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الجامعة الإسلامية – غزة
كلية تكنولوجيا المعلومات
قسم تطوير البرمجيات
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GGTS

Graduation Groups Tracking System for faculty of information technology

نظام متابعة مشاريع التخرج لكلية تكنولوجيا المعلومات

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Abstract

At the beginning of the fourth study year (graduate year for most student in IT faculty) the semester begins and students begin to create groups for a graduation project and choose a supervisor for group. In this operation, many students cannot find a suitable group or the group cannot find the missing member, at the same time there is difficulty with the graduation research committee to manage, organize and export statistics for graduation groups. This project aims to develop a web site and android mobile application to help students to find a group, supervisor and make all this operation in order way and help the graduation research committee manage, order, and control these groups. We use an agile scrum in this project. This project help by minimize paper works as possible in the graduation research committee and help students to find a suitable group. Our project help follow up graduation committee to manage and organize graduation groups by use a nice and easy to use admin panel, our project also helps supervisors by handle students request in easy way and show their groups, and help students to create their groups in simple and easy way.

الملخص

في بداية السنة الدراسية الرابعة (سنة التخرج في كلية تكنولوجيا المعلومات) يبدأ الفصل ويبدأ الطلاب معها تكوين فريق لبحث ومشروع التخرج واختيار مشرف للمشروع، هذه العملية يواجه العديد من الطلاب مشكلة عدم ايجاد فريق مناسب له او الفريق لا يجد شخص مناسب يستكمل به الفريق. وبنفس الوقت هنالك صعوبة لدى لجنة بحث التخرج في ادارة هذه المجموعات وتنظيمها واستخراج احصائيات لطلبة التخرج. يهدف المشروع لإنشاء موقع ويب تساعده الطلبة بإنشاء مجموعاتهم واختيار مشرفهم، وتطبيق جوال لمساعدة لجنة مشروع في التخرج من مراقبة المجموعات وادارتها. ولقد استخدمنا منهجية (Agile scrum) في تطوير المشروع. ويساعد هذا المشروع في التخفيف من الاعمال الورقية المستخدمة في ادارة مشاريع التخرج ويساعد الطلبة في تسهيل اختيار اعضاء فريقهم واختيار مشرفهم وايضا يساعد لجنة مشروع التخرج في مراقبة المجموعات وادارة المجموعات بطريقة سهلة وأكثر تنظيما. سيساعد مشروعنا لجنة متابعة مشاريع التخرج بإدارة وتنظيم مجموعات التخرج بواسطة استخدام لوحة تحكم بسيطة وسهلة الاستخدام، ويساعد مشروعنا ايضا المشرفين على استلام طلبات الطلبة بطريقة سهلة وعرض المجموعات الخاصة بهم، وكذلك يساعد مشروعنا الطلبة على انشاء مجموعاتهم بطريقة بسيطة وسهلة.

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Chapter

Introduction

1.1 Introduction

Technology became a main part of our life in this world especially for the people who used it for their daily life to make their tasks and jobs fast and easy. Companies and organizations use systems and programs to manage, analyze, extract statistics and save their data to make it easy when they need it for their business.

And because technology is entering in all areas in our lives it was strong desire to have educational institutions to share and learn information technology like faculty of Information technology in Islamic university which was created in 2004/2005, to meet society requirement and response at science and technology growth and to cover local and global market requirement from scientific competencies, look at .

Faculty of information technology has different departments like Computer Science, IT Systems, Software Development, Multimedia technology and web development, and Mobile computing and smart device applications, and there are plans to add more departments in the future.

At the IT college we have two graduate courses: the first one is graduation research in the first semester, it is done the selection of a group, selection of a supervisor and prepare the proposal during it and second is graduation project in the second semester, it is implemented and discussed in the project.

In the academic year 2019/2020, there are about 140 students in the first semester of the fourth-year enrolling graduation research course in the Faculty of Information Technology of the Islamic University of Gaza. This number is expected to grow in the next years according to admission and registration department at IUG, look at the Table 1 Students number statistics.

Computer Systems are very important for college students because these systems help in managing there studying courses, So. Many systems are running in the Islamic university, but these systems are lack for computerize system which helps faculty students to form their graduation groups and choose an adviser, until now they use paper documents and transform it to google form. So, we decide to build a new web system and a mobile application to help students to form their groups and choose their advisers more easily and fast, and to help the advisers to manage their groups, and the graduation research committee can manage and track groups using it.

Our project targets a projects course and graduation research to form groups and choosing advisers, making it easy to teachers to take their tasks and members of graduation projects committee.

Academic Level	Number of male students	Number of female students	Total
First	618	362	980
Second	205	143	368
Third	147	70	217
Forth	83	57	140
Total	1053	652	1705

Table 1 Students number statistics

1.2 Statement of the problem

The large number of IT students (look at Figure 1 Students statistic graph) registered in graduation research course need a system to follow up, organize, and manage them, the faculty of Information Technology still uses the paper and excel system in the management of students enrolled in Graduation research course, there is no doubt that the paper system needs a lot of effort and time, and the college has recently begun to move to Google forms to manage the registration of the course and the formation of groups.

The system currently used by the college to manage the graduation research course does not meet the requirements of faculty members, and does not suit the needs of students, and it is difficult to track groups formation.

So, there is a need to develop a computerized web-based system to organize and facilitate all processes related to the management of the graduation research course.

Many problems have appeared, including :

- 1- Students suffer from many problems in forming groups, and joining them.
- 2- Some students have difficulty in choosing the supervisor of the graduation project.
- 3- Graduation research supervisor suffers a problem in identifying the groups chosen by his supervisor, and has difficulty in managing his groups.
- 4- The teacher of graduation research course has difficulty in managing all students enrolled in the course, and to know each group and its supervisor.
- 5- There are also several technical problems such as the heterogeneity of the course code when registering a graduation project because of the different sections of members of the same group.

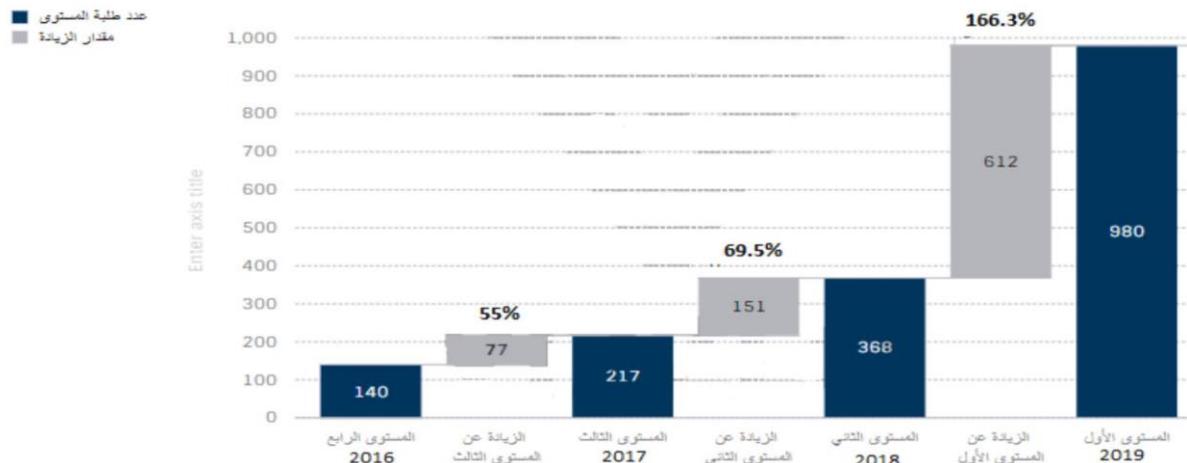


Figure 1 Students statistic graph

1.3 Objectives

1.3.1 Main objectives

The major of this project is developed a web page and mobile application that help graduate students to select their group member and their supervisor easily and to manage all of that for graduate research and graduate project teacher.

1.3.2 Specific objectives

- 1- Create a firebase database to easy data access.
- 2- Develop an import module to import user info from a CSV file.
- 3- Learn more about Agile Scrum and how to use it to manage the project.
- 4- GitHub account to save all every release in a separation version.

1.4 Importance of the project

The project solves the paper and writes a problem that is need manage and hard to get information from it without waste a lot of time, the student's team easily chooses their members and choose their supervisor and teacher of graduate research can manage teams easily and clearly.

1.5 Scope and limitations of the project

1.5.1 Scope:

This system will support several of systems such as android and web, This means they will cover the university without any problem and There will be synchronization between the website and the application, The system is design and build for Faculty of IT graduate students or the students that registered graduate research course and for teacher of the course.

1.5.2 Limitations:

The system needs internet access to use it, also there is no chat between team members or supervisors and teams under their control, and the system supports Arabic only.

1.6 Methodology:

The methodology used in this project is an Agile methodology.

Agile software development: comprises various approaches to software development under which requirements and solutions evolve through the collaborative effort of self-organizing and cross-functional teams and their customer(s)/end user(s). It advocates adaptive planning, evolutionary development, early delivery, and continual improvement, and it encourages rapid and flexible response to change.

We use agile scrum (look at Figure 2 Agile Scrum) in our project because:

- 1- The requirements are not clearly specified.
- 2- The probability changes during High development.
- 3- There is a need to test the solution.
- 4- The product owner (PO) is fully available.
- 5- The team has self-management skills.
- 6- The culture of the client opens to innovation and adapts to change.

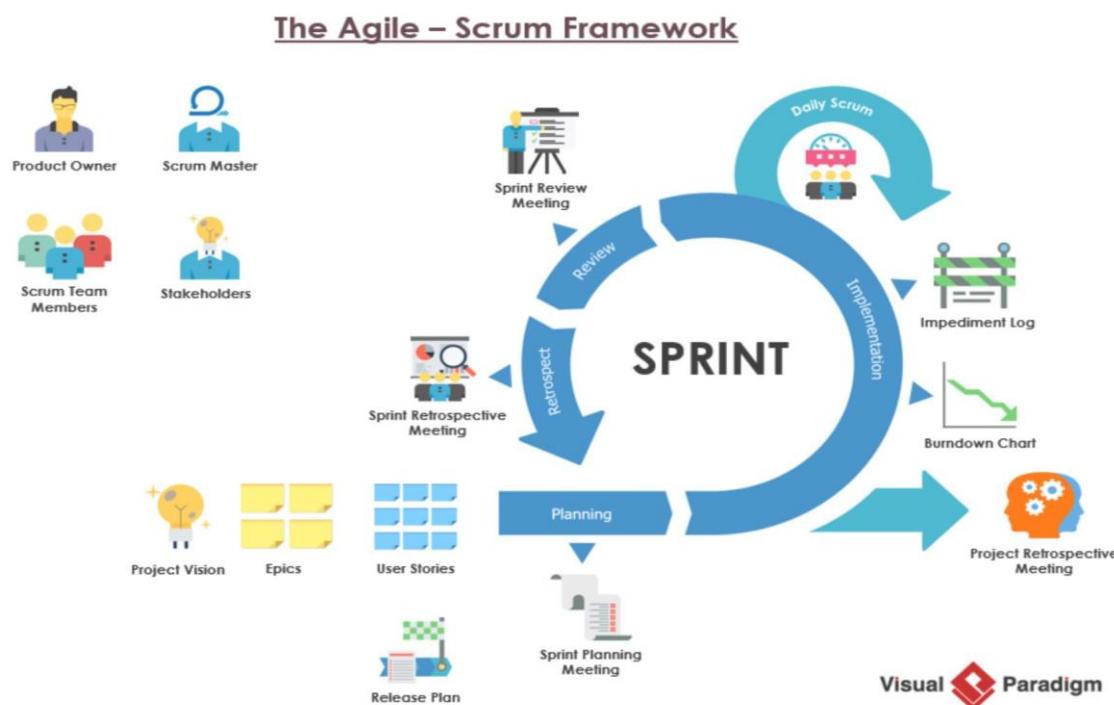


Figure 2 Agile Scrum

1.6.1 Sprints table:

Task name	start	end	week	Task
Sprint1				
planning	02/1		3d	
analysis	02/4		1w 1d	Plane the database, add experimental data and test members, and give access to programmers to access the database.
implementation	02/13		1w	
test	02/23		3d	
Sprint2				
planning	02/26		3d	
analysis	03/1		1w 1d	Design interface for the application and web interface, standardize the shape between the application and the site, and ensure the movement between them.
implementation	03/9		1w	
test	03/17		3d	
Sprint3				
planning	03/22		3d	
analysis	03/25		1w 1d	Starting the code and linking the database and making sure of the users and giving each type of user special roll in it.
implementation	04/3		1w	
test	04/11		3d	
Sprint4				
Planning	04/14		3d	
analysis	04/17		1w 1d	Carry out the main tasks of the application and website from creating groups and choosing supervisor.
implementation	04/26		1w	
test	05/2		3d	
Sprint5				
planning	05/5		3d	
analysis	05/8		1w 1d	Building a control panel for the administrator to carry out administrative tasks of the project from manually adding his request, adding new supervisor, following up and auditing
implementation	05/16		1w	
test	05/20		3d	
Sprint6				
planning	05/24		3d	
analysis	05/30		1w 1d	Finishing, checking and confirming all operations to generate a report and videotape all operation
implementation	06/7		1w	
test	06/14		3d	

Table 2 Scrum Sprints

1.7 Tools and equipment and methods:

The tools we will use in a project:

1. Android studio.
2. Firebase.
3. PHPStorm.
4. Wamp server.
5. Laravel.
6. Ganttpro.
7. Grammarly.

Chapter

Related works

3.1 Related works

Our project is one of the services projects that serves university students, there is some system is work in Islamic university and that is some of it.

3.1.1 CTGS (IUG Training Course Schedule System):

This system is designed for the Faculty of Information Technology, which schedules courses, and reservations the appropriate time for the course to fit the time of the teacher and student and available rooms automatically

In this system, they used the prototype methodology and implemented it in Java language using the FX interface, look at Figure 3 GTGS screen 1.

