



My Future+ App: Final Report

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Introduction:

In our university life, as students and employees of the University of Jeddah, we need to provide services that facilitate and speed up the use of the services provided. Therefore, we want to develop the future+ program to allow students to book an appointment with professors during official working hours. Through the application, students can know about absence and deprivation notices. In addition to reserving parking spaces for students, professors, and other employees. Through the application, the student will be able to know the number of violations and penalties required. It also provides a location map of the university's buildings.

Lab 2**Interviews description:****1. Interview with: Instructor****(Maram)****a. Evaluation of a User Request:**

Name: Amal Nassim job: Instructor phone number: 0505357145

Interview date: 28/12/2022

b. Description of the problem:**1- Do you face any problems in scheduling office hours for students?**

- In fact, the problem with scheduling office hours for students is the problem of overcrowding students or the presence of many students at the same time. If you find a mechanism to organize appointments, it will be a good thing.

2- Do you feel that you will benefit from the application if we add a feature that helps - you in scheduling appointments by specifying the number of students and the time? Will you use it?

- Yes, of course, because it will organize my time and the time of the students, and each student will have enough time. Also, we will not have to rush, and in addition to answering the questions of all the students.

3- Do you feel that if we add the feature of showing tables to faculty members, it will also help you?

- Of course, this will save me the effort of searching for upcoming lectures, their time, and knowledge of the subject.

4- Do you have any other suggestions for features we can add?

- The most problem I face is when I have a lecture and I go to the room, then I find that the students have an exam and I have not been notified of that, and this is annoying. It is possible to add the feature of notifying the instructor that there is an exam for the students.

c. Analyst comments:

After conducting the interview, it was found that the instructor face more than one problem in dealing with students and scheduling office hours, in addition to their annoyance at not being notified of students' exam dates. So, we find that the features that we suggested adding to the application will help them a lot.

2. Interview with: Student

(Mayar)

a. Evaluation of a User Request:

Name: Natalie Al-Zahrani Job: Preparatory year student Number: 0552441552

Interview date: 29/12/2022

b. Description of the problem:

1- Hourly parking reservation service, does it benefit you as a university student?

- Yes, it may seem an illogical idea to some because it has not happened before, but because some people park their car for days for personal reasons without limits, it may lead to the fullness of the parking lots, and it may benefit the reservation by knowing in advance whether a parking space is available or not, because in this case the person can manage. If there is no place to park the car and find an alternative solution, such as someone taking the student to his university or finding parking spaces in another place, and if this place is far away, he can come early and then continue walking to the university. If he does not find a parking lot without reservations, he may have to Park the car far away and walk and get to the lecture late.

2- Do you face the problem of moving between buildings and finding classrooms?

- In most cases, yes, movement in the university is difficult in most cases because there are many buildings, between each building and building a distance of not less than a kilometer, and some students may have to move from one building to another in order to take their lessons, knowing that the breaks are often from 10-50 Minutes in most cases, so that if the break was of short duration and you did not know the roads, you might get lost and need Google Map to reach the other building, but it takes time, and some students do not have the Internet, and that Google Map is difficult to track and inaccurate. Regarding moving between the classrooms in the building, if there is a map on the phone, it will be easier, faster, and better for many students, including myself, as some students often ask me about the locations of the classrooms.

3- Do you support the availability of all these services in one application or not?

- Of course, I completely agree to provide all the services that help students and professors in one application. First, it shortens time a lot and saves time as well. Secondly, some people do not have enough space on their cell phones, so the fact that all services are in one application will provide more capacity and services can be used. Thirdly, the arrangement Without getting lost between the applications, it can be arranged so that it is easy for the student and the professor to deal with it. Finally, if each service is a separate application alone, then the project will fail because it is logical that whoever will download a complete application for one service, all teachers and students have become in the technology generation and the era of speed and shortcut.

c. Analyst comments:

After this interview, I concluded that it is necessary to create an application that provides all these services, because there are many problems, and they must be solved for the benefit of the student and the university employees.

3. Interview with: Security employee**(Rawaa)****a. Evaluation of a User Request:**

Name: Azza Almuwallad job: Security employee phone number:0560601298

Interview date: 28/12/2022

b. Description of the problem:**1- Do you have access to the future application? Would you prefer to be able to access the application and benefit from its services?**

- No, we don't have access to the application as security staff at the university. It will certainly be a useful opportunity and I hope to take advantage of all his services.

2- In your opinion, if we add to the program the parking reservation service for cars by hours, will you benefit from it?

- Yes sure, it is a good idea to reduce the congestion that causes delays every day.

3- Will the location display service help you for university buildings and classroom locations? So that you can move around easily?

- Yes, as a security employee, she will help me in many things, including: before the end of work, I can move around easily and tell the students to go to the external gates. It will be very useful for new employees and students.

4- While monitoring student violations, would you prefer the monitoring to be electronically in the application or on paper as it is now?

- It is a wonderful and practical idea so that we can easily monitor violations for students and that violation is not repeat for the same student. I hope it will be available as soon as possible.

c. Analyst comments:

After conducting the interview, I saw that the security employees face many difficulties in performing their job, and through the interview it became clear that all the services that we will add to the application will help them in a practical and flexible manner.

