



University Registration

Year 2023

____ Software Requirements ____
Specification

Under Supervisor : Dr/Mohammed Mamdouh





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Revision History

Name	Date	Reason For Changes	Version

1.Introduction

1.1 Purpose:

- ✚ The purpose of the project is to make a website that makes the registration process easier and faster for credit hour student.
- ✚ System will allow student to fill the registration form online.

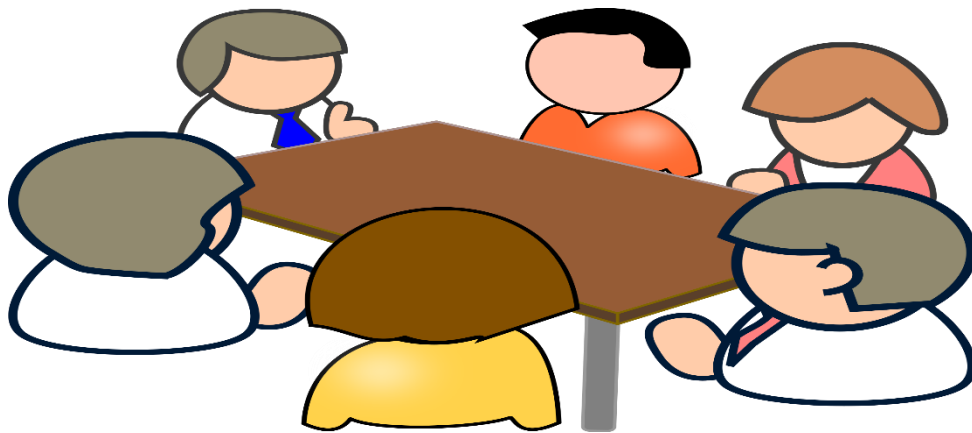
1.2 Product Scope:

System will provide to the user:

Online registration and Saving data and Choose courses which be available to him and accepting or rejecting student's choices according to his academic status .

1.3 References:

- ✚ We did an interview with the teacher assistant (TA) and the collage agent asked them all the questions that helped us in our project.
- ✚ We Use the regulation of the University to know more information about the registration system.



2. Overall Description

2.1 Product Functions:

- ✚ A registration system is a tool used to register students in credit hours system in an easy and fast way.
- ✚ This system gives you some feature under certain conditions
 - Register overload course.
 - Take self-study course.
 - Drop a course.
 - Retake course to improve GPA.

2.2 User Classes and Characteristics:

These are the users who can use the registration system are

1. Students

They can register their courses by adding, Dropping, overloading, and applying for All self- study courses by contacting the TAs on the system to accept or refuse the request to complete the registration process. They can also apply for an exam excuse.

2. TA

They are responsible for course registration each for a specific number of students. They can accept or reject the students' requests for overloading and self-study courses. They also have access to all students' information and transcripts and can send them warnings.

3. Doctors

They can download their schedules

2.3 Operating Environment:

The online registration system can be done through following web browsers:

- Microsoft Internet Explorer version 5.0, 6.0, 7.0.
- Google chrome version 0.3, 0.4.
- Mozilla Firefox version 0.6 ,0.7 ,0.8.
- Opera version 12.12 ,12.13 ,12.14.
- Lynx version 3.0 ,4.0 ,5.0.



➤ **Hardware (client's system minimum requirements):**

✚ For PCs and lab tops :

- CPU:1.6 GHz
- Screen resolution 1024x768
- RAM: 4GB RAM
- stable network connection

✚ For Mobiles:

- RAM:4GB RAM.
- Stable network connection.

➤ **Software (server's system):**

- Linux.
- Windows.
- Mac.
- IOS.
- Android.

2.4 Assumptions and Dependencies:

- The total number of users in the system are 10000
- The maximum number of users that can use the system at the same time 5000

3.System Functions:

3.1 Create Account:



Code	Requirement	Must/Should	Comment
FR001	You need to enter your personal information. Such as: “Phone-no, first name, last name, Id, university email, age”	Must	
FR002	You will receive a verify code.	Must	
FR003	Enter a verify code you receive throw a phone number to active your account.	Must	

3.2 Login

Code	Requirement	Must/Should	Comments
FR004	You need to enter your username and password as (Student – register)	Must	
FR005	Click remember button to save your data in the system incase visiting site again.	Should	
FR006	In case you forget password. click forget password button.	Should	

