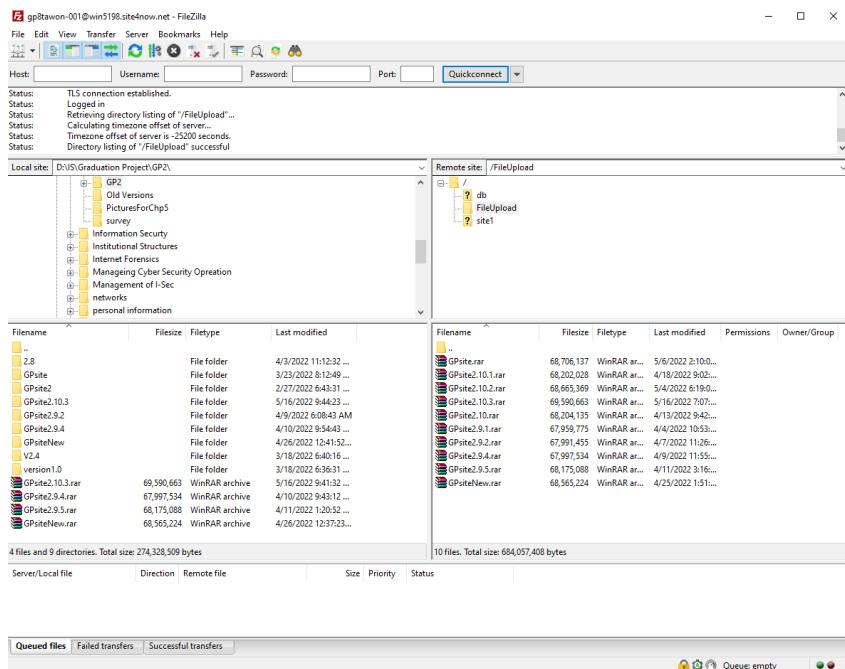


Figure 5. 6 FileZilla FTP

File zilla is a file transfer protocol (FTP) utility that make you transfer file to a remote computer that share the file between, we use FileZilla in sharing our project and working on it together seamlessly.[12]

## 5.2.7 Zoom Meetings API

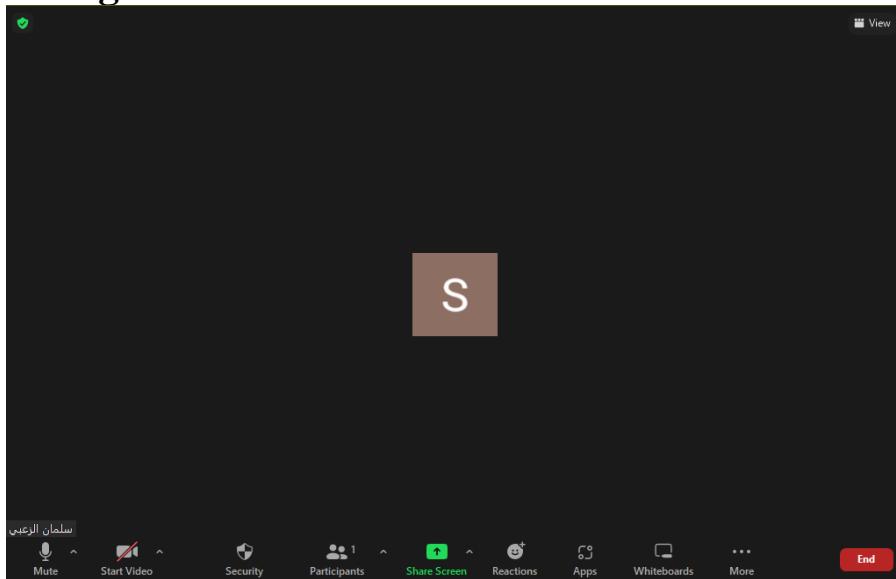


Figure 5. 7 Zoom API Meeting

Zoom is a video conferencing software app, it allows to virtually interact with co-working, family, and friends without meeting them in-person, and we use zoom in our website that allow the tutor and the studding to meet in a zoom call integrated. [13]

## 5.3 Implementation Steps of the Website

In the following section we will be talking about the steps we took to implement our Website

### 5.3.1 Data Collection

We created a temporary data set, because we are unable to get the students data from the collage, however we may integrate the college's database with the student IDs in our website for confirming that the user is a student.

### 5.3.2 Front-End Designing

In this section, we will show you the main interfaces of our website and some details about it

#### 5.3.2.1 Home-Landing

The home page or the so-called home-landing page on our website is a page contain courses and the current courses we have available are mathematics, physics, programming, databases, etc.



Figure 5. 8 Home Landing

### 5.3.2.2 Classes

Class Page: A page containing lecture dates and topics with links to attendees, and containing course's materia

**Class name:** Mathematics

**Class info:** Introduction to mathematics

**Credits:** 3

Tutor Name	Course	Subject	Session Date	Zoom Link
Naseer	Math	Velocity and Distance	5/26/2022 11:00:00 PM	<a href="https://us05web.zoom.us/j/52487024610?pwd=ckZ4bUpRanFxNG3QMHF4QmJtmFOU109">https://us05web.zoom.us/j/52487024610?pwd=ckZ4bUpRanFxNG3QMHF4QmJtmFOU109</a>
Naseer	Math	Derivatives2	5/26/2022 11:00:00 PM	<a href="https://us05web.zoom.us/j/69919210488?pwd=bmD0FCbmh4RWhNm40QW1yM3dxZs09">https://us05web.zoom.us/j/69919210488?pwd=bmD0FCbmh4RWhNm40QW1yM3dxZs09</a>
Naseer	Math	Velocity and Distance2	5/26/2022 01:00:00 PM	<a href="https://us05web.zoom.us/j/67569920843?pwd=U0K6Vm55TtTV59JNKJiT254MzbUJ09">https://us05web.zoom.us/j/67569920843?pwd=U0K6Vm55TtTV59JNKJiT254MzbUJ09</a>
Naseer	Math	Derivatives1	5/24/2022 11:00:00 PM	<a href="https://us05web.zoom.us/j/96087212869?pwd=nMVKK1ZYRHp7RG952Tfrz8BVDA3Qf09">https://us05web.zoom.us/j/96087212869?pwd=nMVKK1ZYRHp7RG952Tfrz8BVDA3Qf09</a>
samer	Math	Integrals	5/24/2022 03:00:00 AM	<a href="https://us05web.zoom.us/j/64777400803?pwd=ZmxlaXRN23V5WDNHOHwVbVbNvnd1QT09">https://us05web.zoom.us/j/64777400803?pwd=ZmxlaXRN23V5WDNHOHwVbVbNvnd1QT09</a>
Naseer	Math	Calculus2	5/23/2022 11:05:00 PM	<a href="https://us05web.zoom.us/j/64313731243?pwd=dldodU1yR29ER1U5SmVP0mlfbcTrndc09">https://us05web.zoom.us/j/64313731243?pwd=dldodU1yR29ER1U5SmVP0mlfbcTrndc09</a>
samer	Math	Limits	5/17/2022 03:00:00 PM	<a href="https://us05web.zoom.us/j/84328447286?pwd=eWIMaFVcFpuvFIRY2vRTb1JsJbQ9">https://us05web.zoom.us/j/84328447286?pwd=eWIMaFVcFpuvFIRY2vRTb1JsJbQ9</a>
Naseer	Math	Calculus1	5/16/2022 11:05:00 PM	<a href="https://us05web.zoom.us/j/62231902444?pwd=VkdulM0NfZ1y5NjR8XIN5Vfbd25mzb09">https://us05web.zoom.us/j/62231902444?pwd=VkdulM0NfZ1y5NjR8XIN5Vfbd25mzb09</a>

**Course Material**

[View Course Materials](#)

Id	name	type	Course
Download 2	Unit 3 (1).pdf	application/pdf	Math
Download 5	lesson23.pdf	application/pdf	Math
Download 9	Assignment.pdf	application/pdf	Math

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**CONTACT**

Madinah, MED 4027  
tawonhelp@gmail.com  
+966 565 185 1574  
+966 563 946 0405

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Figure 5. 9 Course Content

Create your class: On this page, you can create your class smoothly and simply using Zoom app, just put the date and the lecture subject.

ONLINE CLASS

**Create Your Class**

Please Enter the Date and subject of the session

Date and time	03/16/2022 11:01 PM	<input type="button" value=""/>
Subject:	Calculus	<input type="button" value=""/>
Tutor ID:	3950554	<input type="button" value=""/>
Course:	Math	<input type="button" value=""/>

**Create** **Insert**

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tawonhelp@gmail.com  
+966 565 185 9574  
+966 583 946 0485

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**Figure 5. 10 Create Classes**

### 5.3.2.3 Contact us

This is the contact page if you want to contact us via email

Contact us

First name  Last name   
Text

**Submit**

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Home

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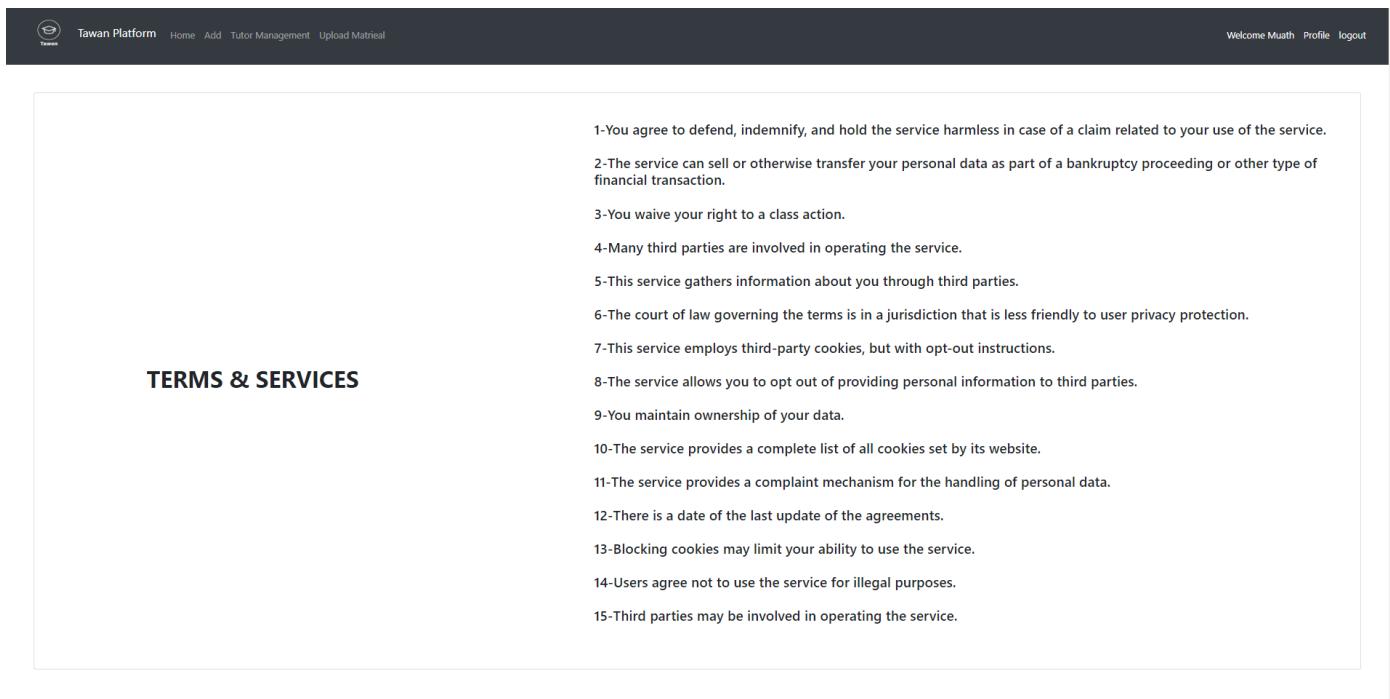
CONTACT