The screenshot shows a JavaFX application window titled "الرئيسية". The menu bar includes "الرجوع إلى الجدول", "تحديث", "ذكر", "الفصل الأول", "المستوى الأول", "الفصل العام", "الشعب المحدثة", "الشعب", "المدربين", "العنفات التراصية", "العرف", and "ال الشعب". The main area displays a grid of course schedule data:

الزمان	الثلاثاء	الإثنين	الإحدى	السبت	القاعة	المدرس	اسم العادة	الفرز	رقم الشعبة
	8.0 - 9.5		8.0 - 9.5			ياسمين عمر العجلان	برمجة (1)	CSCI 1304	102
15.0 - 16.0		15.0 - 16.0		15.0 - 16.0		ياسمين عمر العجلان	برمجة (1)	CSCI 1304	101
9.0 - 10.0	9.0 - 10.0			9.0 - 10.0		وائل السراج	مقدمة في الحوسبة	CSCI 1303	102
13.0 - 14.0	13.0 - 14.0		13.0 - 14.0			وائل السراج	مقدمة في الحوسبة	CSCI 1303	101
				14.0 - 16.0		محمد التكش	برمجة (1) - عملي	CSCI 1104	103
					10.0 - 12.0	محمد التكش	برمجة (1) - عملي	CSCI 1104	103
						محمد التكش	برمجة (1) - عملي	CSCI 1104	101
	10.0 - 12.0					محمد التكش	مقدمة في الحوسبة - عملي	CSCI 1103	101
12.0 - 14.0						محمد الأغا	مقدمة في الحوسبة - عملي	CSCI 1103	102
14.0 - 16.0					12.0 - 14.0	محمد الأغا	مقدمة في الحوسبة - عملي	CSCI 1103	103

A large red button at the bottom right of the grid contains the text "حذف الجدول المعروضة" (Delete the displayed schedule). Below the grid, there are three buttons: "حذف الكل" (Delete all), "تصدير الكل" (Export all), and "تصدير المعروض" (Export displayed).

Figure 3 GTGS screen 1

Review: A good system, easy to use and very useful, similar to our system in that it is a service process for the College of Information Technology of the organization of courses in general but does not handle the problem of organizing the graduation research course in particular, and this which we will complete, and also this system does not have a good interface and It does not store the cloud, nor is there an app version running on smartphones, look at Figure 4 GTGC screen 2.

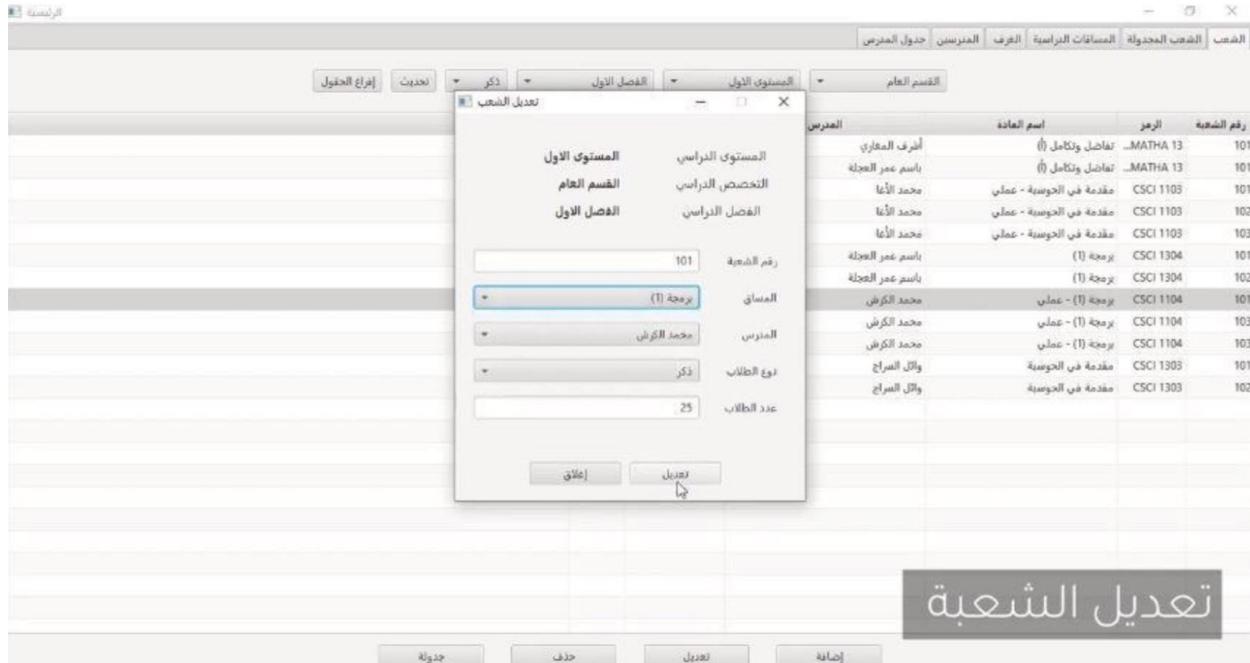


Figure 4 GTGC screen 2

3.1.2 QAR - Attendance Management System using NFC technology:

This Project helps students and control committee or exam supervisors. For students in exams by quick identity at every specific student by use NFC or Near Field Communication that is a quick operation, save time, effort and cheap this NFC is found in many smartphones and most students have a smartphone, and it helps the application also help when need some services like report if cheating, leak of paperwork or apology for observation, look at Figure 5 QAR screen.

And for an exam supervisor, it is given easy track to student attendance.

The application has an easy way to register students in a course's exams, a clear way to view registered students, have service to send a quick message for admin that has different causes, from the admin way have a clear view for the newest request to repeat it.

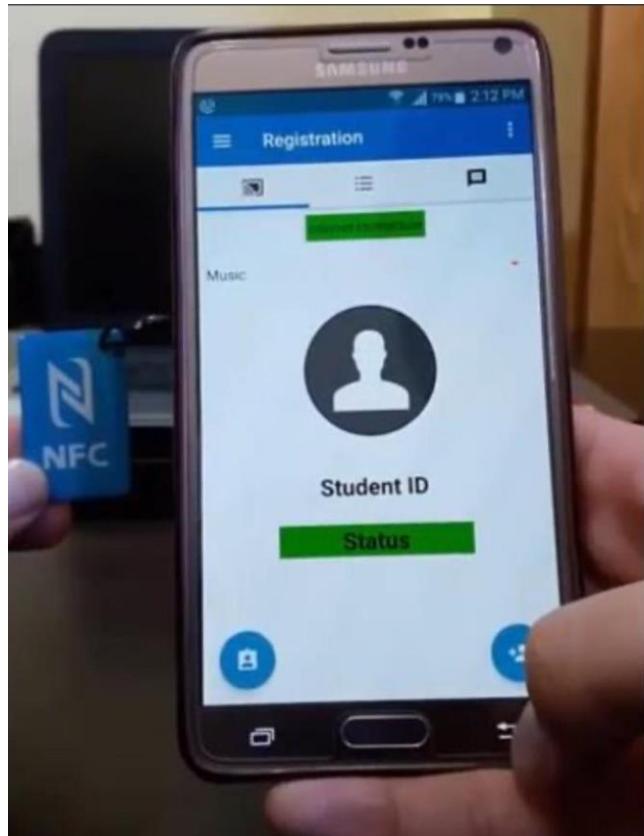


Figure 5 QAR screen

There is two chat-bots that's used in Islamic university:

3.1.3 FIT-BOT (A Chatbot for the Faculty of IT - Islamic University of Gaza):

This chat-bot that helps new IT students by answering their questions about the college, the college specialties, and other questions in simple language. The application has a simple description about how to use application and has a list of questions classified by type, it understands Palestinian dialect and have issue report system wrong answers, Figure 6 FIR-BOT screen.

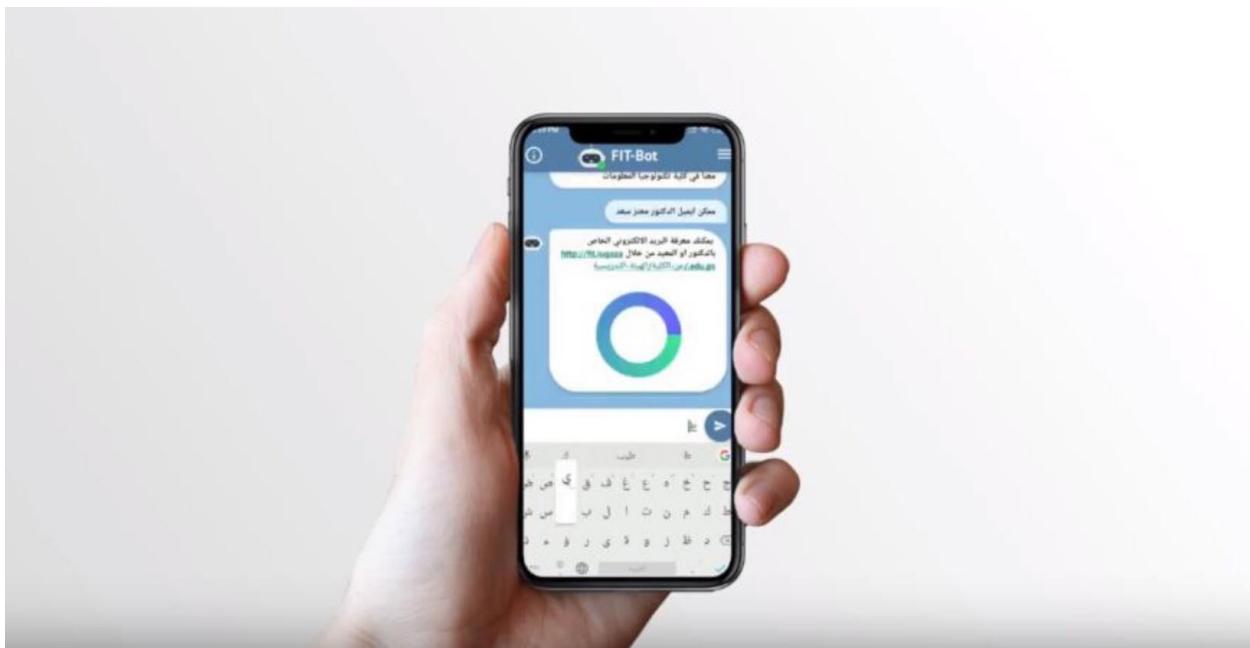


Figure 6 FIR-BOT screen

3.1.4 A Chat-Bot Mobile App to Assist Students in Registration Matters:

This Chatbot is like the previous one but that aim to serve all university students specifically new students that have a lot of question that needs an answer, this application will help them to get all answer directly about the university, how to register and faculties, Figure 7 IUG Bot screenshot.



Figure 7 IUG Bot screenshot

3.2 Comparison between our project and other related works:

	CTGS	QAR	FIT-BOT	IUG Bot	GGTS
System Type	Serviceable system				
Developed To	Faculty of IT at IUG				
Website	Yes	No	No	No	Yes
Android	No	Yes	Yes	Yes	Yes
Ease of use	Ease	Ease	Ease	Ease	Ease
Interface	Not good	good	good	good	good
Cloud storage	Not support	Not support	Support	Not support	Support

Table 3 Comparison between our project and related works

Chapter

System Analysis

And

Design

4.1 System analysis and design

In this chapter we present our system requirements, and then we explain our use case diagram.

4.2 System Requirement:

4.2.1 Functional Requirements:

- 1- Create graduation groups by the leader
- 2- Manage graduation groups by admin
- 3- Manage the system users by admin
- 4- View group info by the users
- 5- Show system statistics for admin
- 6- Handel requests by students and supervisors
- 7- Users should be able to install the application on above 7 Android devices.

4.2.2 Non-Functional Requirements:

4.2.2.1 Performance Requirements:

- 1- The app and website shouldn't crash or lag.
- 2- The app and website should be easy to use.
- 3- The app must be responsive to the touch tap.
- 4- The app must launch quickly and smoothly on android devices.

4.2.2.2 Quality Attributes:

- 1- **Reliability:** the ability of our app to continue operating and perform expectedly.
- 2- **Flexibility:** the application and website need to be flexible.
- 3- **Usability:** the application and website must be usable and attractive for students.
- 4- **Availability:** the application and website are available and accessible all the time with achieved performance.

4.3 Main actors:

Admin, Student, Leader and Supervisor.

1. **Admin:** The person who has the ability to control the system
2. **Student:** The person who has achieved graduation requirements
3. **Leader:** The student is responsible for the graduation group
4. **Supervisor:** University teacher responsible for the graduation group or more.

4.4 Use case diagram:

The following figures shows the use case diagram for the system that includes all functions that our system provides.