3.3 Forget password:

Code	Requirement	Must/ Should	Comment
FR007	You need to enter phone number or email and enter a code you receive throw phone number /university email to allow you to change password.	Must	

3.4 Distribute student:

Code	Requirement	Must /Should	Comment
FR008	Distribute number of students almost equally in the TA	Must	

3.5 Register a course:

Code	Requirement	Must/Should	Comment
FR009	Enter student id.	Must	
FR010	Allow student choose course name if he complete a prerequisites courses.	Must	
FR011	upload payment receipt	Must	
FR012	Allow student to register up to 18h if CGPA ≥ 2 during fall/spring	Must	
FR013	Allow student to register 12h if CGPA < 2 during fall/spring.	Must	
FR014	During summer allow student to choose 12 h if he/she complete 129 h else make the student choose 9 h .	Must	
FR015	Make the student confirm the registration if the student enters all data.	Must	

3.6 Create overload:

Code	Requirement	Must /Should	Comment
FR016	Enter student id and course name.	Must	
FR017	Display a message that a request Accepted if CGPA >3, the course is available, total hour mustn't exceed 21 h during fall and spring this course mustn't be conflict with another one and passes prerequisite course else display a message that a request rejected	Must	
FR018	Ask user to pay a course fee and upload the receipt To confirm the registration.	Must	

3.7 Make overload for graduation exception:

Code	Requirement	Must/Should	Comment
FR019	Allow student to enter her/his id .	MUST	
FR020	Allow student to choose one course if he/she completes at least 108 h if he completes the pre-request courses, this course mustn't be conflict with another one .and total hour mustn't exceed 21 h in fall and spring and mustn't exceed 12 h in spring.	MUST	
FR021	Ask user to pay a course fee and upload the receipt to confirm the registration.	MUST	

3.8 Make drop:

Code	Requirement	Must /Should	Comment
FR022	Enter student id, course name.	Must	
FR023	Accept if we still before fourth week and delete this course from registration system.	Must	
FR024	Send email to financial management to return the deleted course fees to the student's bank account.	MUST	
FR025	Display message to student that course fees will return to bank account.	MUST	

3.9 Retake Course:

Code	Requirement	Must/Should	Comment
FR026	Enter student id and course name.	MUST	
FR027	Accept to retake if the student registers this course during summer or in normal semester that course open and delete previous grades from Cumulative GPA	MUST	
FR028	Ask user to pay a course fee and upload the receipt To confirm the registration.	MUST	

3.10 Add Course:

Code	Requirement	Must/Should	Comment
FR029	Ask student to enter his/her Id and course name.	MUST	
FR030	Accept if course available during registration time, CGPA ≥ 2 , the number of registered hours < 18 and if the total hours doesn't exceed 18 hours during fall / spring.	MUST	
FR031	Accept if course available during registration time , CGPA < 2 ,the number of registered hours < 12 and if the total hours doesn't exceed 12 hours during fall / spring.	MUST	
FR032	Accept to add course in the summer if the total hours he/she registers don't exceed 9 hours and the course is available.	MUST	

3.11 Add Warning:

Code	Requirement	Must /Should	Comment
FR033	Add this student registration in add warning list if CGPA < 2 .	MUST	

3.12 Apply Exam Excuse:

Code	requirement	Must /Should	Comment
FR034	Ask student to enter his/her Id, course name he/she didn't attend, reason for absence, Doctor's email to send the data to him .	MUST	
FR035	Display message to student to wait doctor response.	MUST	

3.13 Add self-study course:

Code	Requirement	Must/Should	Comment
FR036	Ask student to enter his/her Id and course name.	Must	
FR037	Accept if student total hours he completed greater than or equal 108 hour and he take this course during last 3 semester.	MUST	

3.14 Check Availability

Code	Requirement	Must /Should	Comment
FR038	Check the courses that the student choose is available or not according to regulation	Must	

3.15 Accept transfer student :

Code	Requirement	Must/Should	Comment
FR038	Ask student to upload a report contain all courses he taken in other university.	MUST	
FR039	Delete all courses he takes and not exist on this university and calculate his/ her GPA if other courses from grade C- to A.	MUST	
FR040	Display message to that he accepts in this university if his/ her GPA ≥ 2 .	MUST	
FR041	Add this student in system and save his cumulative GPA as zero.	MUST	

3.16 Download Course list:

Code	Requirement	Must/Should	Comment
FR042	Doctor and TAs can download course list by enter Student id .	Must	
FR043	Download course list. Included course code, Doctors name , Student id , Name of student , Name of course.	Must	