Madinah, MED 4627  
tawonhelp@gmail.com  
+966 565 185 9574  
+966 583 946 0485

**Figure 5. 11 Contact us**

### 5.3.2.4 Terms & Services

The terms and services page, which is a page where all the terms and services on our site are found



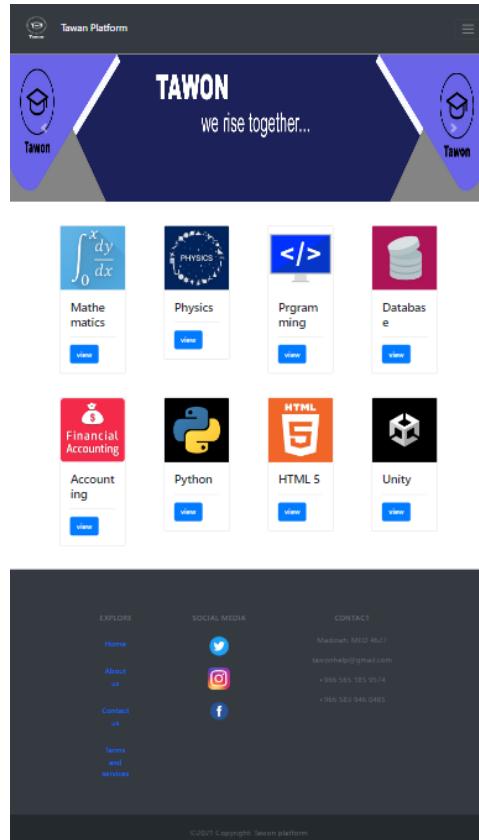
The screenshot shows the 'TERMS & SERVICES' page of the Tawon Platform. At the top, there is a navigation bar with links for 'Home', 'Add', 'Tutor Management', 'Upload Material', 'Welcome Muath', 'Profile', and 'Logout'. The main content area contains a list of 15 numbered statements describing the terms and services. The statements are as follows:

- 1-You agree to defend, indemnify, and hold the service harmless in case of a claim related to your use of the service.
- 2-The service can sell or otherwise transfer your personal data as part of a bankruptcy proceeding or other type of financial transaction.
- 3-You waive your right to a class action.
- 4-Many third parties are involved in operating the service.
- 5-This service gathers information about you through third parties.
- 6-The court of law governing the terms is in a jurisdiction that is less friendly to user privacy protection.
- 7-This service employs third-party cookies, but with opt-out instructions.
- 8-The service allows you to opt out of providing personal information to third parties.
- 9-You maintain ownership of your data.
- 10-The service provides a complete list of all cookies set by its website.
- 11-The service provides a complaint mechanism for the handling of personal data.
- 12-There is a date of the last update of the agreements.
- 13-Blocking cookies may limit your ability to use the service.
- 14-Users agree not to use the service for illegal purposes.
- 15-Third parties may be involved in operating the service.

Figure 5. 12 Terms & Services

### 5.3.2.5 Mobile Compatibility

Our site is fully compatible with mobiles



The screenshot shows the mobile-optimized home landing page of the Tawon Platform. The top features a purple header with the Tawon logo and the tagline 'we rise together..'. Below the header is a grid of 8 service icons arranged in two rows of four. The top row includes 'Mathematics', 'Physics', 'Programming', and 'Database'. The bottom row includes 'Financial Accounting', 'Python', 'HTML 5', and 'Unity'. Each service icon has a 'View' button. At the bottom of the page is a dark footer with sections for 'EXPLORE', 'SOCIAL MEDIA', and 'CONTACT'. The 'EXPLORE' section lists 'Home', 'About us', 'Contact us', and 'Terms and services'. The 'SOCIAL MEDIA' section shows icons for Twitter, Instagram, and Facebook. The 'CONTACT' section provides the address 'Madinah, MJD 4627', email 'tawonhelp@gmail.com', and phone numbers '+966 565 185 9174' and '+966 565 946 0485'. The footer also includes the copyright notice '©2021 Copyright Tawon platform'.

Figure 5. 13 Home-Landing for Mobile

Tutor Name	Course	Subject	Session Date	Zoom Link
Naseer	Math	Velocity and Distance	5/26/2022 11:00:00 PM	<a href="https://us01web.zoom.us/j/8248372448?pwd=UkZ4Q1JhMkRWS0hva4QzWU">https://us01web.zoom.us/j/8248372448?pwd=UkZ4Q1JhMkRWS0hva4QzWU</a>
Naseer	Math	Derivatives2	5/26/2022 11:00:00 PM	<a href="https://us01web.zoom.us/j/899792104?pwd=UkZ4Q1JhMkRWS0hva4QzWU">https://us01web.zoom.us/j/899792104?pwd=UkZ4Q1JhMkRWS0hva4QzWU</a>
Naseer	Math	Velocity and Distance2	5/26/2022 8:18:00 PM	<a href="https://us01web.zoom.us/j/8763499026?pwd=UkZ4Q1JhMkRWS0hva4QzWU">https://us01web.zoom.us/j/8763499026?pwd=UkZ4Q1JhMkRWS0hva4QzWU</a>
Naseer	Math	Derivatives1	5/24/2022 11:05:00 PM	<a href="https://us01web.zoom.us/j/8980872122?pwd=MjVXXLY2V0tpIGZGQ21ml0B8V">https://us01web.zoom.us/j/8980872122?pwd=MjVXXLY2V0tpIGZGQ21ml0B8V</a>
samer	Math	Integrals	5/24/2022 8:30:00 AM	<a href="https://us01web.zoom.us/j/8477740008?pwd=ZmFtaXh2Z3V5W0HICD99WaevI">https://us01web.zoom.us/j/8477740008?pwd=ZmFtaXh2Z3V5W0HICD99WaevI</a>
Naseer	Math	Calculus2	5/23/2022 11:01:00 PM	<a href="https://us01web.zoom.us/j/8415171122?pwd=UkZ4Q1JhMkRWS0hva4QzWU">https://us01web.zoom.us/j/8415171122?pwd=UkZ4Q1JhMkRWS0hva4QzWU</a>
samer	Math	Calculus1	5/22/2022 11:49:00 PM	<a href="https://us01web.zoom.us/j/870300770?pwd=MGZ5MTBucS1uJmRmK1NvZD0">https://us01web.zoom.us/j/870300770?pwd=MGZ5MTBucS1uJmRmK1NvZD0</a>
samer	Math	Limits	5/17/2022 8:30:00 PM	<a href="https://us01web.zoom.us/j/8412844122?pwd=VWJhMjV0IjVlKjQ2dHtrIiM4">https://us01web.zoom.us/j/8412844122?pwd=VWJhMjV0IjVlKjQ2dHtrIiM4</a>
Naseer	Math	Calculus1	5/16/2022 11:05:00 PM	<a href="https://us01web.zoom.us/j/8722190204?pwd=VkdLM0N12H154ja00XNvB6G">https://us01web.zoom.us/j/8722190204?pwd=VkdLM0N12H154ja00XNvB6G</a>

Course Material  
[View Course Materials](#)

$$\int_0^x \frac{dy}{dx}$$

Class name:  
Mathematics  
Class info: Introduction to mathematics  
Credits: 3

Figure 5. 14 Course Content for Mobile

ONLINE CLASS

Create Your Class

Please Enter the Date and subject of the session

Date and time:

Subject:

Tutor ID:

Course:

[Create](#) [Insert](#)

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CONTACT

Madinah, MJD-4627  
laseenthip@gmail.com  
+916 565 185 9174  
+916 563 946 0485

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Figure 5. 15 Create Classes for Mobile

### 5.3.3 Database implementation

In terms of database implementation, we used Microsoft SQL to design and connect the tables to our website we used an online database hosting so my colleagues can access the database whenever they want, and it makes it easier for us to work in parallel.

The following is our current tables:

#### 5.3.3.1 Student

The first table is the student table in this table we store the student information, and it is where the request page inserts the date into.

Column Name	Data Type	Allow Nulls
StudentID	int	<input type="checkbox"/>
StudentName	varchar(50)	<input type="checkbox"/>
StudentPass	varchar(50)	<input type="checkbox"/>
StudentMail	varchar(50)	<input type="checkbox"/>
StudentBirth	date	<input type="checkbox"/>
Role	varchar(50)	<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

Figure 5. 16 Student Table

#### 5.3.3.2 Course

Course table is responsible for storing the available courses in the website.

Column Name	Data Type	Allow Nulls
CourseName	varchar(50)	<input type="checkbox"/>
CourseID	varchar(50)	<input type="checkbox"/>

Figure 5. 17 Course Table

#### 5.3.3.3 Tutor

The Tutor table contains the information of the current tutors and the course they're assigned to teach.

Column Name	Data Type	Allow Nulls
TutorID	int	<input type="checkbox"/>
TutorName	varchar(50)	<input type="checkbox"/>
TutorMail	varchar(50)	<input type="checkbox"/>
CourseID	varchar(50)	<input type="checkbox"/>
		<input type="checkbox"/>

Figure 5. 18 Tutor Table

### 5.3.3.4 Tutor Apply

This table is designed to store the application of the student who wants to become a tutor.

Column Name	Data Type	Allow Nulls
StudentID	int	<input type="checkbox"/>
StudentName	varchar(50)	<input type="checkbox"/>
CourseID	varchar(50)	<input type="checkbox"/>
Message	varchar(MAX)	<input checked="" type="checkbox"/>
		<input type="checkbox"/>

Figure 5. 19 Tutor Apply Table

### 5.3.3.5 Student Id check

This table stores the ID of the students in Taibah university.

Column Name	Data Type	Allow Nulls
StudentIDcheck	int	<input type="checkbox"/>
		<input type="checkbox"/>

Figure 5. 20 Student Id Check Table

### 5.3.3.6 Schedule

In this table we store the session information to be available for the user.