4.4.1 Admin Use Case:

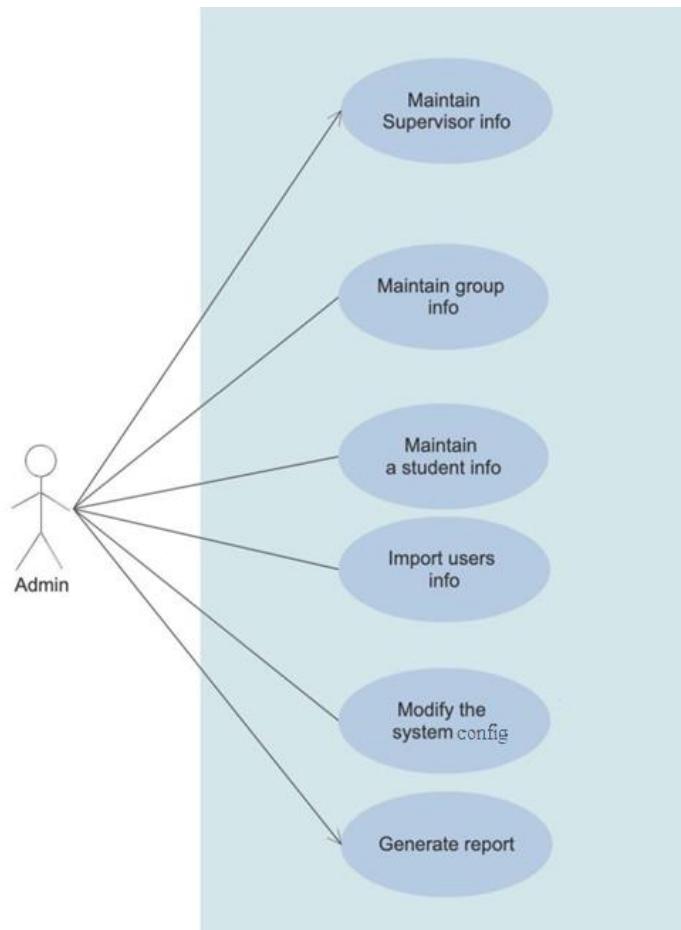


Figure 8 Admin Use Case

4.4.2 Student Use Case:

A leader that mention in Figure 9 Student Use Case refer to group leader.

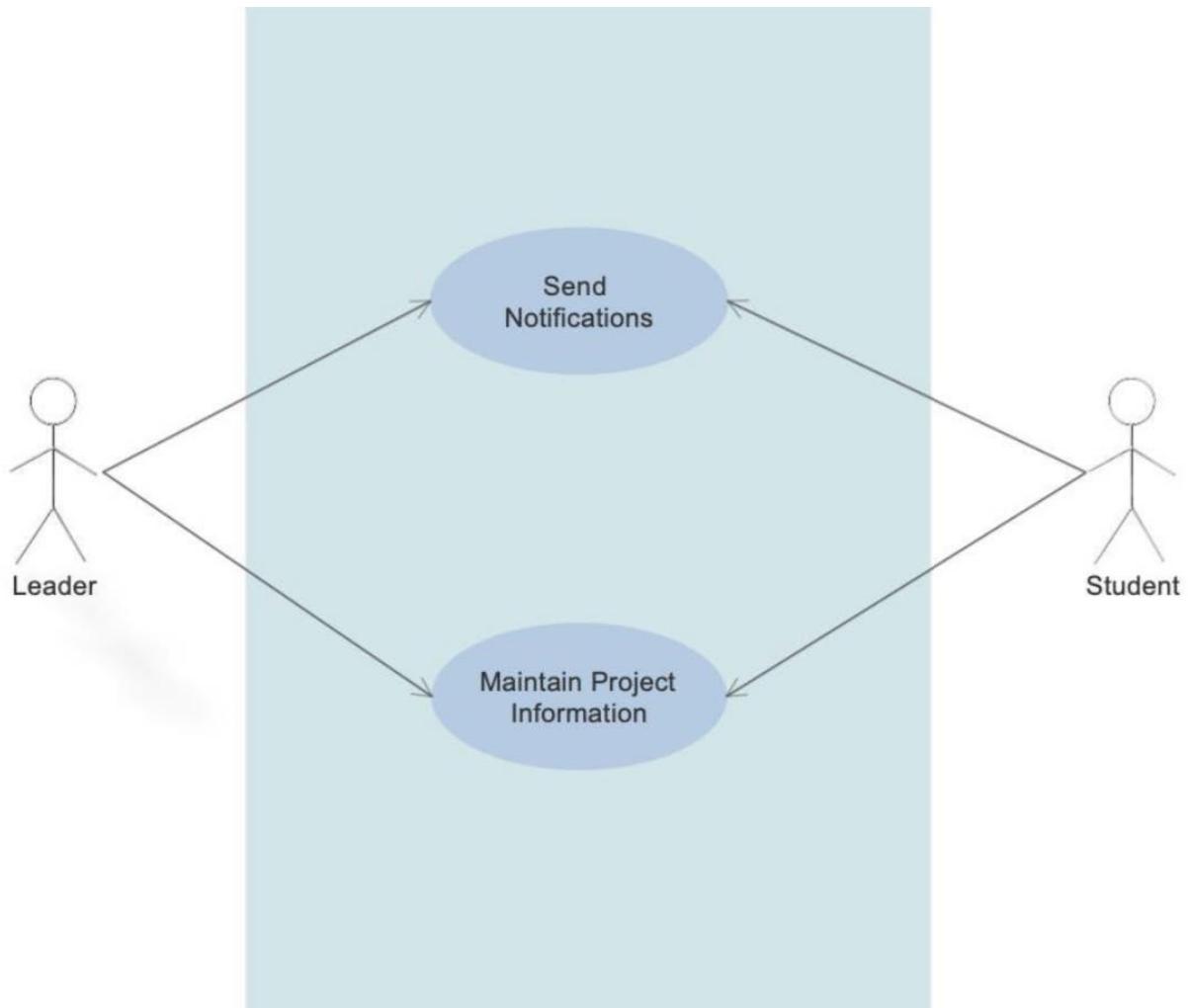


Figure 9 Student Use Case

4.4.3 Supervisor Use Case:

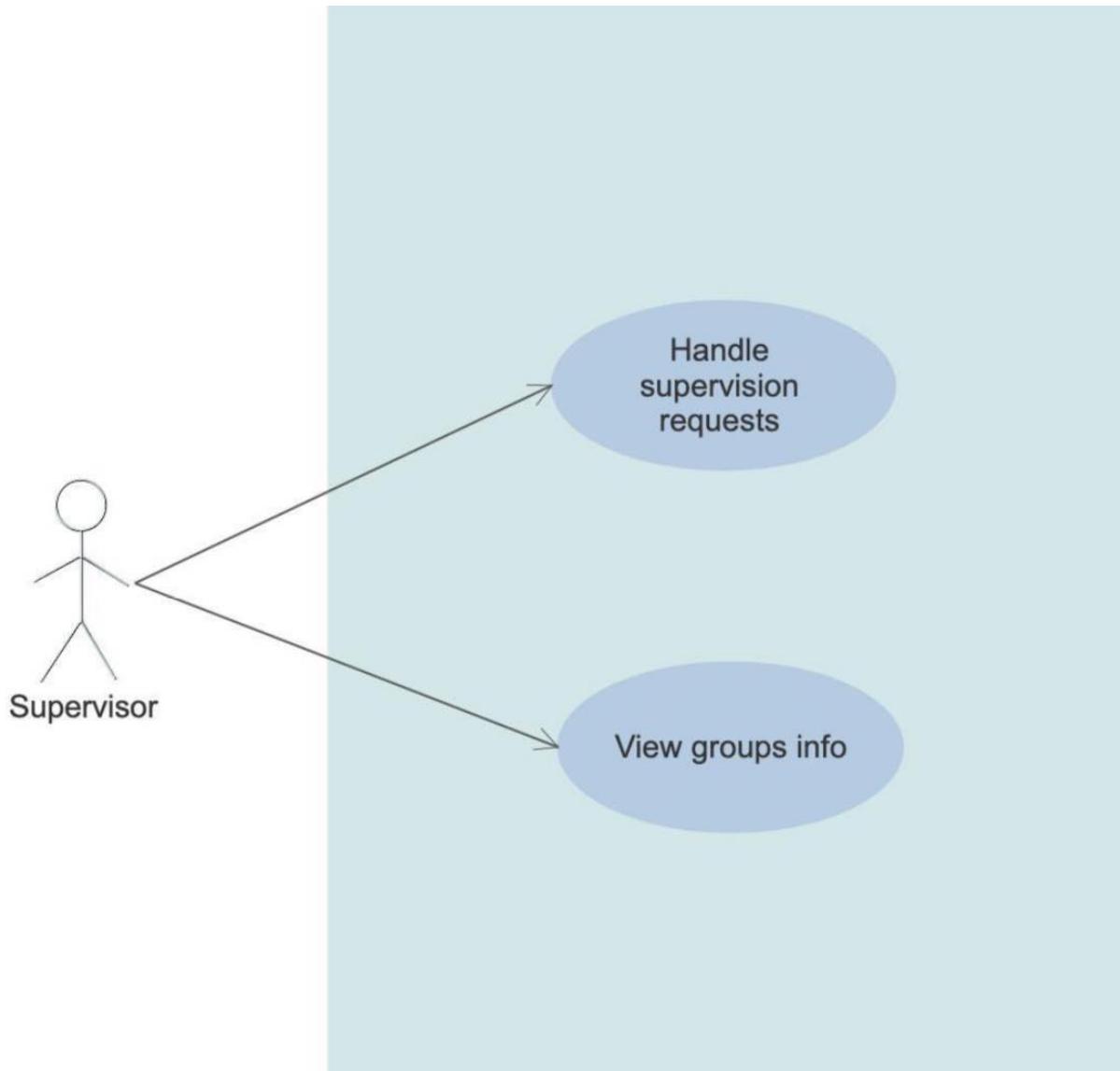


Figure 10 Supervisor Use Case

4.5 Explain the use case

Tables from 1 to 10 explain use case and each function that our system provides.

4.5.1 Import user's info:

ID	1
Name	Import users info
Description	Upload student data to the system to start the registration process
Priority	1
Status	Completed, Coded, Tested
Actors	Admin
Condition-Pre	No pre-conditions
Inputs	Excel file containing student data
Normal Flow of Events	1- Admin will upload the student data file to the system. 2- System will store the student data file in the database.
Otherwise Flow	Student whose name is not in the excel file
Condition-Post	Storing students data in the database
Output	No output
Constraints	Adhere to the order of the columns in the Excel file
Exceptions	Admin will use manual registration.

Table 4 Import user's info

4.5.2 Maintain supervisor info:

ID	2
Name	Maintain supervisor info
Description	Processing supervisor by adding, deleting or modifying.
Priority	2
Status	Completed, Coded, Tested
Actors	Admin
Condition-Pre	No Condition-Pre
Inputs	The data to be added or modified.
Normal Flow of Events	1- Admin opens the supervisors data page. 2- Admin chooses the supervisor he wants to modify or delete. 3- Admin makes his changes to the group. 4- Admin saves his new changes.
Otherwise Flow	No other possible flows.
Condition-Post	Save new modifications to the database.
Output	No output
Constraints	No Constraints
Exceptions	No exceptions

Table 5 Maintain supervisor info

4.5.3 Maintain group info:

ID	3
Name	Maintain group info
Description	Processing groups by adding, deleting or modifying.
Priority	2
Status	Completed, Coded, Tested
Actors	Admin
Condition-Pre	Add a student to a graduation group
Inputs	The data to be added or modified.
Normal Flow of Events	<p>1- Admin opens the group data page.</p> <p>2- Admin chooses the group he wants to modify or delete.</p> <p>3- Admin makes his changes to the group.</p> <p>4- Admin saves his new changes.</p>
Otherwise Flow	No other possible flows.
Condition-Post	Save new modifications to the database.
Output	No output
Constraints	No Constraints
Exceptions	No exceptions

Table 6 Maintain group info

4.5.4 Maintain student info:

ID	4
Name	Maintain student info
Description	Student data is entered and stored in the database.
Priority	1
Status	Completed, Coded, Tested
Actors	Admin
Condition-Pre	No Condition-Pre
Inputs	student info in Excel
Normal Flow of Events	1- Admin will add, edit or delete student info in an excel file. 2- Admin will enter the identifier, name, role, department, phone number, and e-mail. 3- The admin will upload the excel file to the system.
Otherwise Flow	No other possible flows.
Condition-Post	Storing students data in the database
Output	No output
Constraints	No Constraints
Exceptions	Admin will use manual registration.

Table 7 Maintain student info

4.5.5 Modify the system data:

ID	5
Name	Modify the system data
Description	Admin will change the system settings
Priority	2
Status	Completed, Coded, Tested
Actors	Admin
Condition-Pre	No condition-pre
Inputs	New settings
Normal Flow of Events	<p>1- Admin opens the System Settings Change window.</p> <p>2- Admin will choose the maximum number of team members.</p> <p>3- Admin will choose the minimum number of team members.</p> <p>4- Admin will choose the maximum number of groups for the supervisor.</p>
Otherwise Flow	No other possible flows.
Condition-Post	The system will work with the new settings.
Output	No output
Constraints	No Constraints
Exceptions	No exceptions

Table 8 Modify the system data

4.5.6 Generate report:

ID	6
Name	Generate report
Description	Admin reviews public reports about the project.
Priority	3
Status	Completed, Coded, Tested
Actors	Admin
Condition-Pre	No condition-pre
Inputs	No input
Normal Flow of Events	1- The admin opens the admin page. 2- At the top of the page, he will see reports and statistics about specialization and project type.
Otherwise Flow	No other possible flows.
Condition-Post	The system will display general reports on projects.
Output	No output
Constraints	No Constraints
Exceptions	No exceptions

Table 9 Generate report

4.5.7 Send notifications:

ID	7
Name	Send notifications
Description	Both the team leader and the student send the notifications to each other
Priority	1
Status	Completed, Coded, Tested
Actors	Team leader, Student
Condition-Pre	Register Student
Inputs	Student id
Normal Flow of Events	<p>1- Each group leader enters the university numbers of students he or she wants to join.</p> <p>2- A notice will come to the student the team leader wants to include in his team.</p> <p>3- The student will either accept or reject.</p> <p>4- Notice will reach the team leader accepting or rejecting the request.</p>
Otherwise Flow	No other possible flows.
Condition-Post	The student joins or does not join the team.
Output	No output
Constraints	No Constraints
Exceptions	No student has agreed to join the team.