3.17 Download list of students:

Code	Requirement	Must /Should	Comment
FR044	Student and TAs can download list of student by enter Student id .	Must	
FR045	Download list of students included. name of student, Email ,Total credit hours , Earned hours , ID, GPA, Transfer student or not.	Must	

3.18 View Transcript:

Code	Requirement	Must/Should	Comment
FR046	Student and TAs can download transcript by enter Student id	Must	
FR047	Download the transcript included course name and grades of all courses that he taken.	Must	

3.19 Download overall schedule:

Code	Requirement	Must/Should	Comment
FR048	Admin can download schedule of all levels included names of all available courses ,Available time for all courses, Room number, Sections , Tutorials , course codes, Name of doctors, Name of TA.	must	

3.20 Download doctor schedule:

Code	Requirement	Must/Should	Comment
FR049	Doctor can download his/ her schedule of All courses which he/she teach in the semester, room no, course name, time, group.	must	

3.21 Download TA schedule:

Code	Requirement	Must /Should	Comment
FR050	TAs can download his/ her. schedule of All courses which he/she teach in the semester, course name, room no, sections, time.	must	

3.22 Download student schedule:

Code	Requirement	Must/Should	Comment
FR051	Student can download his/ her schedule included: Student name, Courses, Lab time ,lecture time ,Room ,ID , Total GPA.	must	

3.23 Logout:

Code	Requirement	Must/Should	Comment
FR052	Ask the user if he/she wants to save her/his personal information that entered.	should	
FR053	Return to home page.	must	

4.Non-functional Requirement:

4.1 Security:

Code	Requirement	Must/Should	Comment
NFR001	The system does not give any permission to user, such as modification, deletion, or addition.	MUST	
NFR002	Permissions are tied with time limits. Every action should be set with a time limit before giving user permission for an activity	MUST	
NFR003	Close the session if it continues to be open for more than 2 minutes.	MUST	
NFR004	Only users with the role “site admin” can edit applicants’ verified data. Scheduled monitoring to check if unauthorized user edited data.	MUST	
NFR005	The system does not accept the password. if it less than 8 letter/number and at least one capital letter/special character.	MUST	

NFR006	Don't allow user to enter password for 30 second if he/she write a wrong password more than 5 times.	MUST	
NFR007	the database should be secured from data attacks like: SQL injection to prevent leak or loss any important information from the system.	MUST	
NFR008	Add a firewall both physical and virtual. Firewall efficacy is measured by amount of attacks prevent during a period of time.	MUST	
NFR009	Assurance that the entire application is secured. What percentage of functions included in application is secure oriented development life cycle	MUST	
NFR010	Critical data should be encrypted and stored in a different server than the rest of the system.Encryption technique is measured by duration it takes an attacker to crack it.	MUST	
NFR011	Amount of vulnerabilities found during a period of time. Vulnerabilities count is measured and compared to each other per month.	MUST	
NFR012	Amount of testcases running on system, number of success and failures	MUST	

4.2 Reliability:

code	requirement	Must/should	Comment
NFR013	Check that percentage of the probability of failure doesn't exceed 0.01%.	MUST	

4.3 Availability:

Code	Requirement	Must/Should	Comment
NFR014	The system must be available 24 hour per day but if we have any problem or anything unusual or bug, we will have no more than 20 minutes downtime per day	MUST	
NFR015	During critical functions go-live, system should be monitored 24/7 and any issues should be resolved asap	MUST	

4.4 Usability:

Code	Requirement	Must/Should	Comment
NFR016	Make form(S) easy to complete	MUST	
NFR017	The ease to navigate through the website	MUST	
NFR018	System's UI/UX should reflect the interest of the user and make it easier for them to complete their tasks	MUST	
NFR019	System should accommodate the accessibility issues of their users. 1- Make colors (color-blind accessible) 2- Make it accessible for OCD afflicted persons (try to make all designs symmetrical with no overdesigned imagery)	MUST	

4.5 Performance:

Code	Requirement	Must/Should	Comment
NFR021	The website's load time should not be more than 0.5 second for users	Must	
NFR022	The system should be compatible with all modern browsers to be easier for users.	Must	



5. Diagrams

- ❖ Data-Flow Diagram (DFD)
- ❖ Entity-Relationship Diagram (ERD)



University Registration

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Interview Outline

Interviewee: Dr/Dina Darwish

interviewer: Aya Mohamed , Bakinam Mohamed , Arwa Adel , Amira Yasser , Nahed Mortada

Location: University Office

Appointment Date:13/3/2023

Start time: 11:30am

End time: 12:12pm

Agenda:

Approximate Time:

Introduction: On this topic, we will specialize in talking about the university Registration , which makes the registration more easier for students.