Column Name	Data Type	Allow Nulls
SubjectID	varchar(50)	<input type="checkbox"/>
SessionDate	datetime	<input type="checkbox"/>
SessionLinkJoin	varchar(MAX)	<input type="checkbox"/>
TutorID	int	<input type="checkbox"/>
CourseID	varchar(50)	<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

Figure 5. 21 Schedule Table

### 5.3.3.7 Schedule Tutor

This table I used to store the Tutors sessions to be available for the tutor in his schedule page.

Column Name	Data Type	Allow Nulls
SubjectID	varchar(50)	<input type="checkbox"/>
SessionDate	datetime	<input type="checkbox"/>
SessionLinkHost	varchar(MAX)	<input type="checkbox"/>
TutorID	int	<input type="checkbox"/>
CourseID	varchar(50)	<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

Figure 5. 22 Schedule Tutor Table

### 5.3.3.8 Admin

This table is used to store the current admin's information.

Column Name	Data Type	Allow Nulls
AdminID	int	<input type="checkbox"/>
AdminName	varchar(50)	<input type="checkbox"/>

Figure 5. 23 Admin Table

### 5.3.3.9 PDF Files

This table is to store the uploaded files and its directory.

Column Name	Data Type	Allow Nulls
<b>Id</b>	int	<input type="checkbox"/>
name	varchar(50)	<input checked="" type="checkbox"/>
type	varchar(50)	<input checked="" type="checkbox"/>
data	varbinary(MAX)	<input checked="" type="checkbox"/>
Course	varchar(50)	<input checked="" type="checkbox"/>
		<input type="checkbox"/>

Figure 5. 24 PDF Files Table

### 5.3.4 Back-End Coding

We used C# for most of our backend coding as it works flawlessly with the Asp.net environment, one of the primary codes we used is the SQL connection function, so we retrieve data from the database for most of the website as well as the checking for the user's role in most of the pages as some of the sections of our website is restricted for Tutors and Students only.

Here some of the codes we used:

#### 5.3.4.1 Tutor Apply

In this code we check if the role of the user is Student or not if it is a student it precedes to the page and it restive the user data from the database like the student name and the id, as well as the available courses in our website.

If the user decided to apply he/she could fill a message box for the admins. If he applies the site runs code in the background to check if the student already applied or if he is a tutor, then it insert the data into a table called 'TutorApply' to be shown in the Tutor Management page.

```

protected void Page_Load(object sender, EventArgs e)
{
    if ((string)Session["Role"] != "Student")
    {
        Response.Redirect("Login.aspx");
    }
    else
    {
        SqlConnection conn = new SqlConnection("Data Source=SQL5080.site4now.net;Initial Catalog=db_a831e6_gp8tawon;User Id=db_a831e6_gp8tawon_admin;Password=GP8Tawon@-");
        string sql;
        sql = "SELECT * FROM Student where StudentID ='" + Session["StudentID"] + "' ";
        SqlCommand comm = new SqlCommand(sql, conn);
        conn.Open();
        comm.ExecuteNonQuery();
        SqlDataReader reader = comm.ExecuteReader();
        if (reader.Read())
        {
            TextBox1.Text = ((string)reader["StudentName"]);
            TextBox2.Text = Convert.ToString((int)reader["StudentID"]);
        }
        reader.Close();
        conn.Close();
    }
}

protected void Button1_Click(object sender, EventArgs e)
{
    SqlConnection conn = new SqlConnection("Data Source=SQL5080.site4now.net;Initial Catalog=db_a831e6_gp8tawon;User Id=db_a831e6_gp8tawon_admin;Password=GP8Tawon@-");
    conn.Open();
    SqlCommand checkifmatch = new SqlCommand("select Convert(varchar(10),TutorialID) from Tutor where Convert(varchar(10),TutorialID)='"+ TextBox2.Text + "'", conn);
    string sid = (string)checkifmatch.ExecuteScalar();
    conn.Close();
    if (sid == TextBox2.Text)
    {
        Label1.Text = "You are Already a Tutor";
        Response.Redirect("HomeLanding.aspx");
    }
    conn.Open();
    SqlCommand checkifidmatchap = new SqlCommand("select Convert(varchar(10),StudentID) from TutorApply where Convert(varchar(10),StudentID)='"+ TextBox2.Text + "'", conn);
    string sidap = (string)checkifidmatchap.ExecuteScalar();
    conn.Close();
    if (sidap == TextBox2.Text)
    {
        Label1.Text = "You Already applied";
    }
    else
    {
        conn.Open();
        string sql;
        sql = "insert into TutorApply (StudentName,StudentID,CourseID,Message) values('"+ TextBox1.Text + "','" + TextBox2.Text + "','" + DropDownList1.SelectedValue + "','" + TextBox3.Text + "')";
        SqlCommand comm = new SqlCommand(sql, conn);
        comm.ExecuteNonQuery();
        conn.Close();
        ScriptManager.RegisterStartupScript(this, this.GetType(), "alert",
            "alert('Applied successfully');window.location ='HomeLanding.aspx';", true);
    }
}

```

Figure 5. 25 Tutor Apply Back-end Code

### 5.3.4.2 Forget password

If the user forgets his password, he can get it here by typing his email address and to check if the email matches a record in the database in the textbox then to be sent be the platform email automatically by getting the user password from the database.

```

protected void ResetPass_Click(object sender, EventArgs e)
{
    SqlConnection conn = new SqlConnection("Data Source=SQL5080.site4now.net;Initial Catalog=db_a831e6_gp8tawon;User Id=db_a831e6_gp8tawon_admin;Password=GP8Tawon@-");
    conn.Open();
    SqlCommand checkifidmatch = new SqlCommand("select StudentPass from Student where StudentMail='" + Email.Text + "'", conn);
    string pass = (string)checkifidmatch.ExecuteScalar();
    conn.Close();
    if (pass == null)
    {
        ErrorM.Text = "Look like the Email you entered is not correct";
    }
    else
    {
        string fromAddress = "TawonHelp@gmail.com";// Gmail Address from where you send the mail
        string toAddress = Email.Text;
        const string fromPassword = "GP8Tawon@-";//Password of your gmail address
        string subject = "Tawon help";

        string body = ("Hello, \nlook like you have lose your password this is your password" + "\n" + pass );
        var smtp = new System.Net.Mail.SmtpClient();
        {
            smtp.Host = "smtp.gmail.com";
            smtp.Port = 587;
            smtp.EnableSsl = true;
            smtp.UseDefaultCredentials = false;
            smtp.DeliveryMethod = System.Net.Mail.SmtpDeliveryMethod.Network;
            smtp.Credentials = new NetworkCredential(fromAddress, fromPassword);

        }
        smtp.Send(fromAddress, toAddress, subject, body);
        ClientScript.RegisterClientScriptBlock(this.GetType(), "s", "window.alert('E-mail send successfully ')", true);
    }
}

0 references
protected void Back_Click(object sender, EventArgs e)
{
    Response.Redirect("Login.aspx");
}

```

Figure 5. 26 Forget Password Back-end Code

### 5.3.4.3 Registration page

The registration page uses a code to check if the student is a student in Taibah university as the condition is absolute in our website.

The code checks the Student ID Textbox if the student ID matches the one in the table Called 'StudentIDch' it will register successfully otherwise it will show a message telling the user that he/she is not a student at Taibah university.

The rest of the code is to validate the email and password to not be Null as well as the Accept terms of service checkbox and to check if the user is already registered.

```

0 references
protected void Button1_Click(object sender, EventArgs e)
{
    SqlConnection conn = new SqlConnection("Data Source=SQL5080.site4now.net;Initial Catalog=db_a831e6_gp8tawon;User Id=db_a831e6_gp8tawon_admin;Password=GP8Tawon@-");
    conn.Open();
    SqlCommand checkifidmatch = new SqlCommand("select Convert(varchar(10),StudentIDcheck) from StudentIDch where Convert(varchar(10),StudentIDcheck)='" + SID.Text + "'", conn);

    string SID = (string)checkifidmatch.ExecuteScalar();
    conn.Close();
    if (SID == SID.Text)
    {
        if (Sname.Text != string.Empty && SEmail.Text != string.Empty && SDob.Text != string.Empty && SPass.Text != string.Empty)
        {
            try
            {
                if (CheckBox1.Checked == true)
                {
                    conn.Open();

                    String sql;
                    sql = "insert into Student (StudentName,StudentID,StudentMail,StudentBirth,StudentPass,Role) values('" + Sname.Text + "','" + SID.Text + "','" + SEmail.Text + "','" + SDob.Text + "','" + SPass.Text + "','" + "Student" + "')";

                    SqlCommand comm = new SqlCommand(sql, conn);

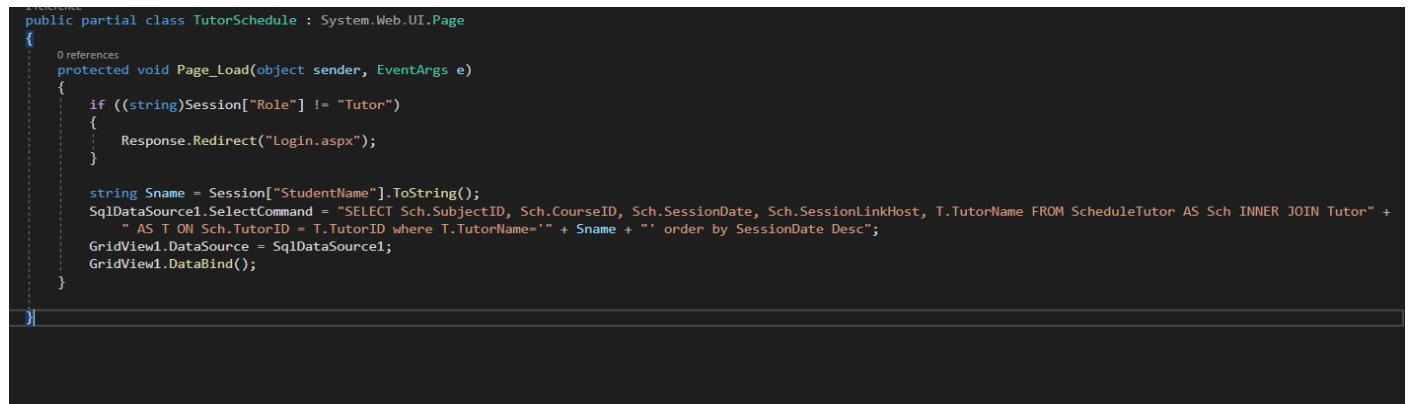
                    comm.ExecuteNonQuery();
                    conn.Close();
                    ScriptManager.RegisterStartupScript(this, this.GetType(), "alert", "alert('Registered successfully')window.location = 'Login.aspx';", true);
                }
            }
            catch
            {
                WarningM.Text = "some information is wrong or you already registered";
            }
        }
        else
        {
            WarningM.Text = "You must accept the terms of services.";
        }
    }
    else
    {
        WarningM.Text = "Please enter all your information";
    }
}
else
{
    WarningM.Text = "This Student ID doesn't exist you must be a student at taibah university to register ";
}