Table 10 Send notifications

4.5.8 Maintain project info:

ID	8
Name	Maintain project info
Description	Fill in the project data and info about it.
Priority	1
Status	Completed, Coded, Tested
Actors	Team leader
Condition-Pre	Send notifications
Inputs	project data and info about it.
Normal Flow of Events	<p>1- The team leader will enter the initial title of the project..</p> <p>2- The team leader will enter Is the group a graduate in the first semester?</p> <p>3- The team leader will enter the project form.</p> <p>4- The team leader can add a new student to the team if he so wants and the system allows him.</p> <p>5- The team leader will select the supervisor, and send him a notification.</p>
Otherwise Flow	No other possible flows.
Condition-Post	The student joins or does not join the team.
Output	No output
Constraints	Adherence to the system settings in the number of team members.
Exceptions	No exceptions

Table 11 Maintain project info

4.5.9 Handle supervision requests:

ID	9
Name	Handle supervision requests
Description	Accept or reject the request to supervise the project of the team leader.
Priority	1
Status	Completed, Coded, Tested
Actors	Supervisor
Condition-Pre	Maintain project info
Inputs	No input
Normal Flow of Events	<p>1- The supervisor will receive a notice from the team leader requesting supervision of his project.</p> <p>2- The notice will display the general data of the project.</p> <p>3- The supervisor will accept or decline.</p> <p>4- The team leader will receive the supervisor's response to his request.</p>
Otherwise Flow	No other possible flows.
Condition-Post	Accept or reject supervision.
Output	No output
Constraints	Adhere to the maximum number of groups allowed for each supervisor.
Exceptions	No exception

Table 12 Handle supervision requests

4.5.10 View groups info:

ID	10
Name	View groups info
Description	Display info about groups under the supervision of each supervisor
Priority	2
Status	Completed, Coded, Tested
Actors	Supervisor
Condition-Pre	accept the request from the team leader
Inputs	No input
Normal Flow of Events	1- The supervisor will open the list of groups under his supervision. 2- The system will fetch data from the database. 3- Supervised groups will be displayed and info on each group's project.
Otherwise Flow	No other possible flows.
Condition-Post	Accept or reject supervision.
Output	Display info about groups
Constraints	No Constraints
Exceptions	No exception

Table 13 View groups info

4.6 System architecture

A system architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system. (Wikipedia, 2020)

4.6.1 Web system architecture:

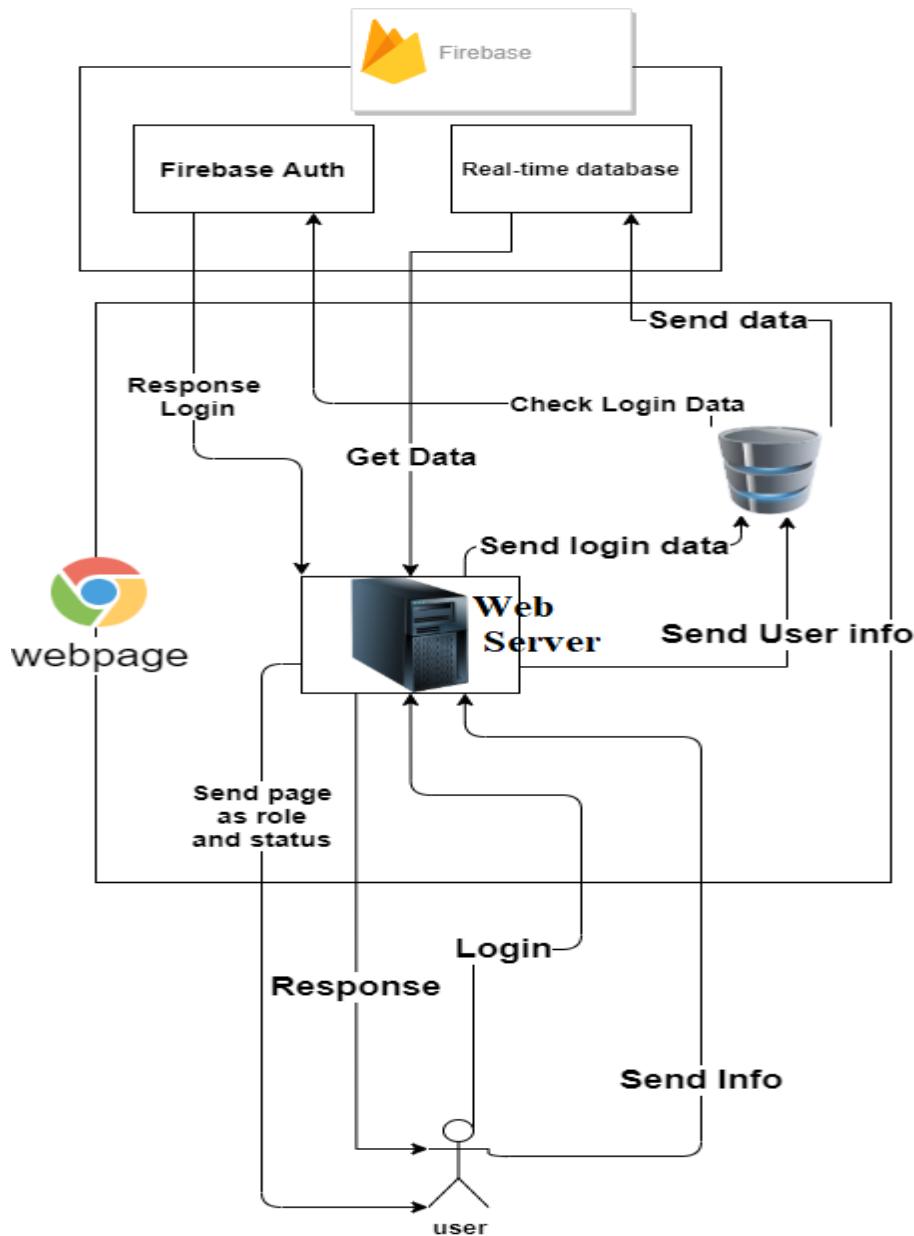


Figure 11 Web system architecture

4.6.2 Android System architecture:

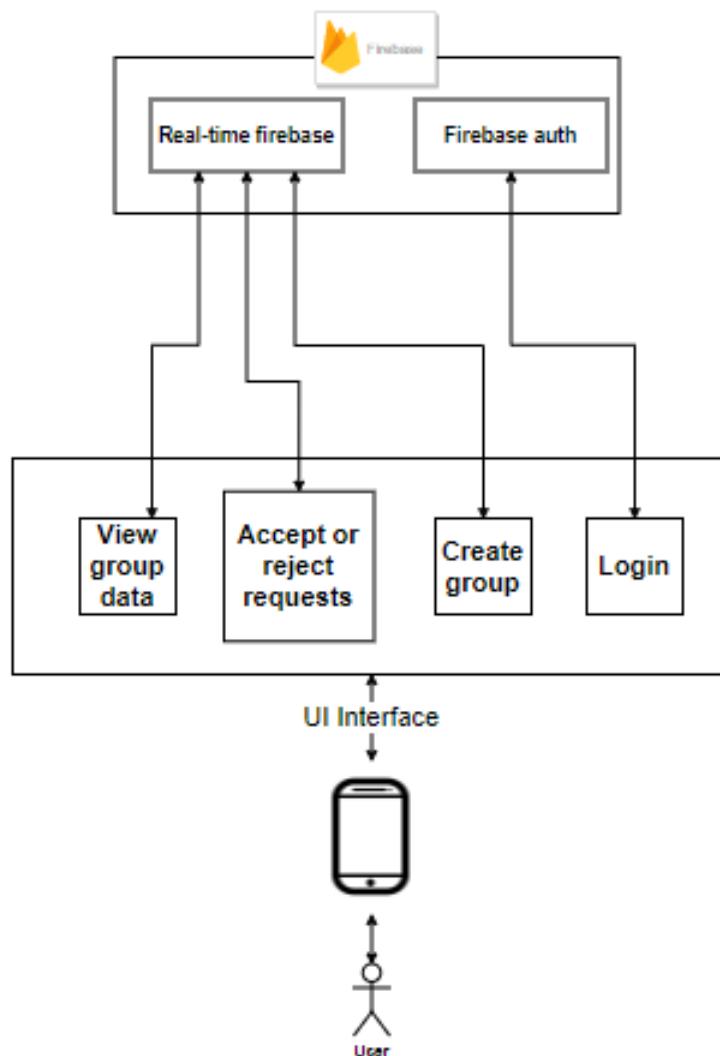


Figure 12 Android system architecture

4.7 Website wireframe

A website wireframe, also known as a page schematic or screen blueprint, is a visual guide that represents the skeletal framework of a website. Wireframes are created for the purpose of arranging elements to best accomplish a particular purpose. The purpose is usually being informed by a business objective and a creative idea. The wireframe depicts the page layout or arrangement of the website's content, including interface elements and navigational systems, and how they work together. (Wikipedia, 2020)