5minutes

Background on project: Collecting and analyzing information to create a system for the registration

1minute

Topic to be covered:

introduction to university

2 minutes

Background

3 minutes

Students , TA

2 minutes

Overall description

35 minutes

Permission to record. yes

Interviewee: DR/ Dina

Date: 13/3/2023

Question 1: Can you help us to know more information about registration system in university?

Answer: Of course, why not

Observation:

Question 2: What is the registration system in ACU university?

Answer: A registration system is a tool used to register students in credit hours system in an easy and fast way.

Observation:

<p>Question 3: What are the goals of the registration system?</p> <p>Answer: To make registering any course easier for students, allow students to register online and save student's data.</p> <p>Observation:</p>
<p>Question 4: Is the registration system in ACU good or not?</p> <p>Answer: Yes, Good</p> <p>Observation:</p>
<p>Question 5: Who can use the system?</p> <p>Answer: TAs, Doctors and students.</p> <p>Observation:</p>
<p>Question 6: How many users register in the system?</p> <p>Answer: In average 5.000 user.</p> <p>Observation:</p>
<p>Question 7: What devices do the users use?</p> <p>Answer: We use Laptops , phone and PCs</p> <p>Observation:</p>
<p>Question 8: What the web browser use?</p> <p>Answer: We use Microsoft Internet Explorer, Google chrome, Mozilla Firefox, opera and lynx.</p> <p>Observation:</p>
<p>Question 9: Is it necessary for the students to register by university email?</p> <p>Answer: yes</p> <p>Observation:</p>
<p>Question 10: What does the registration system depend on?</p> <p>Answer: On credit hours.</p> <p>Observation:</p>

<p>Question 11: How many hours that allow students to register in the semester?</p> <p>Answer: Normally,18 hours.</p> <p>Observation:</p>
<p>Question 12: Is it necessary for the students to register by university email?</p> <p>Answer: Yes</p> <p>Observation:</p>
<p>Question 13: What is the dependence that students register number of hours on it?</p> <p>Answer: According to GPA</p> <p>Observation:</p>
<p>Question 14: Can you give me more details about GPA ?</p> <p>Answer: If student's GPA <2 can register 12 hours. Else, you can register for 18 hours in fall / spring.</p> <p>In summer, students can register for 9 hours.</p> <p>Observation:</p>
<p>Question 15: What is the difference between credit hours and grade registration system?</p> <p>Answer: Credit hours use feature (overload, drop, self-study)</p> <p>Observation:</p>
<p>Question 16: Is there any rules to register with these features?</p> <p>Answer: Of Course</p> <p>Observation:</p>
<p>Question 17: What are the rules for overloading any course?</p> <p>Answer: Student's GPA>3 doesn't exceed 21 hours and students must pass pre-requisite courses.</p> <p>Observation:</p>

<p>Question 18: Is there any exception for graduation?</p> <p>Answer: It doesn't depend on her/his GPA.</p> <p>Observation:</p>
<p>Question 19: What should students do to confirm overload of course?</p> <p>Answer: Pay fees of course and upload the respite.</p> <p>Observation:</p>
<p>Question 20: What are the rules of self-study courses?</p> <p>Answer: Students who just graduated take self-study courses if they register for it during the last 3 semesters.</p> <p>Observation:</p>
<p>Question 21: What are the rules of drop?</p> <p>Answer: The student can drop any course during a specific time.</p> <p>Observation:</p>
<p>Question 22: How long can the student drop any course?</p> <p>Answer: Before four weeks.</p> <p>Observation:</p>
<p>Question 23: can student take his/her fees of the drop course?</p> <p>Answer: Yes, can take its fees .</p> <p>Observation:</p>
<p>Question 24: if students absent from any exam .is there any makeup exam?</p> <p>Answer: Yes, according to rules.</p> <p>Observation:</p>
<p>Question 25: What are the rules makeup exam?</p> <p>Answer: Tell me why he/her was absent and make an excuse.</p> <p>Observation:</p>
<p>Question 26: Can a student retake any course after passing it?</p>

Answer: Yes, in order to improve his/her GPA.