```

Figure 5. 27 Registration page Back-end Code

### 5.3.4.4 Tutor Schedule page

This page is only for tutors here they can check their schedule and to get the meeting link, The following code check the tutor id in order to show the information in the Grid View. It is important to check the tutor id as every tutor has his own meetings and course



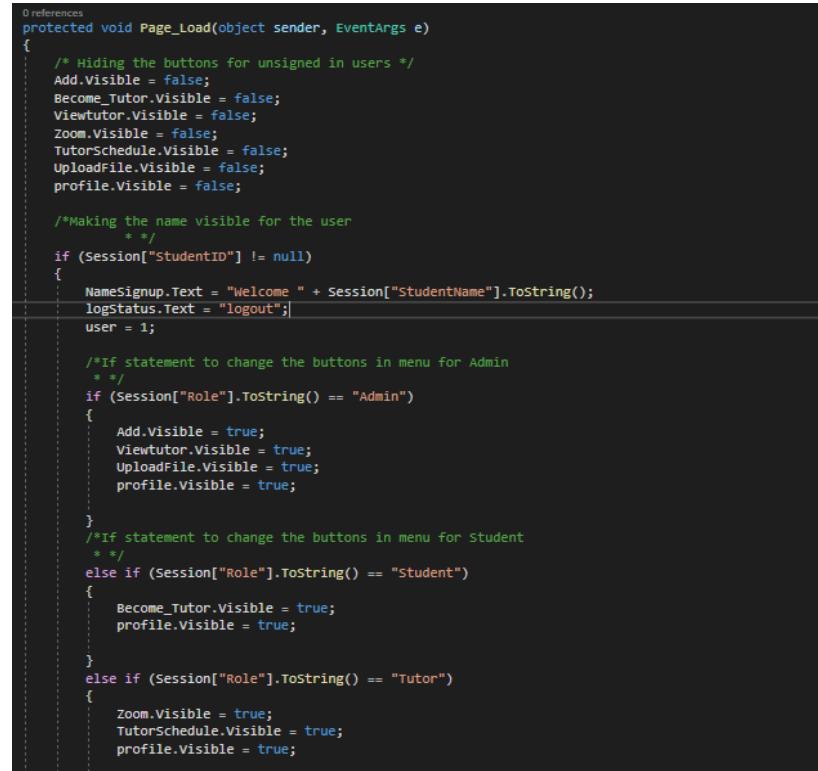
```
0 references
public partial class TutorSchedule : System.Web.UI.Page
{
    protected void Page_Load(object sender, EventArgs e)
    {
        if ((string)Session["Role"] != "Tutor")
        {
            Response.Redirect("Login.aspx");
        }

        string Sname = Session["StudentName"].ToString();
        SqlDataSource1.SelectCommand = "SELECT Sch.SubjectID, Sch.CourseID, Sch.SessionDate, Sch.SessionLinkHost, T.TutorName FROM ScheduleTutor AS Sch INNER JOIN Tutor" +
            " AS T ON Sch.TutorID = T.TutorID where T.TutorName=" + Sname + " order by SessionDate Desc";
        GridView1.DataSource = SqlDataSource1;
        GridView1.DataBind();
    }
}
```

Figure 5. 28 Tutor Schedule Back-end Code

### 5.3.4.5 Master page

Master page is the main theme for our website instead of repeating the same code for every page we used the Master page which is provided in the ASP.NET where it applies to every page of the website it contains the navbar and the footer which are the main parts of the site so the user can navigate the site. First code hides the buttons of the navbar for the unsigned in user and if the user signed in it checks his role and his id to write his name in the navbar and give him access to student navbar by making the buttons visible. The same applies for the Tutor and the Admin.



```
0 references
protected void Page_Load(object sender, EventArgs e)
{
    /* Hiding the buttons for unsigned in users */
    Add.Visible = false;
    Become_Tutor.Visible = false;
    Viewtutor.Visible = false;
    Zoom.Visible = false;
    Tutorschedule.Visible = false;
    Uploadfile.Visible = false;
    profile.Visible = false;

    /*Making the name visible for the user
     */
    if (Session["StudentID"] != null)
    {
        NameSignup.Text = "Welcome " + Session["StudentName"].ToString();
        logstatus.Text = "logout";
        user = 1;

        /*If statement to change the buttons in menu for Admin
         */
        if (Session["Role"].ToString() == "Admin")
        {
            Add.Visible = true;
            Viewtutor.Visible = true;
            Uploadfile.Visible = true;
            profile.Visible = true;
        }

        /*If statement to change the buttons in menu for Student
         */
        else if (Session["Role"].ToString() == "Student")
        {
            Become_Tutor.Visible = true;
            profile.Visible = true;
        }

        else if (Session["Role"].ToString() == "Tutor")
        {
            Zoom.Visible = true;
            TutorSchedule.Visible = true;
            profile.Visible = true;
        }
    }
}
```

Figure 5. 29 Master Page Back-end Code

```
        }
    else
    {
        user = 0;
    }
}

0 references
protected void Home_Click(object sender, EventArgs e)
{
    Response.Redirect("HomeLanding.aspx");
}

0 references
protected void ContactUs_Click(object sender, EventArgs e)
{
    Response.Redirect("ContactUs.aspx");
}

0 references
protected void AboutUs_Click(object sender, EventArgs e)
{
    Response.Redirect("AboutUs.aspx");
}

0 references
protected void Add_Click(object sender, EventArgs e)
{
    Response.Redirect("AddTempStudentNumber.aspx");
}

0 references
protected void BecomeTutor_Click(object sender, EventArgs e)
{
    Response.Redirect("BecomeTutor.aspx");
}

0 references
protected void Zoom_click(object sender, EventArgs e)
{
    Response.Redirect("ZoomAPI.aspx");
}
```

Figure 5. 30 Master Page Back-end Code

```
0 references
protected void Viewtutor_Click(object sender, EventArgs e)
{
    Response.Redirect("ManageTutor.aspx");
}

0 references
protected void TutorSchedule_Click(object sender, EventArgs e)
{
    Response.Redirect("TutorSchedule.aspx");
}

0 references
protected void UploadFile_Click(object sender, EventArgs e)
{
    Response.Redirect("UploadFile.aspx");
}

0 references
protected void profile_Click(object sender, EventArgs e)
{
    Response.Redirect("Profile.aspx");
}

0 references
protected void NameSignup_Click(object sender, EventArgs e)
{
    if (user == 1)
    {
        Response.Redirect("HomeLanding.aspx");
    }
    else
    {
        Response.Redirect("Registration.aspx");
    }
}

0 references
protected void logStatus_Click(object sender, EventArgs e)
{
    if (user == 1)
    {
        Session.Clear();
        Response.Redirect("HomeLanding.aspx");
    }
    else
    {
        Response.Redirect("Login.aspx");
    }
}

0 references
protected void TermsAndServices_Click(object sender, EventArgs e)
{
    Response.Redirect("TermsAndServices.aspx");
}
```

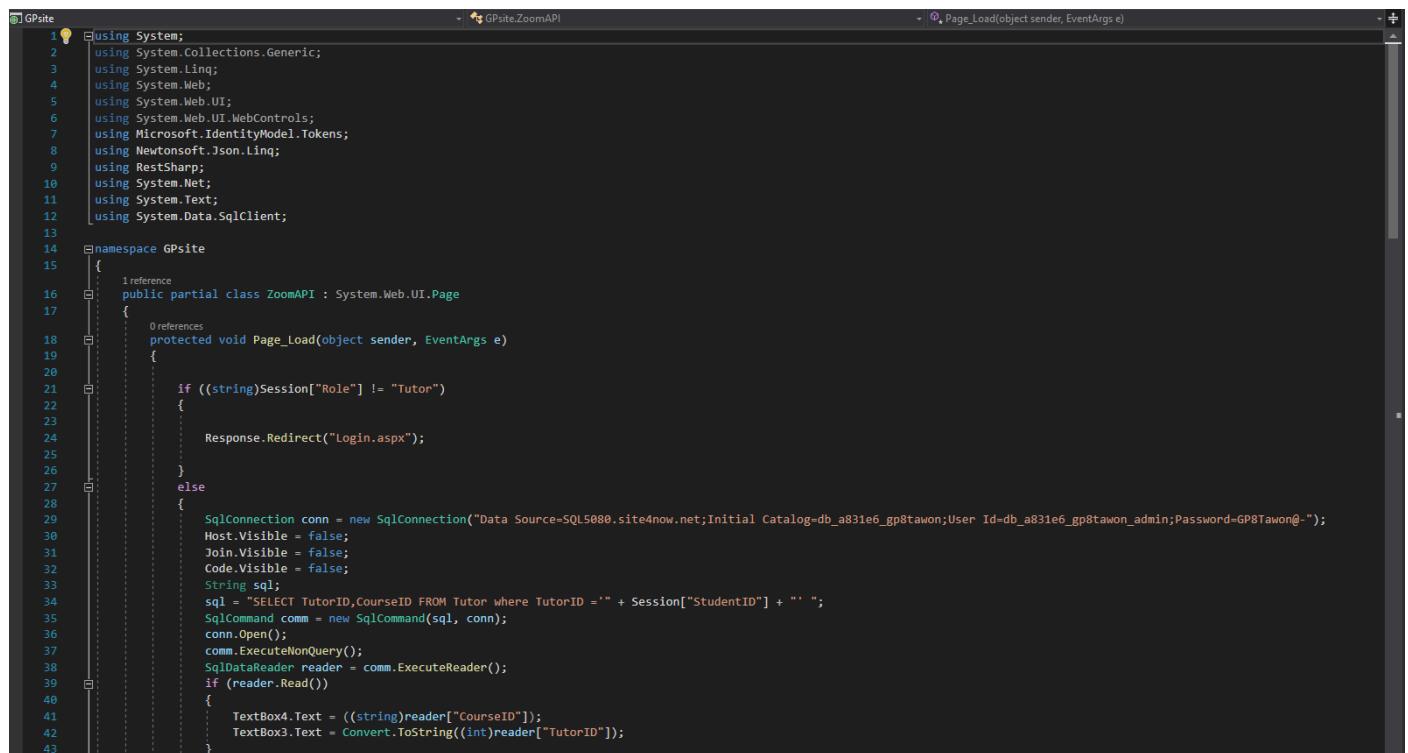
Figure 5.31 Master Page Back-end Code

## 5.4 Important Codes

In this section we are going to highlight and explain some of the most important codes that took place in our project