4.7.1 Login page:

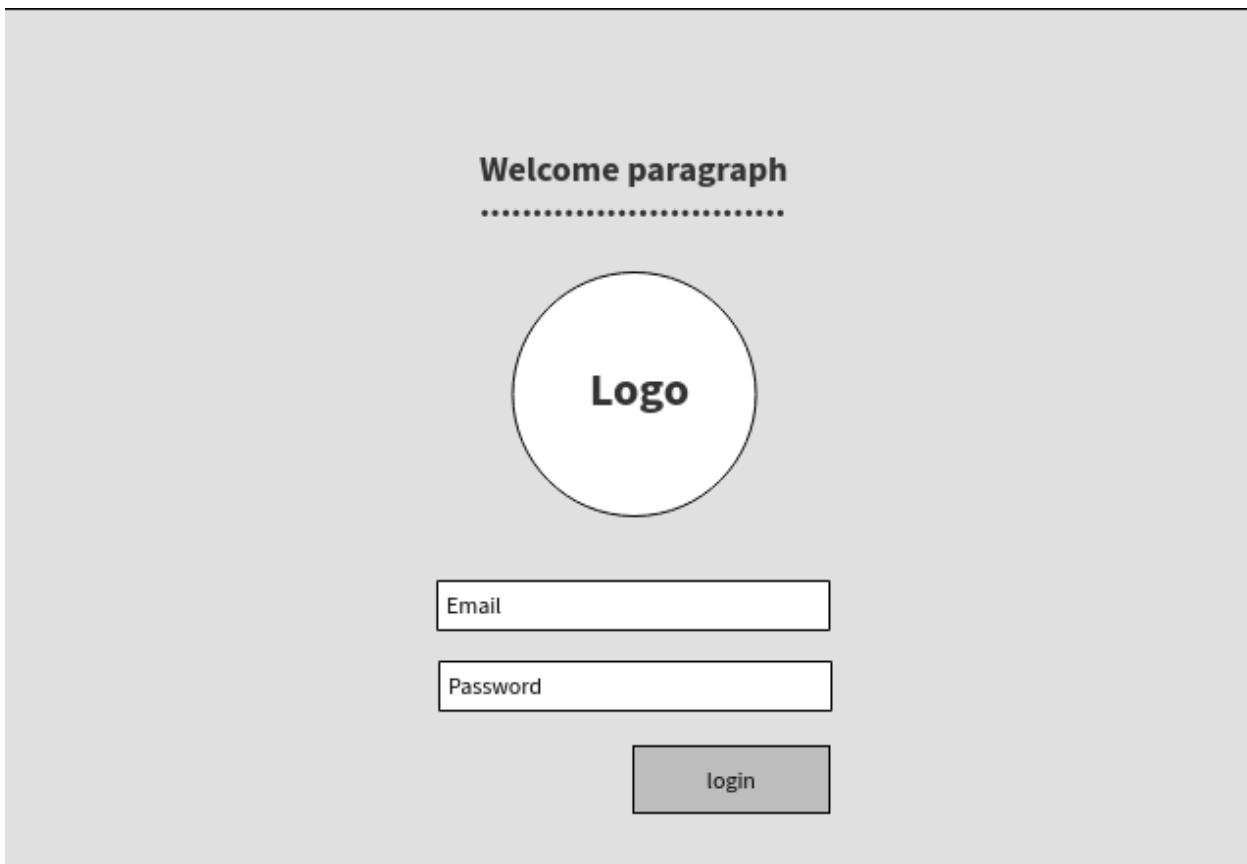


Figure 13 Login page wireframe

4.7.2 Admin panel dashboard:

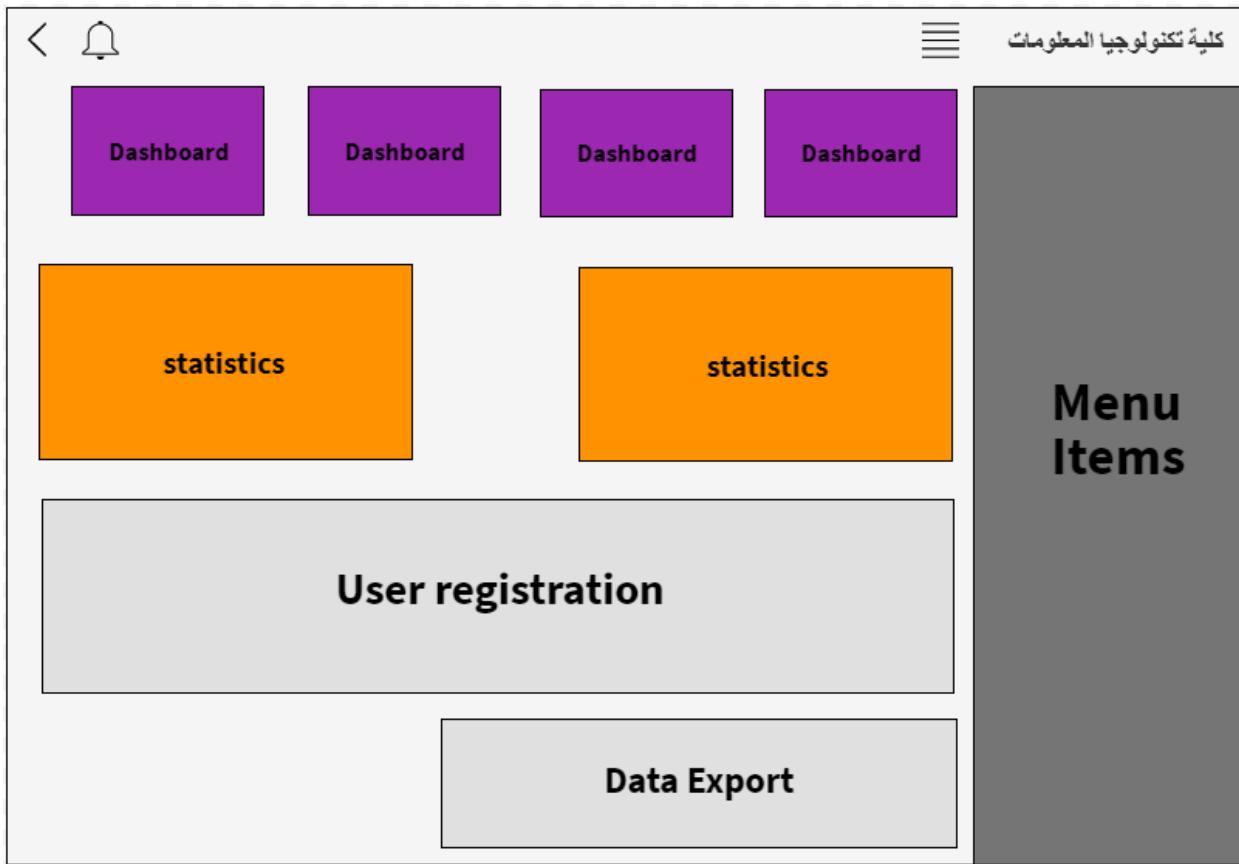


Figure 14 Admin panel wireframe

4.7.3 Admin panel setting wireframe:

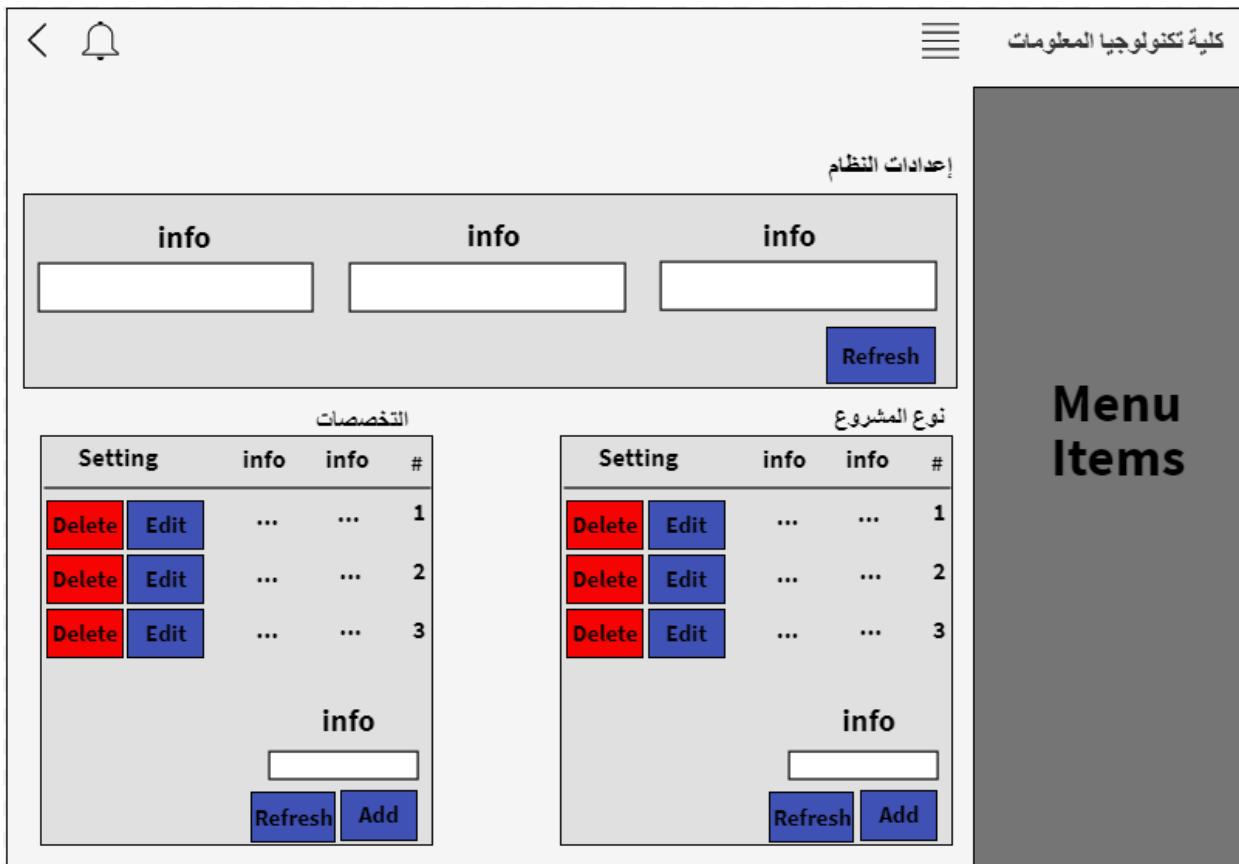


Figure 15 Admin panel setting wireframe

4.7.4 Admin panel students info wireframe:

The wireframe shows a list of student records. Each record consists of a row of seven columns. The first column contains two buttons: 'حذف' (Delete) in red and 'تعديل' (Edit) in blue. The remaining six columns are labeled 'info' and contain three dots ('...'). Below the table is a navigation bar with page numbers 1 through 5.

الإعدادات	info	info	info	info	info	info
حذف تعديل
حذف تعديل
حذف تعديل
حذف تعديل
حذف تعديل
حذف تعديل
« 1 2 3 4 5 »						

Right side panel: **Menu Items**

Figure 16 Admin panel students info wireframe

4.7.5 Admin panel teachers info wireframe:

The wireframe shows a list of teacher records. Each record includes a 'Delete' button (حذف), an 'Upgrade' button (ترقية), an 'Edit' button (تعديل), and a 'Groups' button (المجموعات). To the right of each record are four 'info' buttons. A search bar and a back arrow are at the top left, and a menu icon is at the top right. The title 'بيانات المشرفين' is at the top right. A sidebar on the right is titled 'Menu Items'.

الإعدادات				info	info	info	info
حذف	ترقية	تعديل	المجموعات
حذف	ترقية	تعديل	المجموعات
حذف	ترقية	تعديل	المجموعات
حذف	ترقية	تعديل	المجموعات
حذف	ترقية	تعديل	المجموعات
حذف	ترقية	تعديل	المجموعات
حذف	ترقية	تعديل	المجموعات
<< 1 2 3 4 5 >>							

Figure 17 Admin panel teachers info wireframe

4.7.6 Admin panel groups info wireframe:

The wireframe shows a list of group items. Each item has a red 'Delete' button and a blue 'More Options' button. The list includes pagination at the bottom.

الإعدادات	info	info	info	info	info
حذف	عرض المزيد
حذف	عرض المزيد
حذف	عرض المزيد
حذف	عرض المزيد
حذف	عرض المزيد
حذف	عرض المزيد
حذف	عرض المزيد
<< 1 2 3 4 5 >>					

On the right side, there is a sidebar with the title "Menu Items".

Figure 18 Admin panel groups info wireframe

4.7.7 Teacher view group wireframe:

The wireframe shows a user interface for a teacher to view group information. At the top right is the university logo and the text "كلية تكنولوجيا المعلومات". A blue header bar contains the text "الصفحة الرئيسية". The main content area has a title "بيانات المجموعات الخاصة بك" and a table with columns: "المجموعة #", "الإيميل", "الفسم", "رقم الموبايل", "اسم الطالب", and "الرقم الجامعي". Below the table, there are sections for "بيانات المشروع": "العنوان المبدئي:", "هل المجموعة خريجة فصل أول?", and "شكل المشروع:". There are also two dotted lines in each row of the table.

المجموعة #	الإيميل	الفسم	رقم الموبايل	اسم الطالب	الرقم الجامعي
.....
.....

بيانات المشروع

العنوان المبدئي:

هل المجموعة خريجة فصل أول؟

شكل المشروع:

Figure 19 Teacher view group wireframe

4.7.8 Student create group wireframe:

The wireframe shows a user interface for creating a group. At the top right is a header bar with the text "كلية تكنولوجيا المعلومات" and a blue button labeled "الصفحة الرئيسية". On the left, there's a navigation bar with a back arrow, a bell icon, and a menu icon. Below this is a list of messages with two buttons: "رد" (Reply) in red and "قبول" (Accept) in green. The list includes a message from "طالب منك الطالب..." with a reply count of "#1". The main content area is titled "إنشاء فريق مشروع التخرج" (Create Graduation Project Team). It contains three dropdown menus for "الرقم الجامعي للعضو 2", "الرقم الجامعي للعضو 3", and "الرقم الجامعي للعضو 4". Below these is a question "هل المجموعة خريجة الفصل الأول؟" with two radio buttons: "نعم" (Yes) and "لا" (No). A blue "تسجيل" (Register) button is at the bottom.

Figure 20 Student create group wireframe

4.8 Deployment diagram

A UML deployment diagram is a diagram that shows the configuration of run time processing nodes and the components that live on them. Deployment diagrams is a kind of structure diagram used in modeling the physical aspects of an object-oriented system. They are often be used to model the static deployment view of a system (topology of the hardware). (Visual-paradigm, 2020)

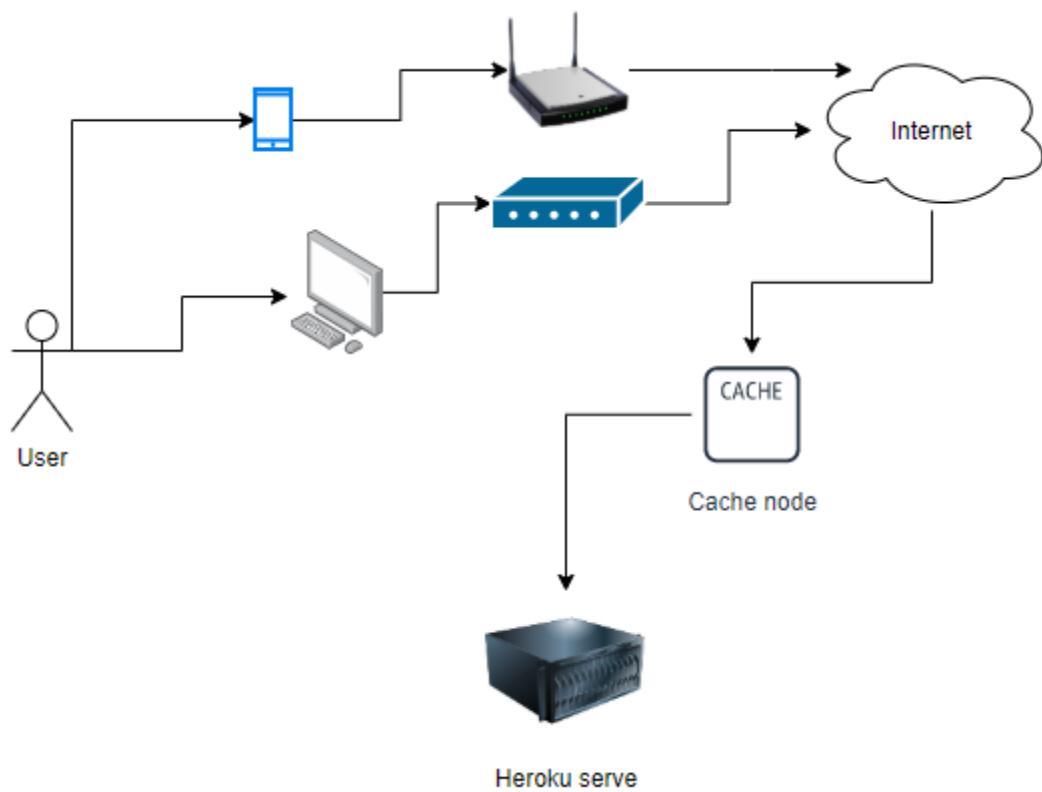


Figure 21 Deployment Diagram

4.9 Algorithm Flow chart

A flowchart is the graphical or pictorial representation of an algorithm with the help of different symbols, shapes and arrows in order to demonstrate a process or a program. (Edrawsoft, 2020)