Observation:

Question 27: I wonder if you agree to transferring students?

Answer: According to regulation

Observation:

Question 28: What are the types of schedules?

Answer: TA schedule, Doctor Schedule, student schedule.

Observation:

Question 29: What are the contents of schedules in university?

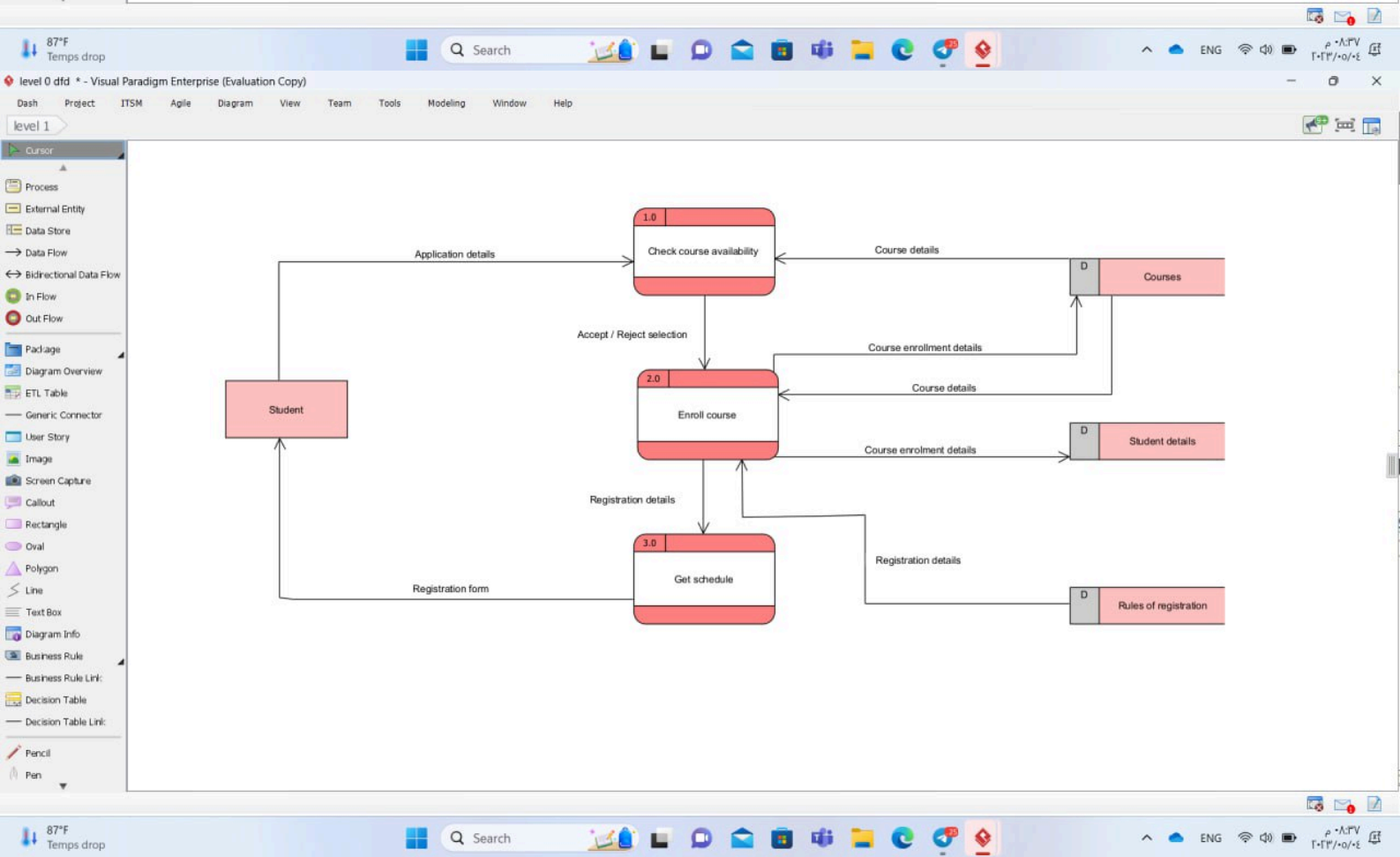
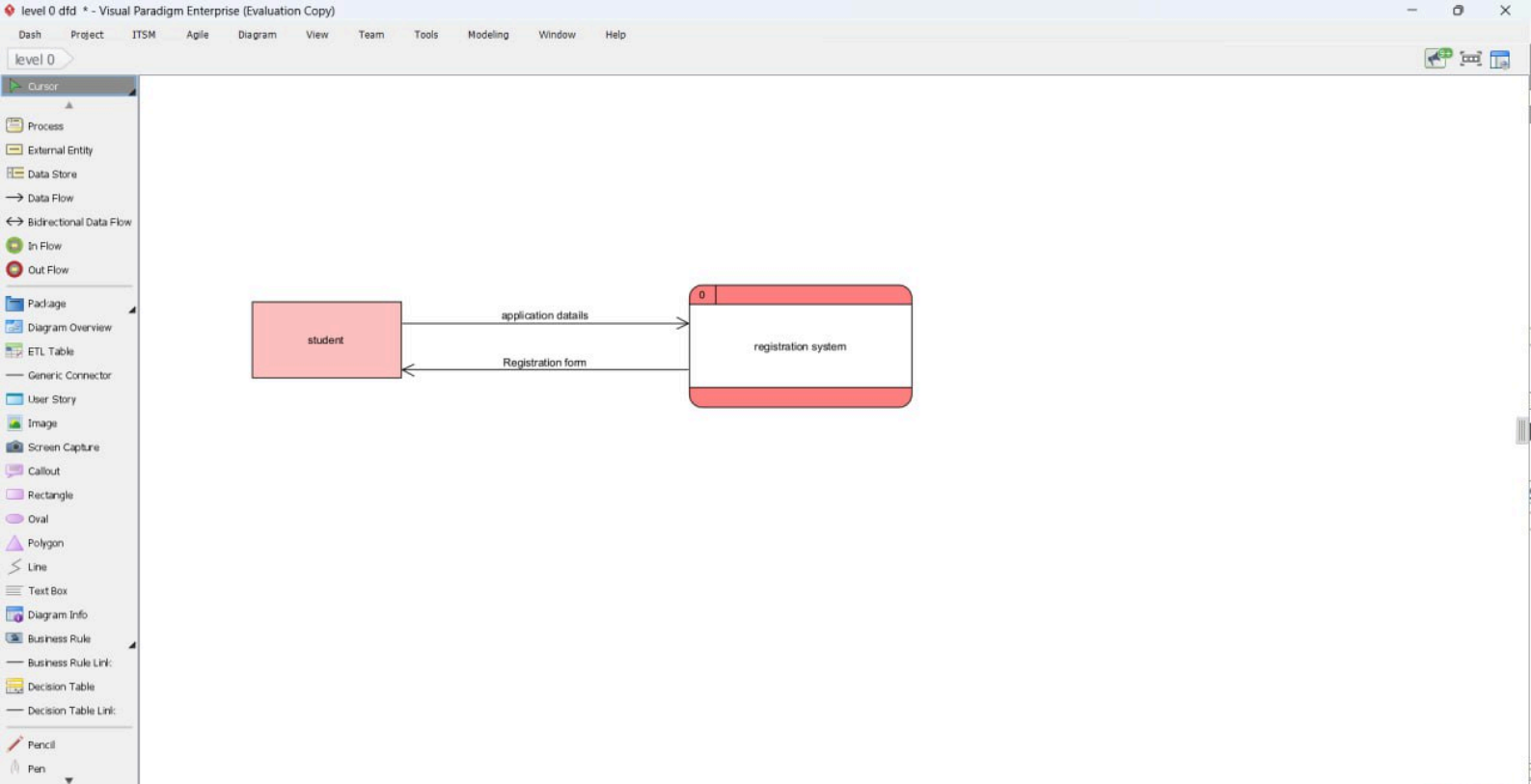
Answer: Look at the TA system.