### 5.4.1 Zoom API

One of the most important codes that we used is the code to integrate the Zoom application with our website, so we use JWT (JSON Web Tokens) which is to create sessions without the need for login permission.



```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Web;
5  using System.Web.UI;
6  using System.Web.UI.WebControls;
7  using Microsoft.IdentityModel.Tokens;
8  using Newtonsoft.Json.Linq;
9  using RestSharp;
10 using System.Net;
11 using System.Text;
12 using System.Data.SqlClient;
13
14 namespace GPsite
15 {
16     public partial class ZoomAPI : System.Web.UI.Page
17     {
18         protected void Page_Load(object sender, EventArgs e)
19         {
20
21             if ((string)Session["Role"] != "Tutor")
22             {
23
24                 Response.Redirect("Login.aspx");
25
26             }
27             else
28             {
29                 SqlConnection conn = new SqlConnection("Data Source=SQL5080.site4now.net;Initial Catalog=db_a831e6_gp8tawon;User Id=db_a831e6_gp8tawon_admin;Password=GP8Tawon@-");
30                 Host.Visible = false;
31                 Join.Visible = false;
32                 Code.Visible = false;
33                 String sql;
34                 sql = "SELECT TutorID,CourseID FROM Tutor where TutorID ='" + Session["StudentID"] + "' ";
35                 SqlCommand comm = new SqlCommand(sql, conn);
36                 conn.Open();
37                 comm.ExecuteNonQuery();
38                 SqlDataReader reader = comm.ExecuteReader();
39                 if (reader.Read())
40                 {
41                     TextBox4.Text = ((string)reader["CourseID"]);
42                     TextBox3.Text = Convert.ToString((int)reader["TutorID"]);
43                 }
44             }
45         }
46     }
47 }
```

Figure 5.32 Zoom API Back-end Code

```

54     protected void Button1_Click(object sender, EventArgs e)
55     {
56         /*{userId}: you can use your Zoom Username.
57         */
58         topic: Topic for the meeting
59         duration: Duration of the meeting
60         start_time: Set the start time for the meeting
61         type: We use 2 For Scheduled meeting
62
63         Here we use DataFormat.Json for format as we created JWT.
64         */
65         var tokenHandler = new System.IdentityModel.Tokens.Jwt.JwtSecurityTokenHandler();
66         var now = DateTime.UtcNow;
67         var apiSecret = "UFRj98dLSyFirHSebEUvVd0UE5xms3zy";
68         byte[] symmetricKey = Encoding.ASCII.GetBytes(apiSecret);
69
70         var tokenDescriptor = new SecurityTokenDescriptor
71         {
72             Issuer = "Ffz9XuArSN60kFc110tDQ",
73             Expires = now.AddSeconds(300),
74             SigningCredentials = new SigningCredentials(new SymmetricSecurityKey(symmetricKey), SecurityAlgorithms.HmacSha256),
75         };
76
77         var token = tokenHandler.CreateToken(tokenDescriptor);
78         var tokenString = tokenHandler.WriteToken(token);
79
80         var client = new RestClient("https://api.zoom.us/v2/users/TawonHelp@gmail.com/meetings");
81         var request = new RestRequest(Method.POST);
82         request.RequestFormat = DataFormat.Json;
83         request.AddJsonBody(new { topic = TextBox2.Text, duration = "10", start_time = TextBox1.Text, type = "2" });
84         request.AddHeader("authorization", String.Format("Bearer {0}", tokenString));
85
86         IRestResponse restResponse = client.Execute(request);
87         HttpStatusCode statusCode = restResponse.StatusCode;
88         int numericStatusCode = (int)statusCode;
89         JObject jobject = JObject.Parse(restResponse.Content);
90         Host.Text = (string)jobject["start_url"];
91         Join.Text = (string)jobject["join_url"];
92         Code.Text = Convert.ToString(numericStatusCode);
93         Label2.Text = TextBox1.Text;
94         Label2.Text = Label2.Text.Replace("T", " ");
95
96
97

```

Figure 5.33 Zoom API Back-end Code

```

98
99
100    protected void Button2_Click(object sender, EventArgs e)
101
102        SqlConnection conn = new SqlConnection("Data Source=SQL5088.site4now.net;Initial Catalog=db_a831e6_gp8tawon;User Id=db_a831e6_gp8tawon_admin;Password=GP8Tawon@-");
103        String sql;
104        sql = "insert into Schedule (SubjectID,SessionDate,SessionLinkJoin,TutorID,CourseID) values" +
105        "('" + TextBox2.Text + "','" + Label2.Text + "','" + Join.Text + "','" + TextBox3.Text + "','" + TextBox4.Text + "')";
106
107        sql += "insert into ScheduleTutor (SubjectID,SessionDate,SessionLinkHost,TutorID,CourseID) values" +
108        "('" + TextBox2.Text + "','" + Label2.Text + "','" + Host.Text + "','" + TextBox3.Text + "','" + TextBox4.Text + "')";
109        SqlCommand comm = new SqlCommand(sql, conn);
110        conn.Open();
111        comm.ExecuteNonQuery();
112        Label1.Text = "Scheduled successfully";
113
114
115

```

Figure 5.34 Zoom API Back-end Code

## 5.4.2 Tutor Management

Teacher management: On this page we have done several things, the most important of which is to send an application to become a tutor. His data will appear to the admins on this page, and he will be accepted or rejected through the site automatically without going to the Database and deleting him from the student's table and adding him to the tutor's table and this the curriculum is called Subsystem.

**Current Tutors**

TutorID	TutorName	TutorMail	CourseID
3800000	Osama	Moa@taibah.com	Programming
3900003	samer	3900003@taibah.com	Math
3900004	Ammar	ammar.1997a@gmail.com	Math
3900006	Mousa	3900005@gg.com	Physics
3900009	Yasser	3900008@gg.com	DataBase
3900015	Suhaib	suhaib@taibahu.edu.sa	Physics
3900099	khaled	3900099@taibah.com	Math
3900554	Mohammed	3900554@taibah.com	Default
3950554	Naseer	Naser@taibahu.edu.sa	Math

**Tutor Applications**

Select Student ID:

Name:

Email:

Birth date:

Course:

**Figure 5. 35 Tutor Management Front-end**

hello

Student Message:

EXPLORE

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SOCIAL MEDIA


CONTACT

Madinah, MED 4627  
tawonhelp@gmail.com  
+966 565 185 9574  
+966 583 946 0485

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**Figure 5. 36 Tutor Management Front-end**

Also on this page, if the student is accepted or rejected, a direct email will be sent to him and either the acceptance message “Thank you for taking the time to consider becoming a tutor (His Name) We are happy to inform you that you've been accepted as a tutor you can login now and create classes“ or the rejection message “Thank you for taking the time to

consider becoming a tutor (His Name) after careful consideration we regret to inform you that we decided not to move forward with your application you can apply again" will appear in his registered email.

```

102 protected void Button2_Click(object sender, EventArgs e)
103 {
104     SqlConnection conn = new SqlConnection("Data Source=SQL5080.site4now.net;Initial Catalog=db_a831e6_gp8tawon;User Id=db_a831e6_gp8tawon_admin;Password=GP8Tawon@-");
105
106     String sql;
107     if (TextBox1.Text == "")
108     {
109         ClientScript.RegisterClientScriptBlock(this.GetType(), "s", "window.alert('Please click refresh to view user information');", true);
110     }
111     else
112     {
113         sql = "delete from TutorApply where StudentID=" + DropDownList1.SelectedValue + "";
114
115         SqlCommand comm = new SqlCommand(sql, conn);
116         conn.Open();
117         comm.ExecuteNonQuery();
118         conn.Close();
119
120         SmtpClient SmtpServer = new SmtpClient("smtp.gmail.com");
121         var mail = new MailMessage();
122         mail.From = new MailAddress("TawonHelp@gmail.com");
123         mail.To.Add(textBox2.Text); // receiver email address
124         mail.Subject = "Tawon Platform team";
125         mail.IsBodyHtml = true;
126
127         mail.Body = ("Thank you for taking the time to consider becoming a tutor " + TextBox1.Text + " " + <br /> + <br />
128             + "after careful consideration we regret to inform you that we decided not to move forward with " +
129             "your application." + <br /> + "you can apply again." + <br /> + "Regards," + <br /> + <br /> + "Tawon Platform team.");
130
131         SmtpServer.Port = 587;
132         SmtpServer.UseDefaultCredentials = false;
133         SmtpServer.Credentials = new System.Net.NetworkCredential("TawonHelp@gmail.com", "GP8Tawon@-");
134
135         SmtpServer.EnableSsl = true;
136         SmtpServer.Send(mail);
137         ClientScript.RegisterClientScriptBlock(this.GetType(), "s", "window.alert('Rejected Successfully');", true);
138         Response.Redirect("ManageTutor.aspx");
139     }
140 }

```

Figure 5. 37 Tutor Management Front-end

```

63 protected void Button1_Click(object sender, EventArgs e)
64 {
65     SqlConnection conn = new SqlConnection("Data Source=SQL5080.site4now.net;Initial Catalog=db_a831e6_gp8tawon;User Id=db_a831e6_gp8tawon_admin;Password=GP8Tawon@-");
66     if (TextBox1.Text == "")
67     {
68         ClientScript.RegisterClientScriptBlock(this.GetType(), "s", "window.alert('Please click refresh to view user information');", true);
69     }
70     else
71     {
72         String sql;
73         sql = "insert into Tutor (TutorID,TutorName,TutorMail,CourseID) values('" + DropDownList1.SelectedValue + "','" + TextBox1.Text + "','" + TextBox2.Text + "','" + DropDownList1.SelectedValue + "')";
74         sql += "delete from TutorApply where StudentID=" + DropDownList1.SelectedValue + "";
75         sql += "UPDATE Student SET Role ='" + "Tutor" + "' where StudentID=" + DropDownList1.SelectedValue + "";
76
77
78         SqlCommand comm = new SqlCommand(sql, conn);
79         conn.Open();
80         comm.ExecuteNonQuery();
81         conn.Close();
82         SmtpClient SmtpServer = new SmtpClient("smtp.gmail.com");
83         var mail = new MailMessage();
84         mail.From = new MailAddress("TawonHelp@gmail.com");
85         mail.To.Add(textBox2.Text); // receiver email address
86         mail.Subject = "Tawon Platform Team";
87         mail.IsBodyHtml = true;
88         mail.Body = ("Thank you for taking the time to consider becoming a tutor " + TextBox1.Text + " " + <br /> + <br />
89             + "We are happy to inform you that you've been accepted as a tutor you can login now and create classes " +
90             "<br />" + "Regards," + <br /> + <br /> + "Tawon Platform Team.");
91
92         SmtpServer.Port = 587;
93         SmtpServer.UseDefaultCredentials = false;
94         SmtpServer.Credentials = new System.Net.NetworkCredential("TawonHelp@gmail.com", "GP8Tawon@-");
95
96         SmtpServer.EnableSsl = true;
97         SmtpServer.Send(mail);
98         ClientScript.RegisterClientScriptBlock(this.GetType(), "s", "window.alert('Added Successfully');", true);
99
100        Response.Redirect("ManageTutor.aspx");
101    }
102 }

```

Figure 5. 38 Tutor Management Front-end

## 5.5 System Testing

In this point after verifying that the system runs probably and integrated well, we are going run a usability test to demonstrate how a user going to interact with the website.