4.9.1 Login flow chart:

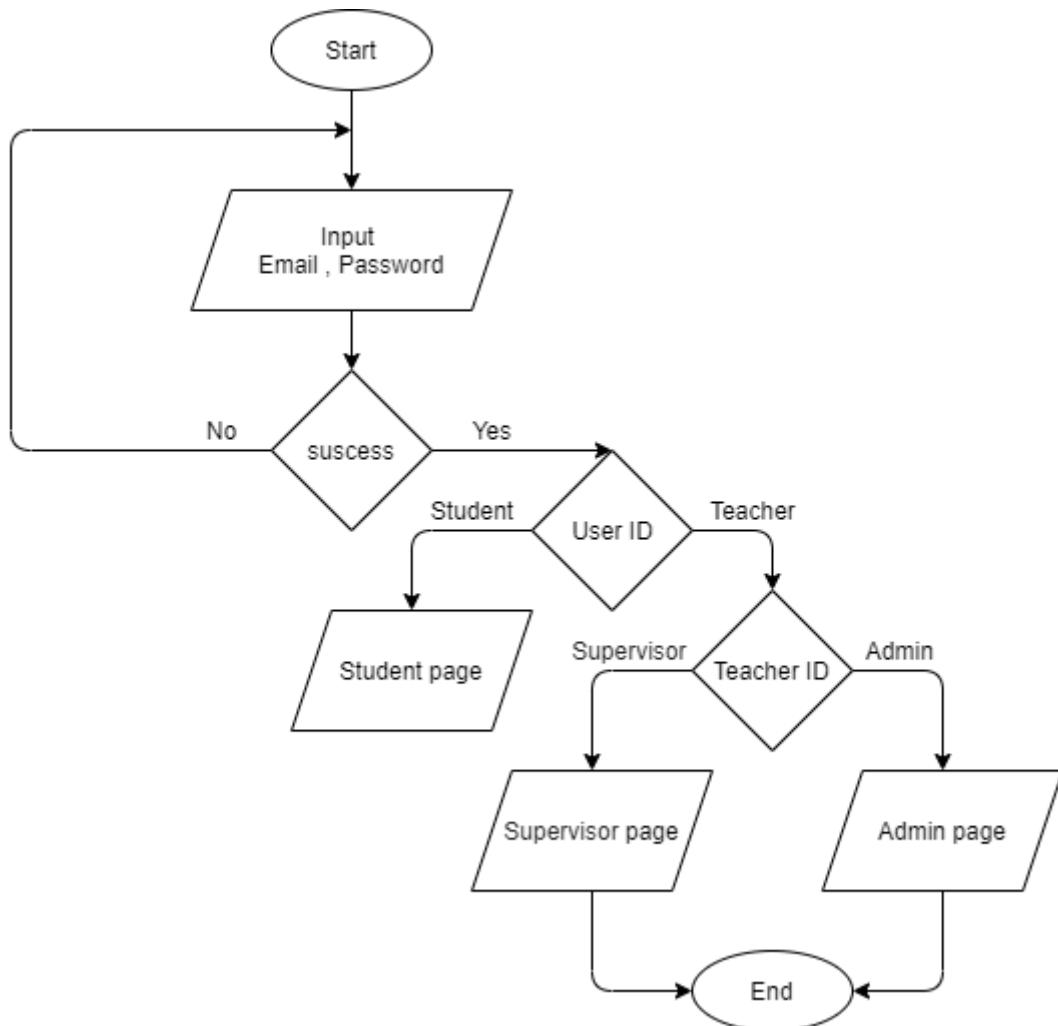


Figure 22 Login flow chart

4.9.2 Get notifications flow chart:

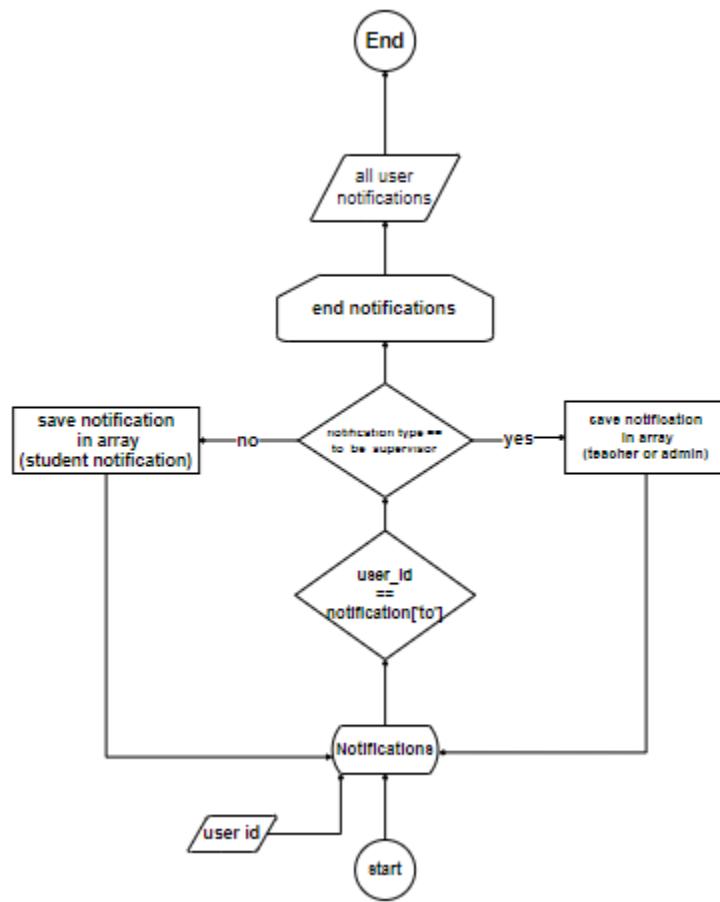


Figure 23 Get notifications flow chart

4.9.3 Accept or reject request:

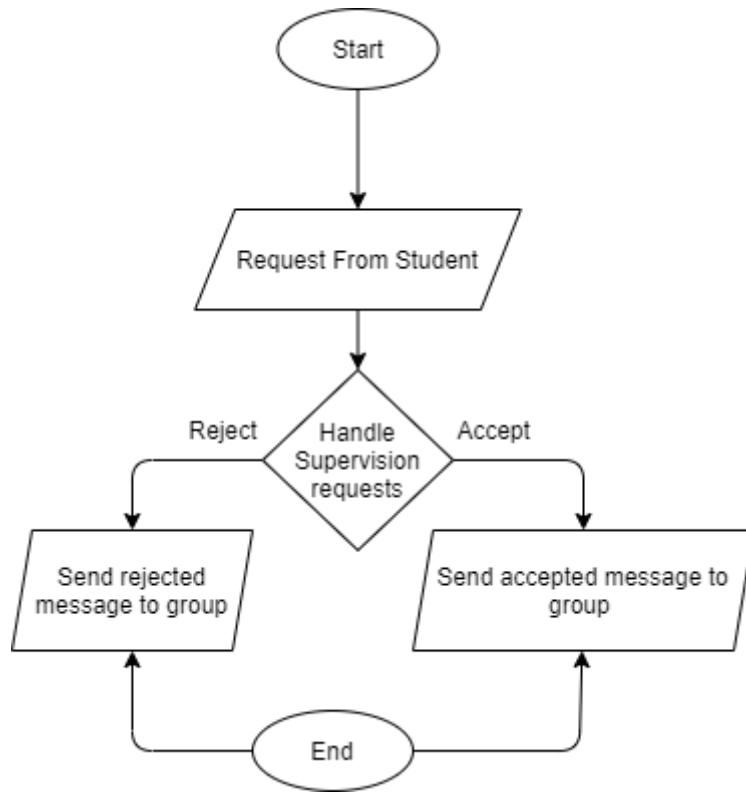


Figure 24 Accept or reject request

Chapter

Database

5.1 Database

In this chapter, we show tables we have created in the database that contain system data and described each table.

Google Firebase is a Google-backed application development software that enables developers to develop iOS, Android, and Web apps. Firebase provides tools for tracking analytics, reporting and fixing app crashes, creating marketing and product experiment. (Firebase, 2020)

Firebase Structure

We use The Firebase Storage and The Firebase Database (Realtime Database) services in our app and website.

5.1.1 ER Diagram

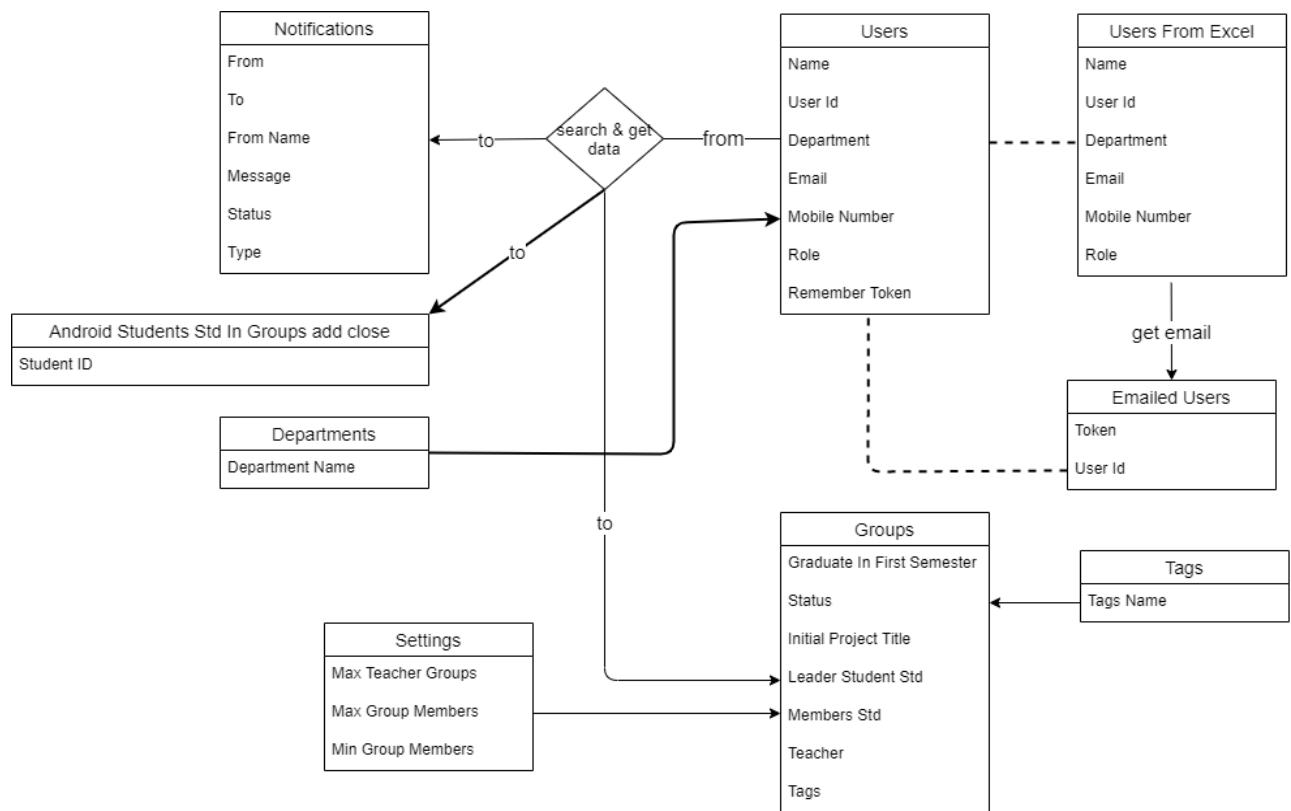


Figure 25 ER Diagram

5.2 The Firebase Database (Real-time Database) service:

Firebase is a platform for creating mobile and web applications developed by Google. It was originally an independent company founded in 2011. In 2014, Google acquired the platform and it is now their flagship offering for app development. (Wikipedia, 2020)

The Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronized in real-time to every connected client. When you build cross-platform apps with our iOS, Android, and JavaScript SDKs, all of your clients share one Realtime Database instance and automatically receive updates with the newest data. (Firebase, 2020)

5.2.1 Database:

Here we keep track of the other functions of the application and website including groups, emailed_users, android Students Std In Groups, notifications, settings, tags, user from excel, and users, Figure 26 Firebase.

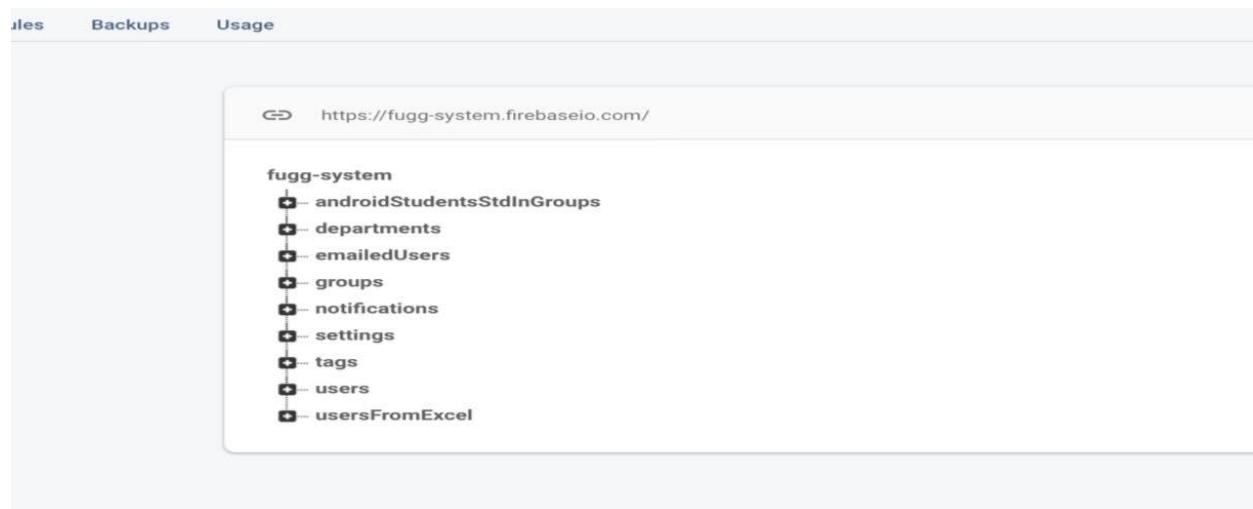


Figure 26 Firebase

5.2.2 Database (android Students Std In Groups):

Any student who has been added to the graduated group is added to this table and his university number is hidden from the list of university numbers that are not enrolled in the graduated group, Figure 27 Android Students Std In Groups.

Name	Type
StudentID	String

Figure 27 Android Students Std In Groups table column

5.2.3 Database (emailed users):

This table (look at Figure 28 emailed users) is used in two cases:

The **first case**, when the semester begins, the admin uploads an Excel file containing the information for students allowed to take the course.

When Excel file uploaded, the admin send email to each student to create a password to enter the system (application and website) when the student opens the delivered link to create a password the system created a token to verify the user.

In the **second case**, if there is a student who is not on the excel file, it is added manually by admin via the website, and after adding the student data, the admin sends an email to him to create the password to use the system.

Name	Type
Token	String
UserID	Intiger

Figure 28 emailed users table column

5.2.4 Database (settings):

This table controls the Maximum and minimum for the graduation group members, look at Figure 29 Settings .