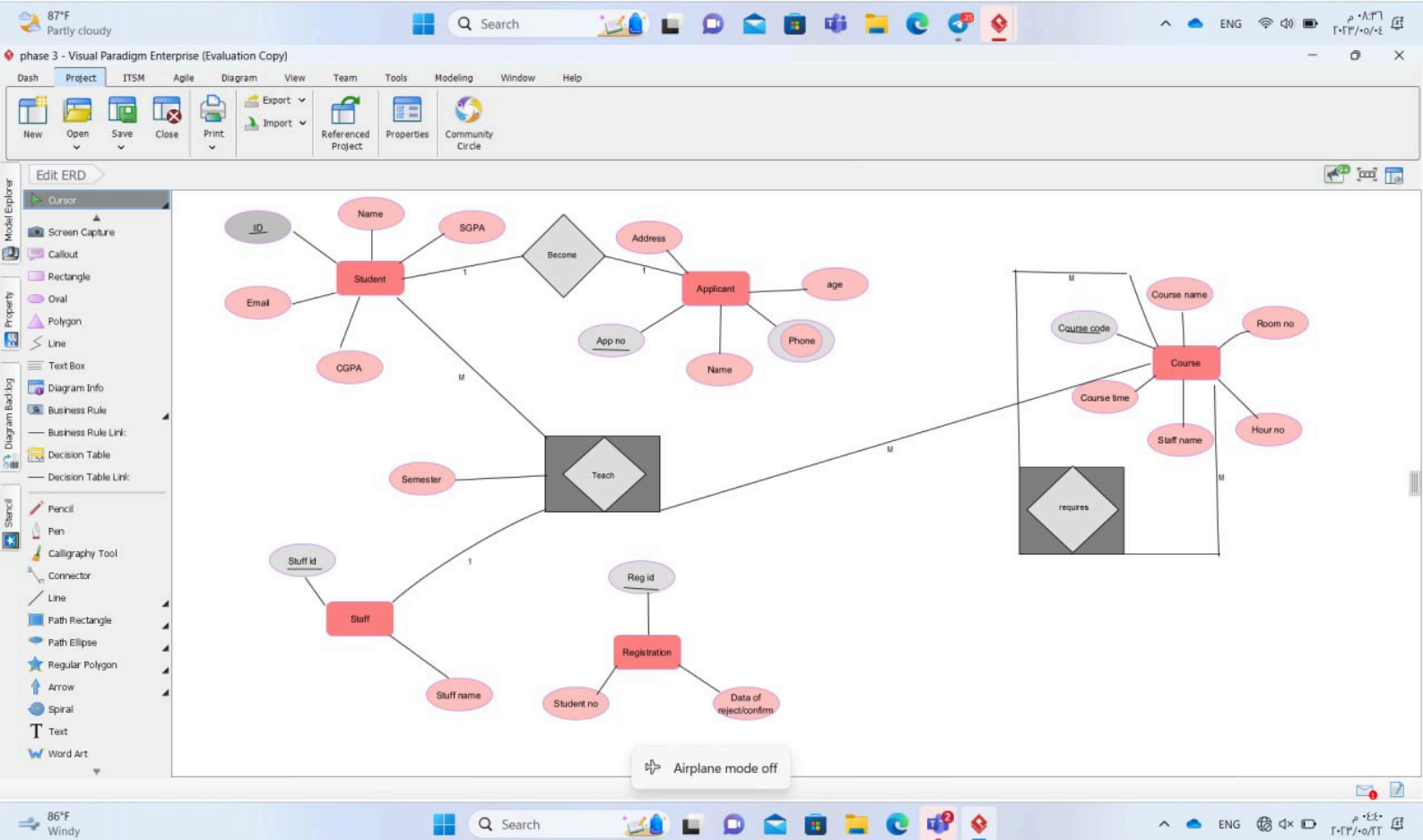
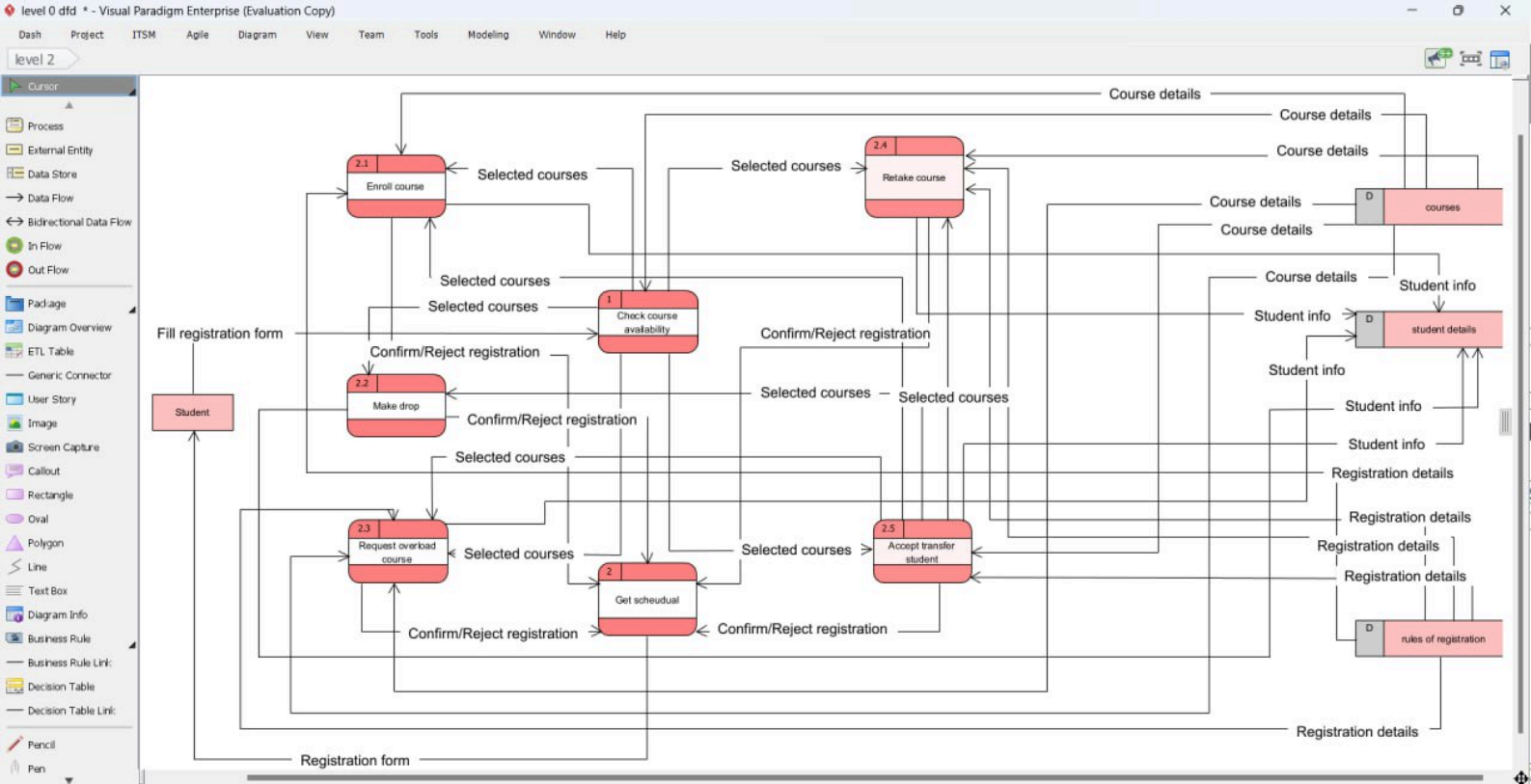
Observation:

Question 30: Is just one teacher assistant that register for all students?

Answer: No, we distribute the number of students almost equally on TAs. Look at the TA system.

Observation:





MySQL:

```
CREATE TABLE Registration (  
    Reg-id int NOT NULL PRIMARY KEY,  
    Student-no int NOT NULL,  
    Data-of-reject/confirm varchar (50),  
    Age int  
);
```

```
CREATE TABLE Student (  
    Student-ID int NOT NULL,  
    Name varchar(50) NOT NULL,  
    CGPA float NOT NULL,  
    Email varchar(50) NOT NULL,  
    CONSTRAINT PK_ Student PRIMARY KEY (Student-ID)  
);
```

```
CREATE TABLE Applicant (  
    App-no int NOT NULL,  
    Name varchar (50) NOT NULL,  
    Address varchar (50) NOT NULL,  
    Phone varchar (50) NOT NULL,  
  
    Age int NOT NULL,  
    CONSTRAINT PK_ Student PRIMARY KEY (App-no),  
    FOREIGN KEY (Student-ID) REFERENCES Student (Student-ID),  
  
);
```

```
CREATE TABLE Staff (  
    Staff-ID int NOT NULL,  
    Name varchar (50) NOT NULL,
```



```
);  
CONSTRAINT PK_ Student PRIMARY KEY (Staff-ID)
```

```
CREATE TABLE Course (  
  course-code int NOT NULL,  
  course-name varchar (50) NOT NULL,  
  Room-no int NOT NULL,  
  course-time date NOT NULL,  
  
  Hour-no int NOT NULL,  
  
  Staff-name varchar (50) NOT NULL,  
  CONSTRAINT PK_ Student PRIMARY KEY (App-no),  
  FOREIGN KEY (Student-ID) REFERENCES Student (Student-ID),  
  FOREIGN KEY (Staff-ID) REFERENCES Student (Staff-ID),  
  
);
```