### 5.5.1 register / login

First. The user must click on the sign-up button

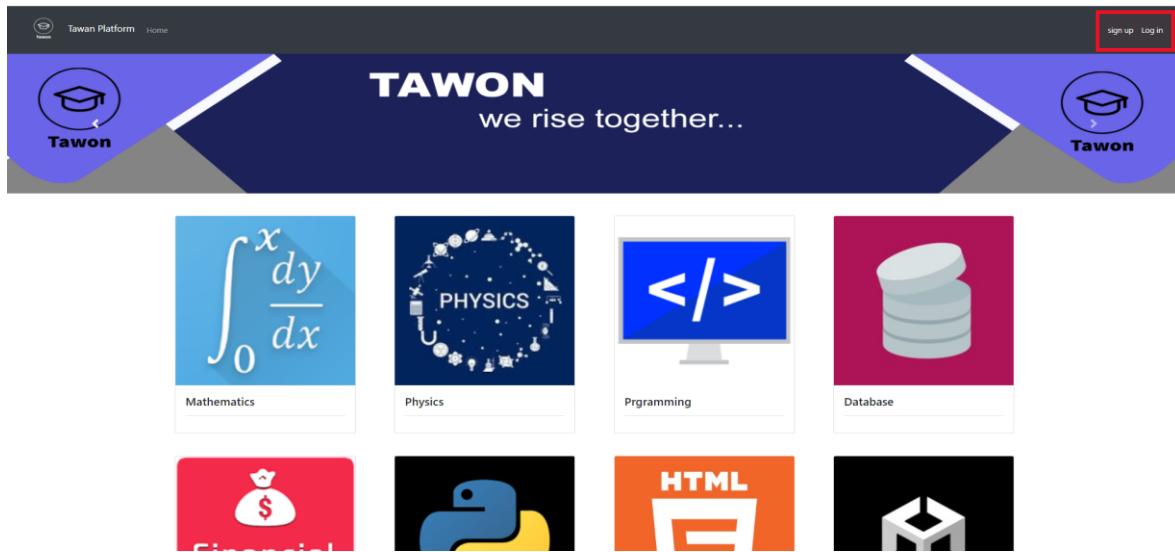


Figure 5. 39 Register / Login

After that he must fill his information and click on the submit button  
(if his ID number exists in the college he will be able to create an account)

## Sign up

Student Name

Student ID

Email

Birth  
 dd/mm/yyyy

Password

Repeat your password

I agree all statements in [Terms of service](#)



Figure 5. 40 Sign up

After creating the account, he can simply click on the Login button and fill his id and password to login.

## Sign in

Student ID

Password

[Forgot password?](#)

don't have an account? [Sign up!](#)

Figure 5. 41 Sign in

## 5.5.2 attending a class

After creating an account and logging in the user can basically click on the Home button to show the available courses

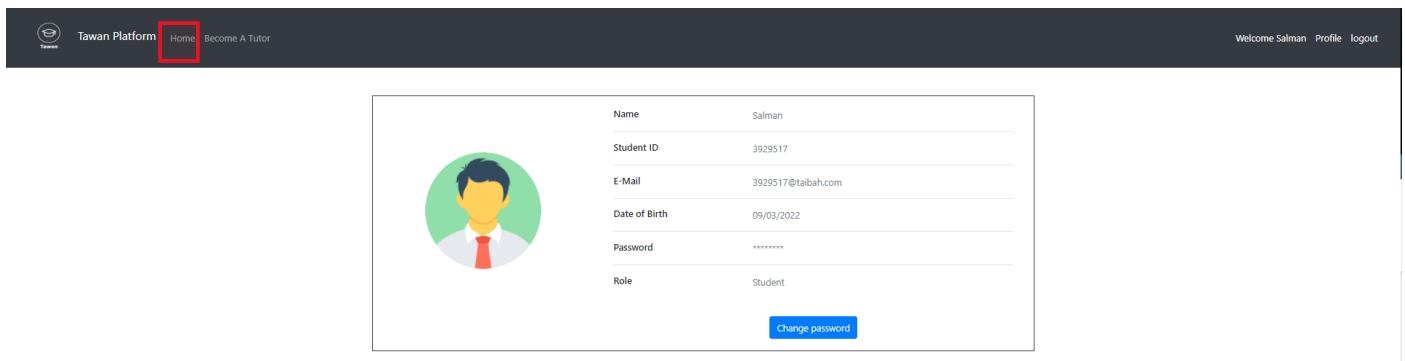


Figure 5. 42 Attending a Class

The user now chooses the course he wants to attend

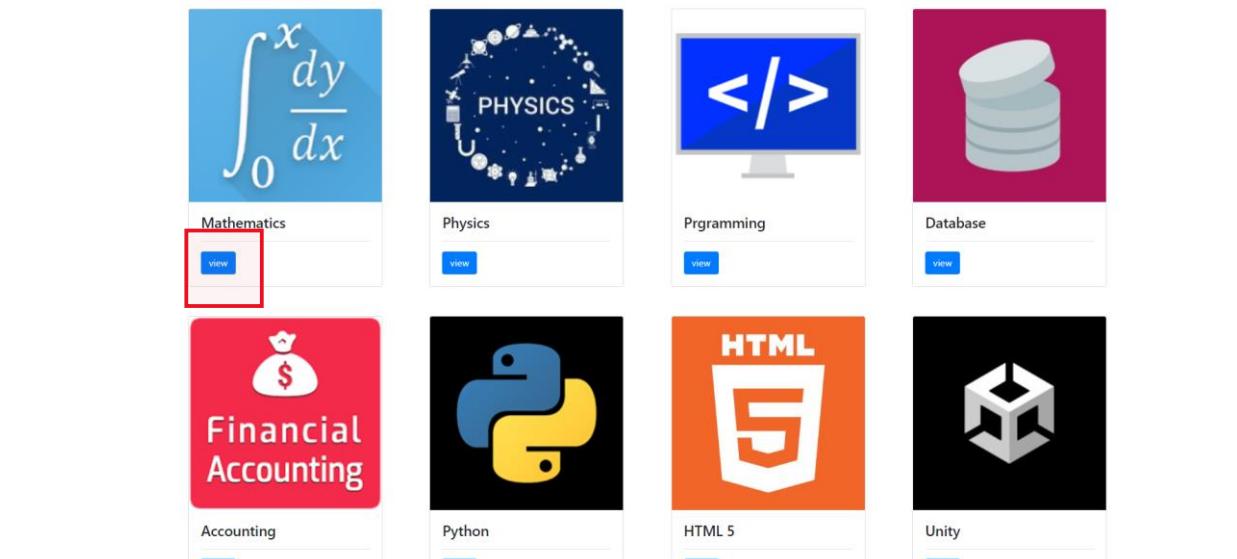


Figure 5. 43 Attending a Class

The student can now see the available classes and download the subject's material.

Class name

Course content

In this course we will talk about....

Tutor Name	Course	Subject	Session Date	Zoom Link
Naseer	Math	Velocity and Distance	26/05/2022 23:08:00	<a href="https://us05web.zoom.us/j/82487024610?pwd=ckZ4bUpRanFxNG9QMH4QmJtenFOUT09">https://us05web.zoom.us/j/82487024610?pwd=ckZ4bUpRanFxNG9QMH4QmJtenFOUT09</a>
Naseer	Math	Derivatives2	26/05/2022 23:08:00	<a href="https://us05web.zoom.us/j/89919210489?pwd=bml2OGFCbmhkRWn6Nm40QWUjyM3dsZz09">https://us05web.zoom.us/j/89919210489?pwd=bml2OGFCbmhkRWn6Nm40QWUjyM3dsZz09</a>
Naseer	Math	Velocity and Distance2	26/05/2022 20:18:00	<a href="https://us05web.zoom.us/j/87569920643?pwd=UC96Vm55TlttVS93NXJiT254Mz8tUT09">https://us05web.zoom.us/j/87569920643?pwd=UC96Vm55TlttVS93NXJiT254Mz8tUT09</a>
Naseer	Math	Derivatives1	24/05/2022 23:05:00	<a href="https://us05web.zoom.us/j/88087212269?pwd=MIVXX1ZYRHpTRG95Z1FmRzBBVDA3QT09">https://us05web.zoom.us/j/88087212269?pwd=MIVXX1ZYRHpTRG95Z1FmRzBBVDA3QT09</a>
samer	Math	Integrals	24/05/2022 08:30:00	<a href="https://us05web.zoom.us/j/84777408803?pwd=ZmxHaXRnZ3V5WDiHOHvwbvBNVnd1QT09">https://us05web.zoom.us/j/84777408803?pwd=ZmxHaXRnZ3V5WDiHOHvwbvBNVnd1QT09</a>
Naseer	Math	Calculus2	23/05/2022 23:05:00	<a href="https://us05web.zoom.us/j/84313731243?pwd=dldodUYR29ER1U5SmVPbmFjCtnz09">https://us05web.zoom.us/j/84313731243?pwd=dldodUYR29ER1U5SmVPbmFjCtnz09</a>
samer	Math	Limits	17/05/2022 20:30:00	<a href="https://us05web.zoom.us/j/84328447286?pwd=eWIMaFJvdFpuVFlky2lVRERb1jsQT09">https://us05web.zoom.us/j/84328447286?pwd=eWIMaFJvdFpuVFlky2lVRERb1jsQT09</a>
Naseer	Math	Calculus1	16/05/2022 23:05:00	<a href="https://us05web.zoom.us/j/82231902444?pwd=VkdUMDNFZH5NjlsRXJNSVJbd25mdz09">https://us05web.zoom.us/j/82231902444?pwd=VkdUMDNFZH5NjlsRXJNSVJbd25mdz09</a>

Course Material

[View Course Materials](#)

Id	Name	Type	Course
Download 2	Unit 3 (1).pdf	application/pdf	Math
Download 5	lesson23.pdf	application/pdf	Math
Download 9	Assignment.pdf	application/pdf	Math

$$\int_0^x \frac{dy}{dx}$$

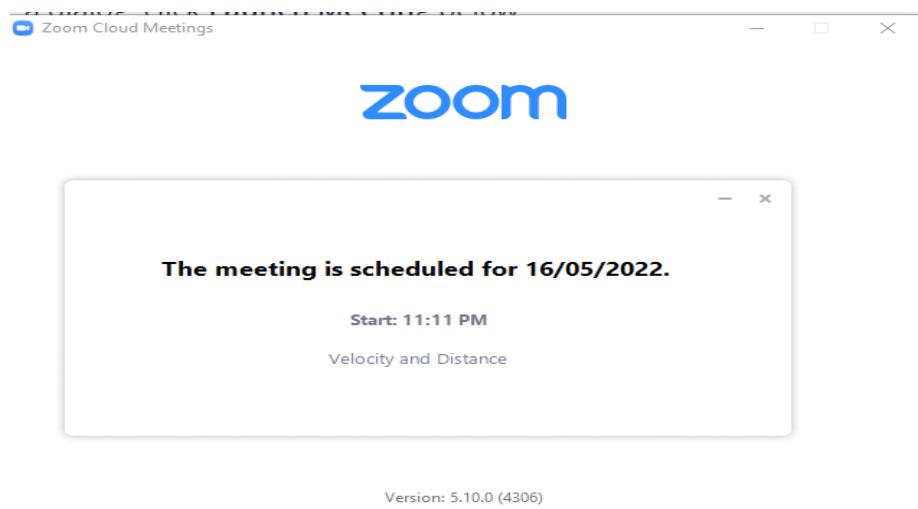
Class name:  
Mathematics

Class info: Introduction to mathematics

Credits: 3

Figure 5. 44 Attending a Class

After clicking on the class link the student will be redirected to zoom window where he can join the class.