Name	Type
Max Teacher Groups	Intiger
Max Groups Member	Intiger
Min Teacher Member	Intiger

Figure 29 Settings table column

5.2.5 Database (tags):

This table contains a type of graduation projects, look at Figure 30 Tags .

Name	Type
Tags Name	String

Figure 30 Tags table column

5.2.6 Database (groups):

The groups table contains information on graduation project (Project Title, Leader ID, Student ID, Project Type, Supervisor ID, and Are the group will be graduated in the first semester or not?)

Name	Type
Graduate In First Semester	String
Status	String
Project Title	String
Leader Student Std	String
Member Std	String
Teacher	String
Tags	String

Figure 31 Groups table column

5.2.7 Database (notifications):

This table contains several columns for users (student and supervisor) that are added when a user is notified.

When the leader notified the student to join the group the student will decide to accept or not,

When the group is completed the leader notified the supervisor added the group to his groups.

In both cases, the supervisor or the student can refuse or accept.

Columns in the table contain : (The sender's ID “from”, the sender's name, the message, The recipient ID ‘Type of message “accept join team, join group, to be supervisor, .. ” and the status “accept, reject, wait, read, read once”).

Name	Type
Name	String
UserID	String
Department	String
Email	String
Mobile Number	String
Role	String

Figure 32 Notifications table column

5.2.8 Database (users):

The user table contains :

- 1- IUG Email
- 2- Mobile Number
- 3- Name
- 4- User ID
- 5- Department : Student (computer science , multimedia , ..) , Admin and supervisor (FIT)
- 6- Role (Student and Admin and Supervisor)

When the user login for the first time the system will generate remember token for each user.

Name	Type
Name	String
UserID	String
Department	String
Email	String
Mobile Number	String
Role	String
Remember Token	String

Figure 33 Users table column

5.2.9 Database (User from Excel):

When the semester begins, the admin uploads an Excel file containing the information for students allowed to take the course

Columns in the table contain: (User ID, department, email, mobile number, name and role).

Name	Type
Name	String
UserID	String
Department	String
Email	String
Mobile Number	String
Role	String

Figure 34 Users from excel table column

Chapter

Implementation

And Testing

6.1 Implementation

In this chapter, the actual implementation of the project is started by programming the web site and application.

6.2 Interfaces User website and Application:

6.2.1 Log in Page:

The Log In page contains welcome message, IUG logo, login button and two text field for email and password, look at Figure 35 Mobile login and Figure 36 Web login.

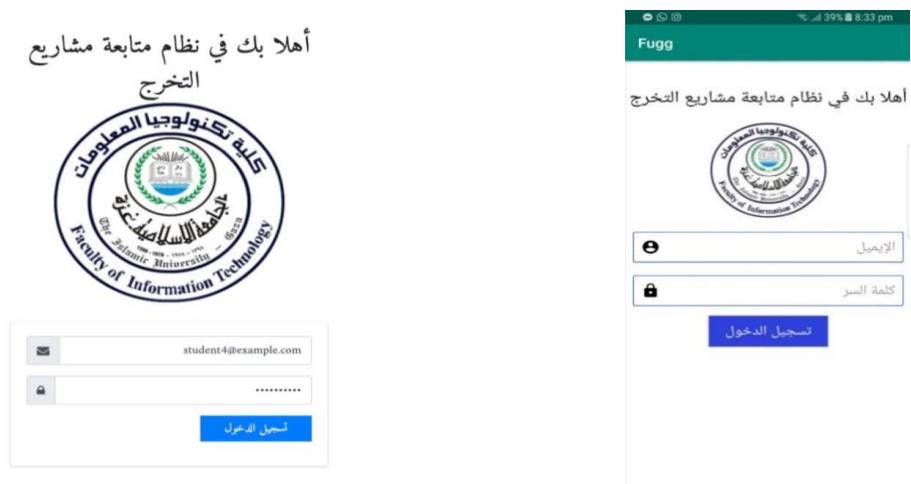


Figure 35 Mobile login

Figure 36 Web login

6.2.2 Student / Group Leader Home Page:

The webpage contains text fields for group leader to enter the student ID, questioning check box, button and notifications, look at Figure 37 Student / Group Leader Home Page.



Figure 37 Student / Group Leader Home Page

The homepage in android app contains text field for group leader to enter the student ID, questioning check box and button but the programmer creates new page to show notifications for student, look at Figure 40 Group student Home Page and Figure 39 Group Leader Home Page.



Figure 39 Group Leader Home Page

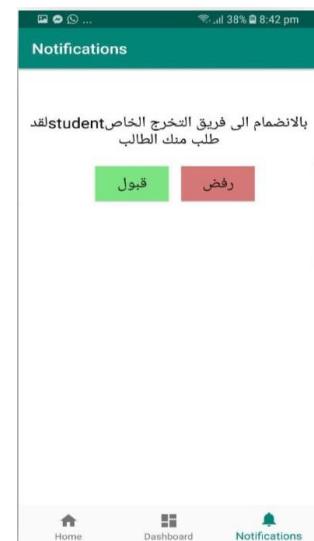


Figure 38 Group student Home Page

6.2.3 Project Details Page:

The Project details page contains button and three text fields for group leader to inter project title, project type and select the group supervisor, look at Figure 42 Web project details page and Figure 41 Mobile project details page.

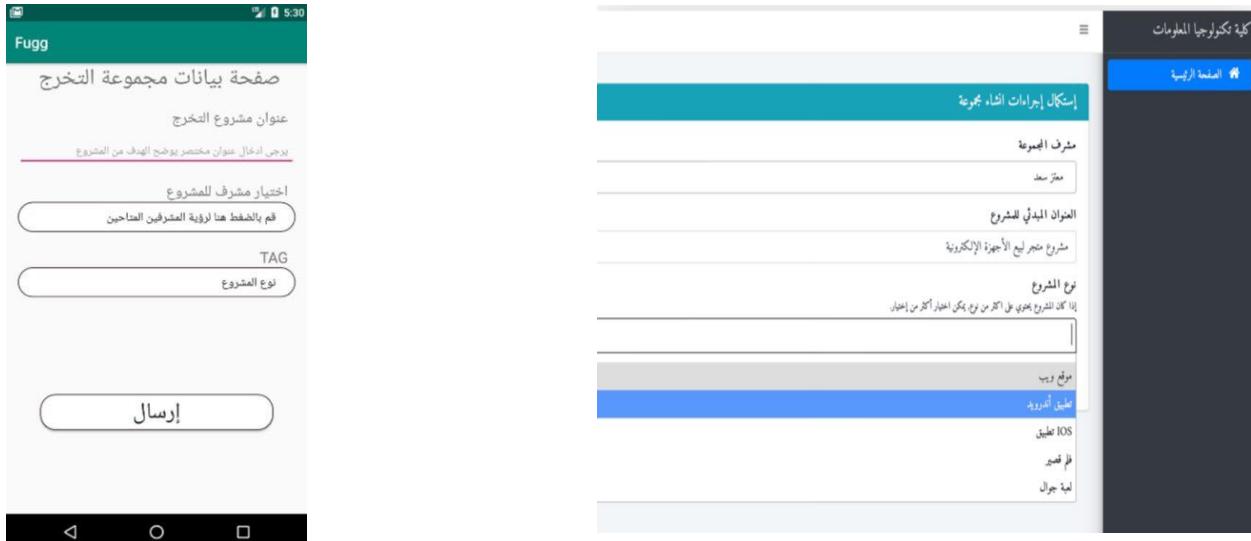


Figure 40 Web project details page

Figure 41 Mobile project details page

6.2.4 Main Supervisor Page:

The Main supervisor page in android app contains many labels to show all project details and two (Yes or No) buttons, look at Figure 42 Main Supervisor Page mobile.



Figure 42 Main Supervisor Page mobile

The Main supervisor webpage contains many labels, at the top page it shows notification and two (Yes or No) buttons at the left side of the page, at the page below it shows all project details for his groups, look at Figure 43 Main Supervisor Page web.

The screenshot displays the main supervisor's dashboard. At the top right, there are navigation links: 'كلية بكتوريج المعلومات' (College of Technology and Information Sciences) and 'الصفحة الرئيسية' (Home Page). On the left, a red 'رفض' (Reject) button and a green 'قبول' (Accept) button are visible. The main content area is divided into sections:

- الإشعارات** (Notifications):

#	الرسالة	المتلقى للمشروع	أسماء أعضاء الفريق	الرد
1	هذا هو العنوان الميداني للمشروع ١ أسامة كمال جاد الله التبريس، ١١ التيبيان تكون مشرف مشروع التخرج قربيه.	هذه هي طلب منك الطالب أسامة كمال جاد الله	أسامة كمال جاد الله التبريس، ١١	student19, student11
- بيانات المجموعات الخاصة بك** (Your Group Data):

المجموعة	الرقم الجامعي	اسم الطالب	رقم الموبايل	القسم	البريد الإلكتروني
المجموعة ١	120165131	student18	0596427131	علم الحاسوب	student18@example.com
	120165390	student14	0596113052	تطوير البرمجيات	student14@example.com
- بيانات المشروع** (Project Data):

عنوان الميداني:	هل المجموعة تجربة فعل أول؟
عنوان ميداني للمشروع تجاري ١٢٣	لا

Figure 43 Main Supervisor Page web

6.2.5 Main Admin Webpage:

The Main admin webpage contains navigation bar at the right side (Home page , system setting , student info , supervisor info and group info), at the top page contains four labels , it shows notification below the labels , at the middle of the page it shows two figures (Reports) , bellow the figures there are six Text filed to added student manually and below it show all project details for his groups and one upload button at the bottom of the page, Figure 44 Main Admin Webpage.

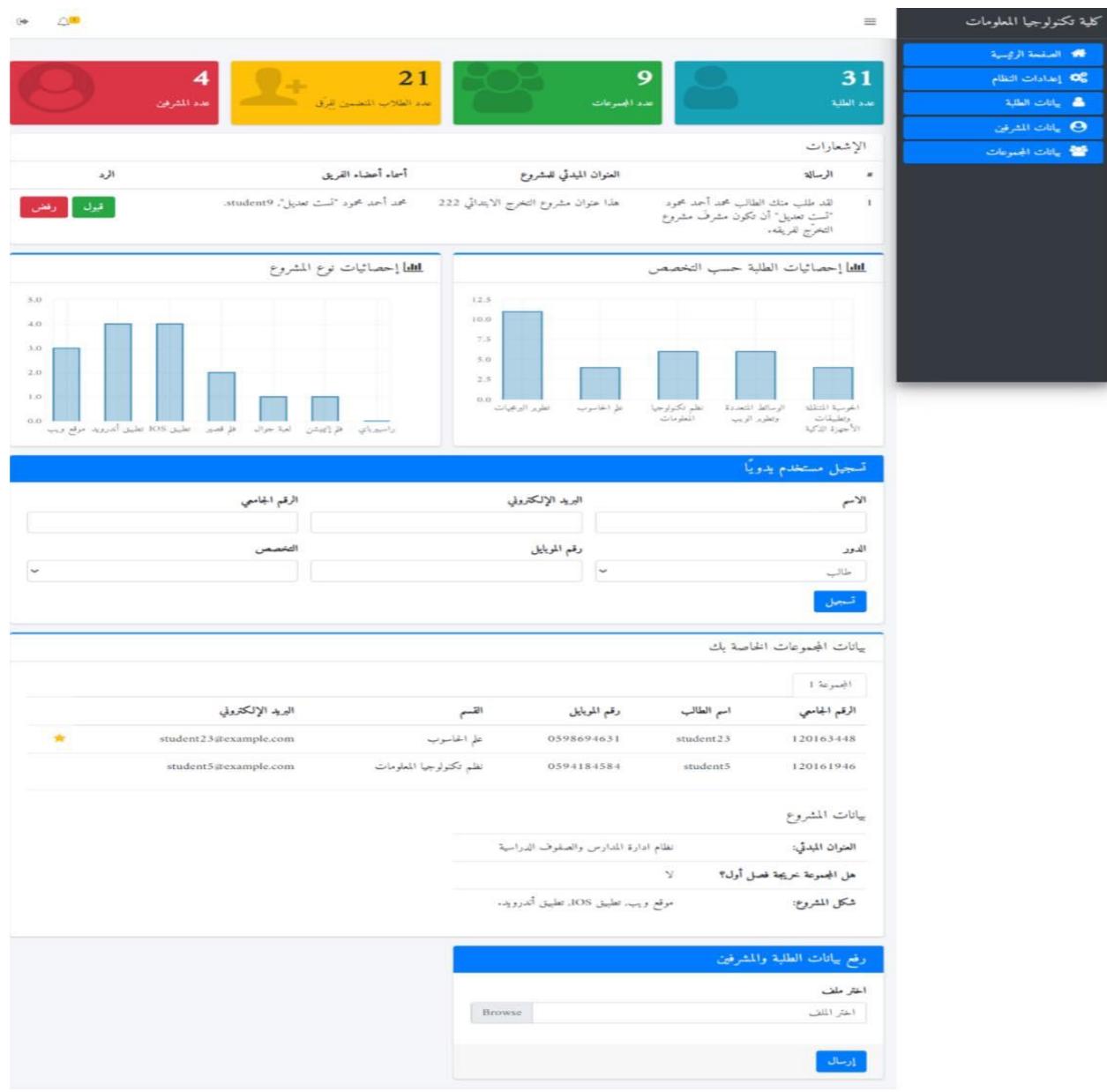


Figure 44 Main Admin Webpage

6.3 Testing

In this chapter, we do test of the project at the web site.

When the semester begins, the admin uploads an Excel file containing the information for users allowed to take the course. When Excel file uploaded, the admin send email to each student to create a password to enter the system (application and website).