Attending a Class  .Figure 5

### 5.5.3 Becoming a tutor

The student can become a tutor simply by clicking the 'Become a tutor' button

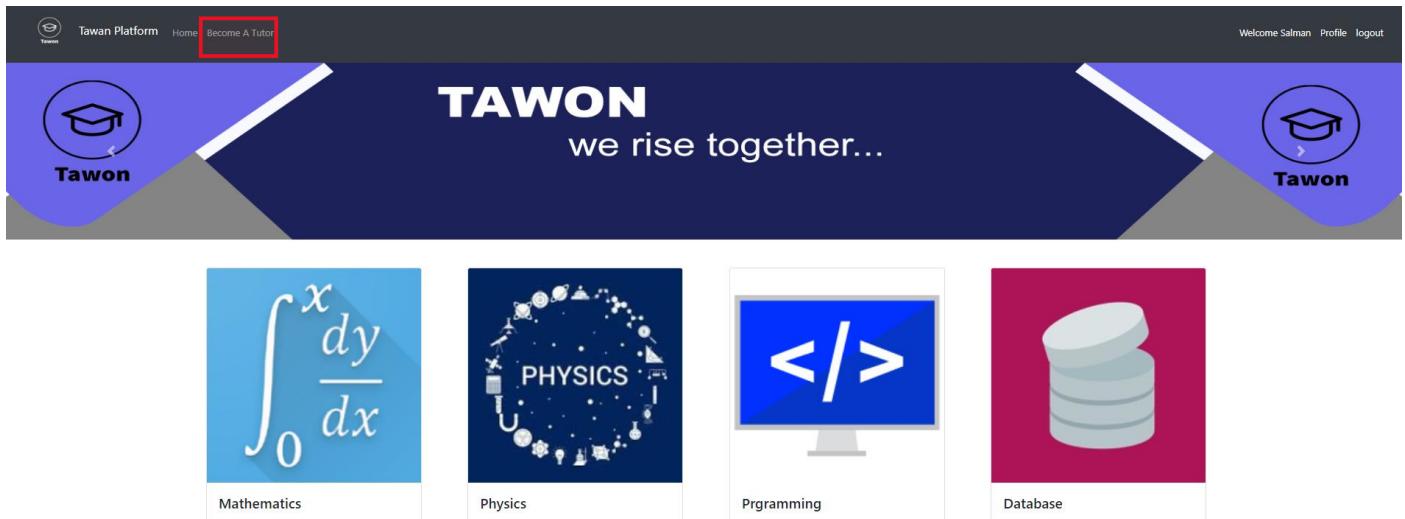


Figure 5. 46 Become A tutor

To apply the student must write a brief introduction about him self and select which course he would like to teach.

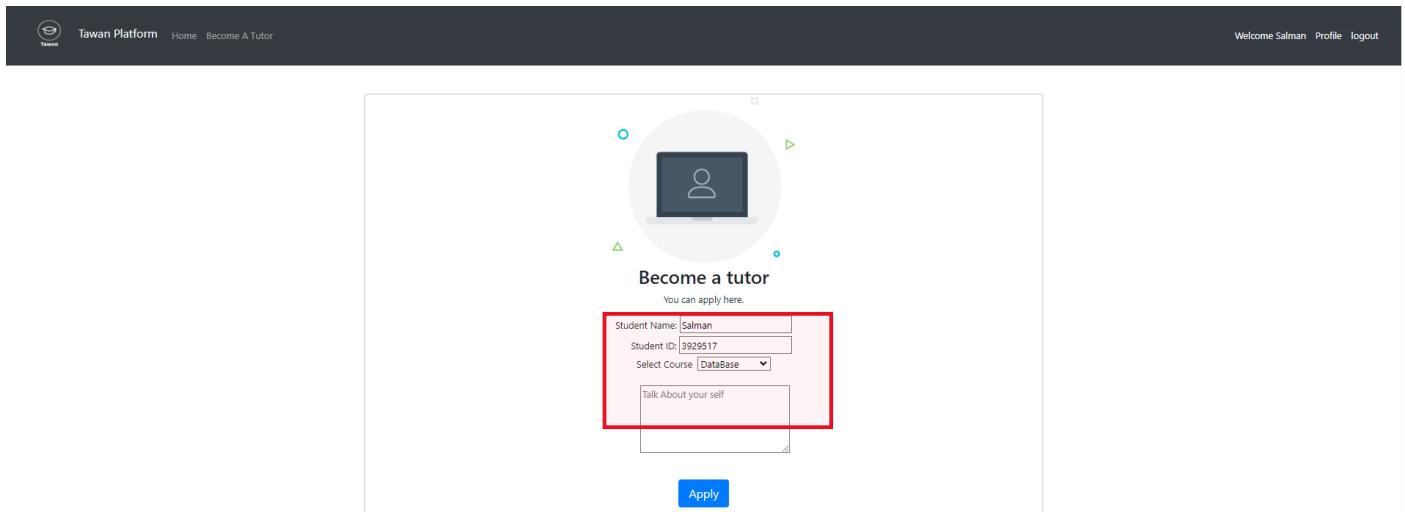


Figure 5. 47 Become a tutor

Later on the student will receive a message on the email to see if he has been accepted to become a tutor.

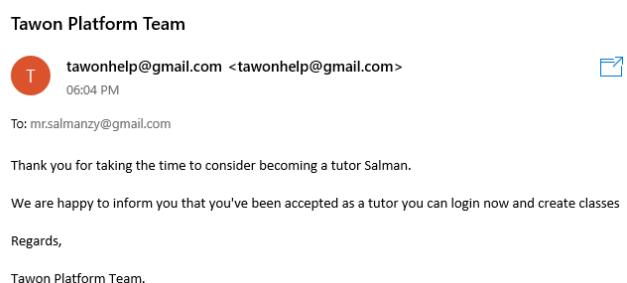


Figure 5. 48 Become a tutor

## 5.5.4 scheduling a class

For scheduling a class the tutor have to click on 'create a class' button .

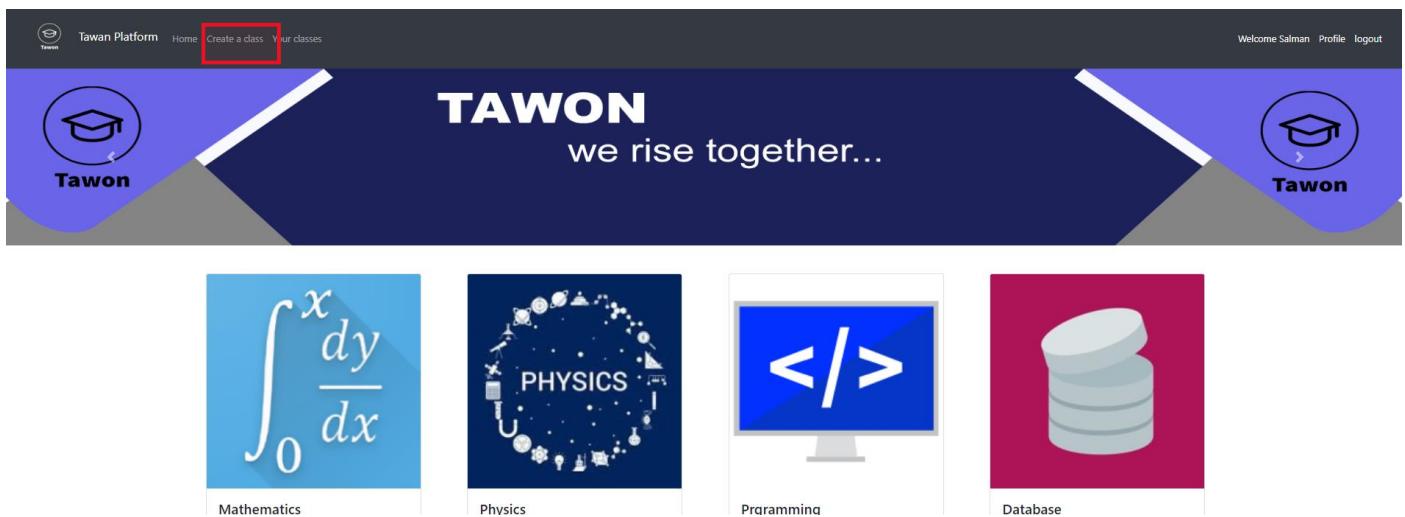


Figure 5. 49 Scheduling a class

Now the tutor have to fill the information and then click create to schedule the new class.

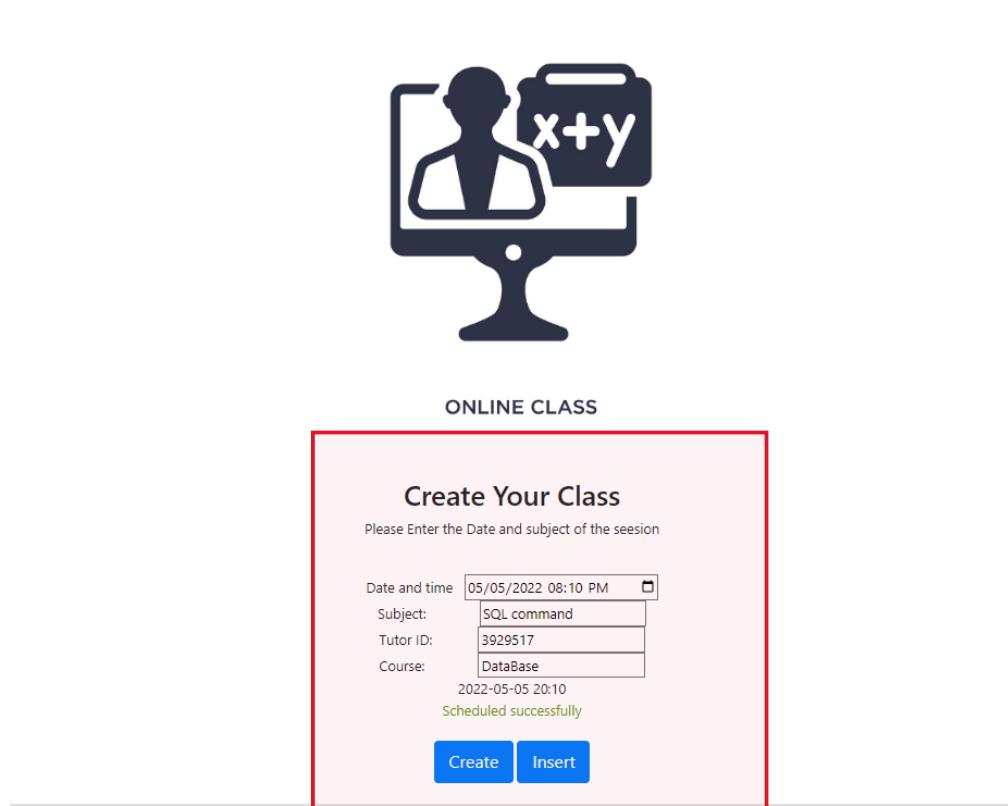
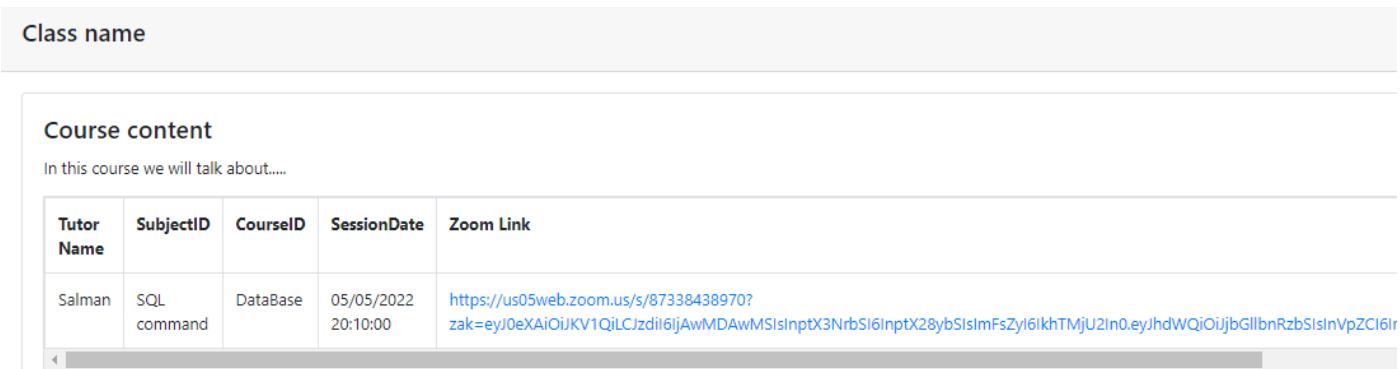


Figure 5. 50 Scheduling a class

The class details will be added automatically to 'your classes' page



Class name

Course content

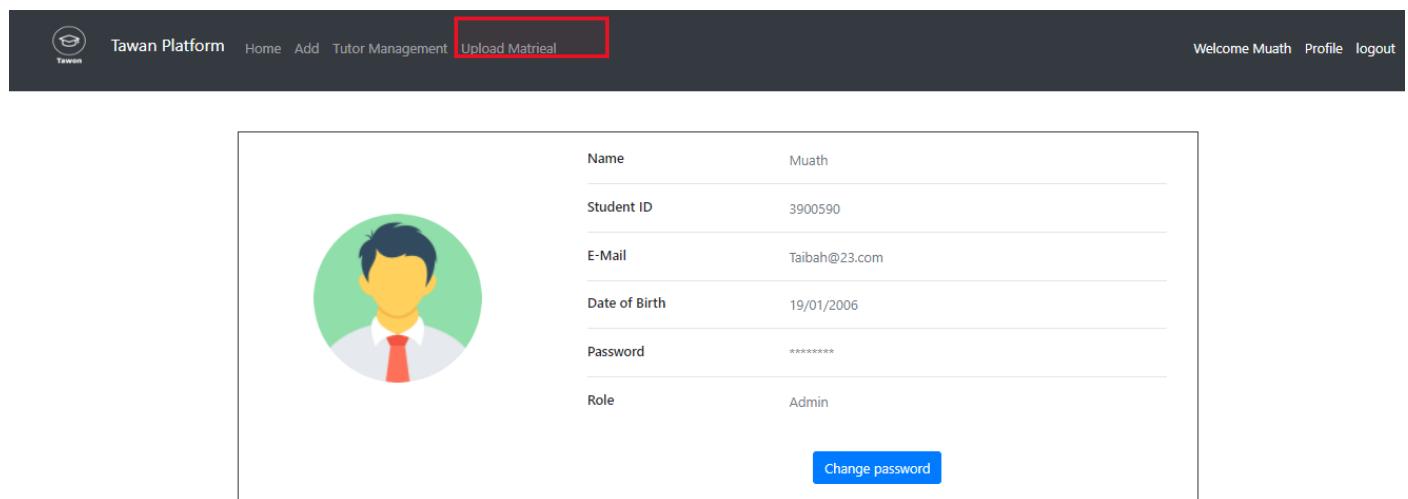
In this course we will talk about.....

Tutor Name	SubjectID	CourseID	SessionDate	Zoom Link
Salman	SQL command	DataBase	05/05/2022 20:10:00	<a href="https://us05web.zoom.us/s/87338438970?zak=eyJ0eXAiOiJKV1QiLCJzdII6IjAwMDAwMSIsInptX3NrbSI6InptX28ybSislmFsZyI6ikhTMjU2In0eyJhdWQiOiJbGIlbnRzbSIsInVpZCI6Iz">https://us05web.zoom.us/s/87338438970?zak=eyJ0eXAiOiJKV1QiLCJzdII6IjAwMDAwMSIsInptX3NrbSI6InptX28ybSislmFsZyI6ikhTMjU2In0eyJhdWQiOiJbGIlbnRzbSIsInVpZCI6Iz</a>

Figure 5. 51 Scheduling a class

### 5.5.5 Uploading course's materials

When an admin wants to upload course's materials first he has to click on 'Upload Material' button



Tawan Platform Home Add Tutor Management **Upload Matrial** Welcome Muath Profile logout

	Name Muath
Student ID	3900590
E-Mail	Taibah@23.com
Date of Birth	19/01/2006
Password	*****
Role	Admin

[Change password](#)

Figure 5. 52 Uploading course's materials

after that he drag and drop the files and select which subjects he wants

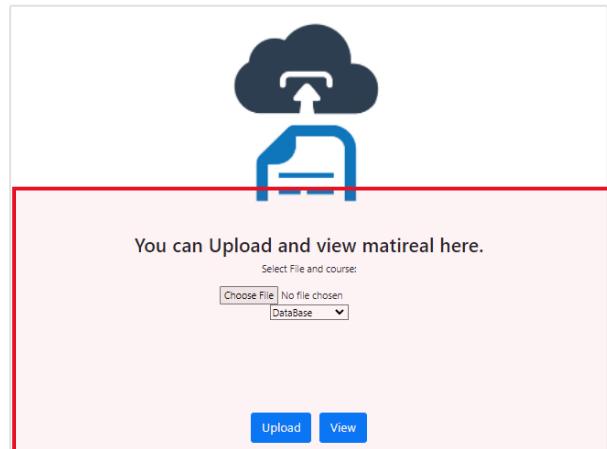


Figure 5. 53 Uploading course's materials

## 5.6 Summery

In this chapter, we talked about the tools that we used during the building of our project, also we highlighted the most important work in the Front-End and Back-End. We ran a usability test to experience how the cycle of using our website works.

## **CHAPTER 6: Conclusion and Future Work**

## **6.1 Conclusion**

Sense the world is evolving pretty fast we must keep up with the technology and stop following the classic trends, we aimed in our project to make the university experience more enjoyable and more beneficial by listing down the problems we had and trying to convert it to a real world product, we managed to build our website where it has three main roles, we have the student who just want to benefit from our services, also we have a tutor for any passionate student who wants to help others to have a better understanding, and we play the admin role where we try to keep everything under control and keep on upgrading our project when its needed.

## **6.1 Future Work**

In the future, we will work on improving our website by adding new features that will improve the quality of our project. We are planning to add multiple languages in our website. Also, we plan on making it available in every university in Saudi Arabia. If we get approved, we would like to start giving certificate to those who teach in our website. We also might expand the scope by making our website provide courses for subjects that is not being taught in our university. What have we done is just the beginning of a long journey of upgrading and improving until we reach the complete satisfaction.

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## Appendix:



### منصة تعاون

نحن طلاب قسم نظم المعلومات الحاسوبية بكلية علوم وهندسة الحاسوب الإلكتروني  
نضع بين أيديكم هذا الاستبيان الذي أنشأ بغرض المساعدة في مشروع التخرج.  
وهو يستهدف طلاب جامعة طيبة حيث يتيح للطلاب إنشاء جلسات مساعدة دروس تقوية لبعضهم البعض

الإسم

Short answer text

\* العمر

Short answer text

\* مامدك تأثير الجائحة على اجتماعاتك مع زملاء الدراسة؟

1 2 3 4 5

كثير ملخص

كثير عالي

\* هل قد واجهت مشكلة في فهم المواقف التعليمية من معلم المادة؟

نعم

لا

\* يرايك مامدك جودة التعليم عن بعد؟

1 2 3 4 5

سيئة

معذرة

\* هل سبق وان اخذت مقرر تعليمي او دورة عن بعد؟

نعم

لا

\* مامدك رعيتك باخذ جلسات مساعدة او دروس تقوية عن طريق زملاء الدراسة عن بعد (بدون معلم)؟

أرجو بضده

أرجو

لا اعلم

لا ارجو

لا ارجو بضده

**\* هل قد واجهت مشكلة في فهم المواقف الدراسية من معلم المادة؟**

نعم

لا

+
⤵
⤶
⤷
⤸
⤹

**\* برأيك ممدى جودة التعليم عن بعد؟**

1      2      3      4      5

سيئة                                    ممتازة

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⤸
⤹

**\* هل سبق وان اخذت مقرر تعليمي او دورة عن بعد؟**

نعم

لا

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**\* مامدى رغبتك باخذ جلسات مساعدة او دروس تقوية عن طريق زملاء الدراسة عن بعد (بدون معلم)؟**

أرحب بذلك

أرحب

لا أعلم

لا أرحب

لا أرحب بذلك

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⤹

**\* هل تفضل استخدام جهاز الكمبيوتر او الهاتف المحمول لحضور الدورات والدروس التعليمية عن بعد؟**

جهاز الكمبيوتر

الهاتف المحمول

⤵
⤶
⤷
⤸
⤹

**\* هل تفضل المذاكرة او المراجعة مع زملاء الدراسة او توحدك؟**

أفضل بذلك

أفضل

لا أعلم

لا أفضل

لا أفضل بذلك

⤵
⤶
⤷
⤸
⤹

**\* على اي مستوى تفضل وجود هذه الخدمة؟**

مستوى الكلية

مستوى الجامعة

مستوى جامعات المملكة العربية السعودية

⤵
⤶
⤷
⤸
⤹

**\* ماهي الخاصية التي ترثب بتوفرها في الموقع؟**

Long answer text

⤵
⤶
⤷
⤸
⤹