6.3.1 Create password Email:

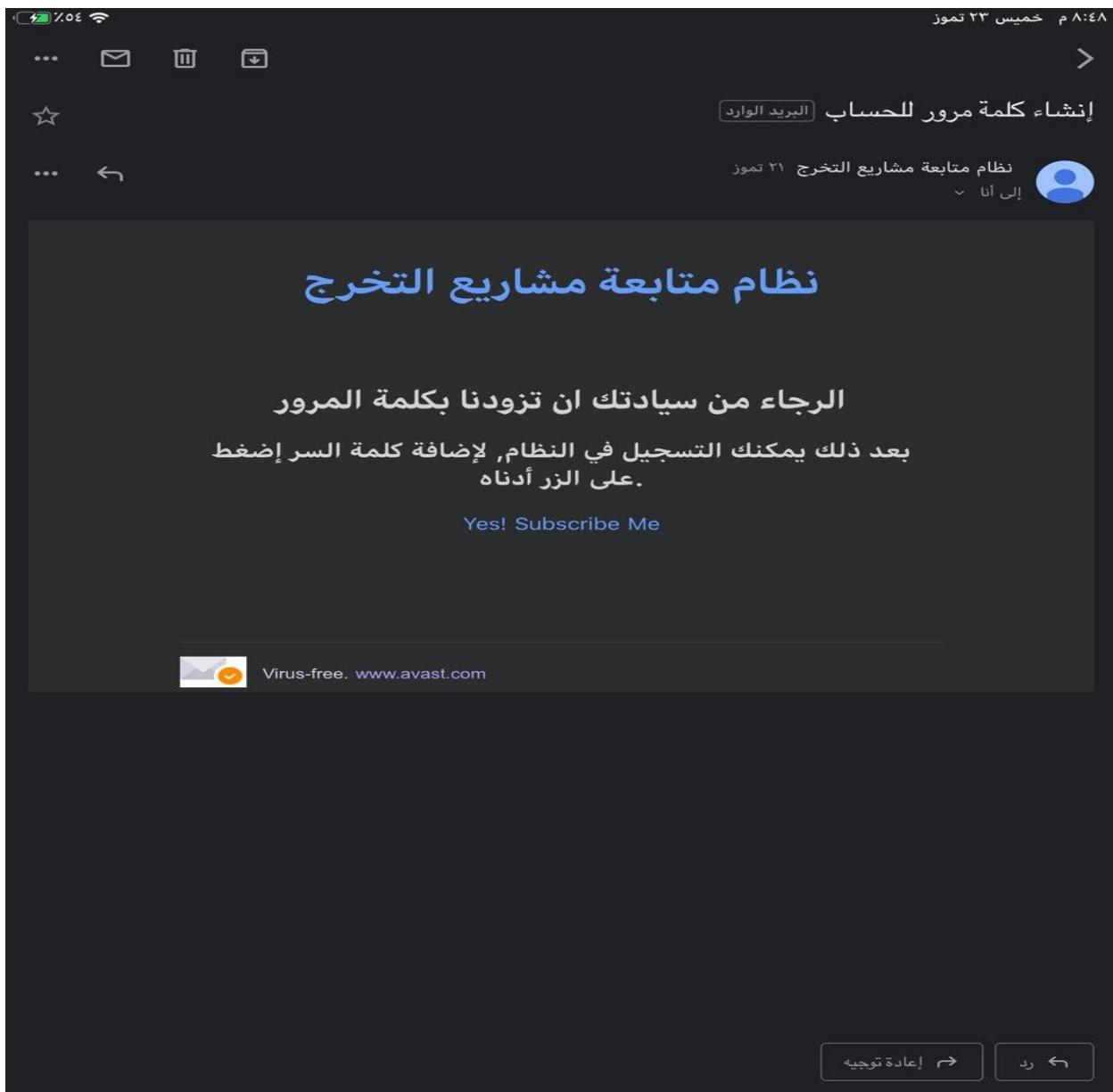


Figure 45 Create password mail

6.3.2 Password create successfully:



Figure 46 Password Create successfully

6.3.3 Login validation:

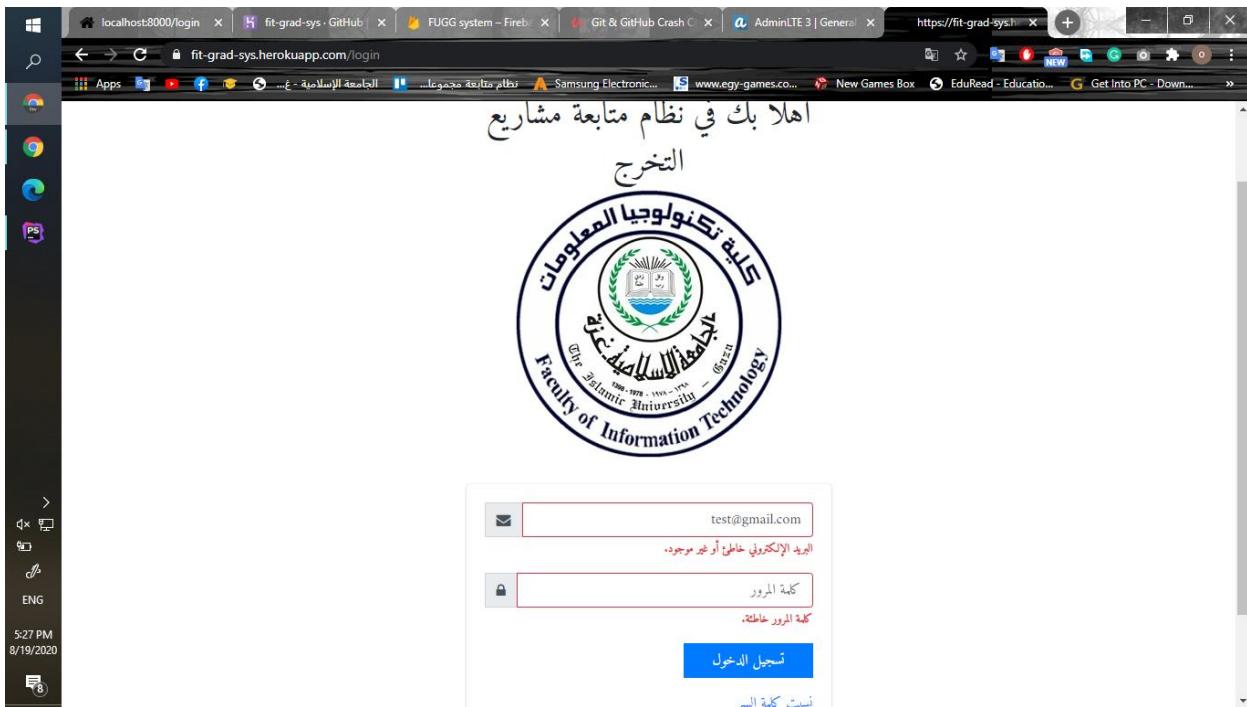


Figure 47 Website login validation

And for android



Figure 48 Android login validation

6.3.4 Create user manually:

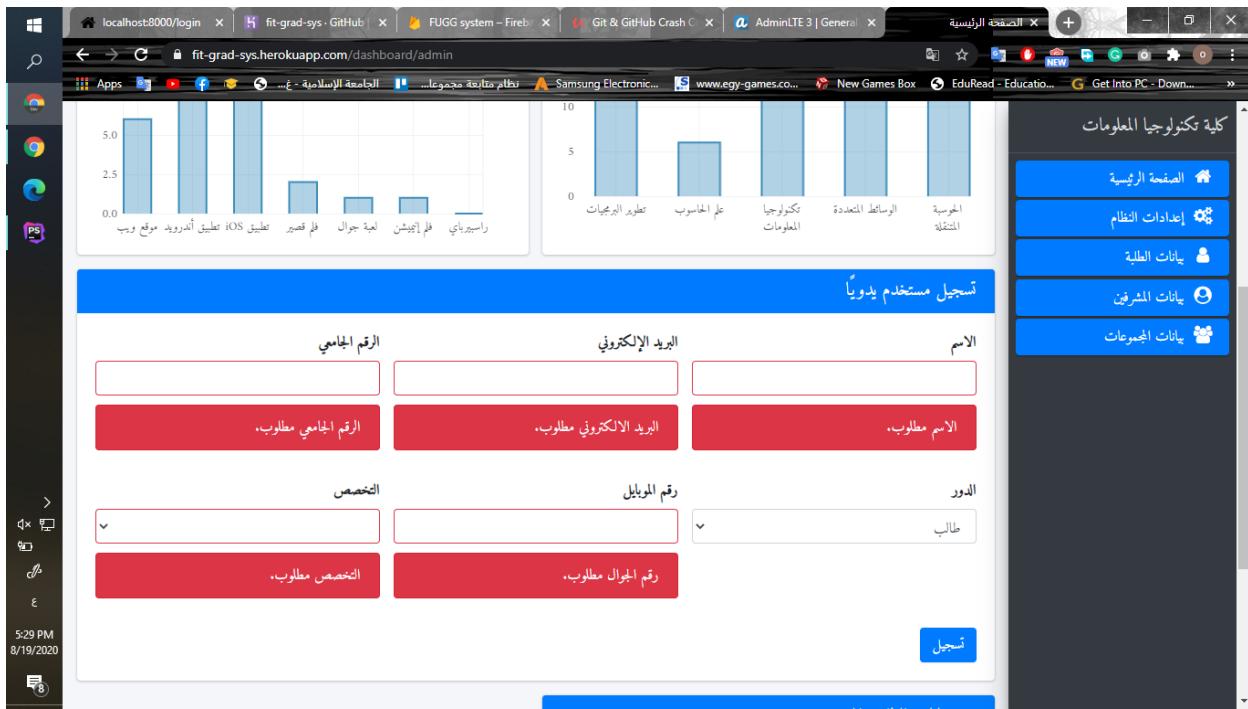


Figure 49 Create user manually validation

6.3.5 Check role when create user manually:

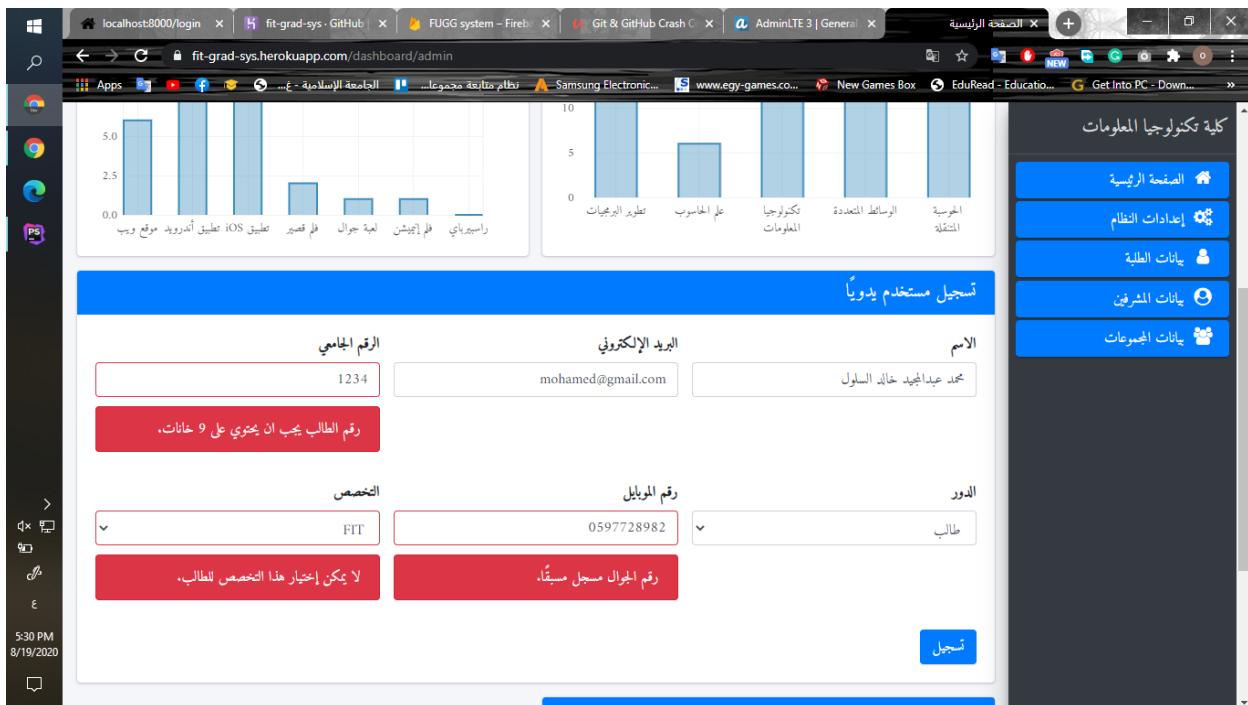


Figure 50 Check role when create user manually

**Chapter
Conclusion
And
Bibliography**

7.1 Conclusion

We develop the GGTS system to help the student create and show their groups and make manage, edit and show students, teachers, and groups easier for graduation research committee. The GGTS also can give some computing statistic that can be followed up in a clear and easy way.

If a project will be at different platforms like web and mobile, the tools that will be used in project should be tested earlier to not be corrupted because something may not work at other platforms. Because of that we cancel iOS application from this project.

In the Islamic University of Gaza in general, and the College of Information Technology in particular, there are a lot of paperwork transactions and systems used to manage and organize the various procedures at the university, and it is important that all of those paper systems be converted into computerized systems that keep pace with the development, and because this helps to develop the educational process. the University.

It is a very great and beautiful thing for students to gain skills, experience, and knowledge from the university, and then apply what they have acquired to upgrade and develop the university's systems that is something, that is what we do and that makes you feel accomplished, and that you offer something for the benefit of future generations after you.

It seemed at its beginning and as the desire of any student aspiring to graduate with all that rush and enthusiasm that heralds the birth of a new stage in your life. With others.

7.2 Future work

There are some ideas that can be applied to the system, but time has not allowed us to do so like:

- The group leader is looking for a member with specific expertise.
- Way to schedule meetings with the supervisor.

7.3 Bibliography

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