4. Interview with: Volunteer leader**(Ruba)****a. Evaluation of a User Request:**

Name: Renad Alharbi Job: Volunteer team leader. Number: 0504745027

Interview date: 29/12/2022

b. Description of the problem:**1- What is the problem that you face personally when communicating with teacher?**

- the academic advisor often faces on accumulation of e-mail message, and this leads to a delayed response or not seeing it at all, and there is a conflict between their office hours and pray times.

2- Do you think that adding a "GPA required for majors' calculator" in my future+ application will make a difference?

- Of course, the GPA and methods of calculating varies from major to another.

3- Do you have any additions that you would like to add in my future+ application?

- setting up a feature that allows students to see the progressed from the previous level and seeing their violations and adding a feature that shows the student's absence and lecture left until denied the exam.

c. Analyst comments:

After discussion with the leader of the volunteer team, it was explained that application can add many feature that make it a better application, and many futures that benefit students, professors, and administrators can be added.

5. Interview with: Student**(Shatha)****a. Evaluation of a User Request:**

Name: Futoun Al-Nubi Job: Level 6 student Mobile number: 05558699922

Interview date: 29/12/2022

b. Description of the problem:**1- What is the special thing about the future application?**

- One of its advantages is that it is easily used to display the student card and study schedule.

2- There are some updates that you will add, what new feature do you wish to be there?

-View the student's violations.

3- What are the disadvantages of the application currently?

- There are no downsides in my opinion.

4- What do you think of the features that we will add, are they useful, yes or no, and why?

- Yes, the features are very useful and will facilitate a lot of things for the students. Since I always bring my car, the feature of reserving a parking lot will help me very much.

c. Analyst comments:

I noticed that my future is really effective and useful, but it lacks some advantages in order to help all members of the university without exception, not just the students, and this is what we aspire to in our project.

Lab 3

1.The purpose of the project

a. The User Business or Background of the Project Effort

- Content:

An application that benefits university employees and students, providing them with some services to facilitate operations at the university, such as: displaying student violations, reserving parking spaces, a map of college buildings and classrooms, and displaying absences and deprivations.

- Motivation:

Developing the application and adding services to a future application.

- Considerations:

There is no clear problem but is complementary application to provide services and facilitate the operations of students and university employees in a faster and professional manner.

b. Goals of the Project

The main objective of the project is that most students and university employees suffer from many problems, including not knowing the number of absences and deprivations, the number of violations and warnings, the difficulty of moving between the university buildings and car parking congestion, so we presented a project that facilitates these operations.

2.Preliminary report

1- The problem:

- 1\ Application incompleteness.
- 2\ Car parking congestion.
- 3\ Difficulty moving between university buildings and not knowing the location of classrooms.
- 4\ Not knowing the number of absences and deprivations for students.
- 5\ The student does not know the number of violations and warnings issued.

2- Findings:

- 1\ The inability of the security staff to enter the application and benefit from it.
- 2\ Not limiting the front parking lots for students and university employees.

3- Recommendation or proposed solution:

- 1\ We provide an entry service for the security staff and to benefit from its services and to make it easier for them.
- 2\ Providing a parking reservation service for students and university employees by hours, in addition to providing the option to cancel when the parking is not used.
- 3\ The possibility of monitoring violations electronically to avoid repeating the violation to the student on the same day.
- 4\ Show the number of absences and deprivations for students.

4- Cost & schedule estimates:

PHASE	DESCRIPTION	COST	TIME
Specification	Defining what the system should do.	4000 RS	2 MONTHS
Development	Defining the organization of the system and implementation the system.	15,000 RS	6 MONTHS
Validation	Checking that it does what the customer wants.	3000 RS	1 MONTH
Evaluation	Changing the system in response to changing customer needs.	6000 RS	3 MONTHS
TOTAL	-----	28,000 RS	12 MONTHS

Lab4

1.The feasibility study

1-Problem Definition:

Developing my future program to allow students to book an appointment with professors during office hours, through the application, students can know about absences and deprivation warnings. In addition to reserving parking spaces for students, professors, and other employees. Through the application, the student will be able to know the number of violations and the penalties required. Also provides a location map of the university buildings.

2- Scope Objectives of “new system”:

Transforming manually traditional services usage methods into electronic and integrated methods.

3- Alternative Solutions:

- Adding a parking counter at the university gates to show the number of parking spaces available to reduce overcrowding.
- Providing a parking reservation system device to allow entry of students and university employees only.
- Providing interactive display screens to provide a map of all university facilities with the ability to see directions.
- Automatically send a text message or e-mail when the allowed absence and violations limit is exceeded.
- Providing these services on an external website and contracting with specialized companies for each service for easy providing these services and benefit from them.

4- Cost and benefits of Alternatives:

- Benefits:

- Save time and effort for employees.
- Easy and speed of verifying the identity of parking users through the parking

reservation system device.

- Easy to locate your current location on campus through interactive displays
- Automatically send messages of warnings and deprivation when exceeding the limit.

- Cost:

PHASE	DESCRIPTION	COST	TIME
Specification	Defining what the system should do.	3000 RS	1 MONTH
Development	Defining the organization of the system and implementation the system.	50,000 RS	3 MONTHS
Validation	Checking that it does what the customer wants.	15,000 RS	2 WEEKS
Evaluation	Changing the system in response to changing customer needs.	10,000 RS	2 MONTHS
TOTAL	-----	78,000 RS	6.5 MONTHS

5- Software impacts:

Converting transactions from primitive methods to electronic methods.

6- Potential Changes in the Organization:

Providing integrated services and facilitating the operations of students and university employees in a faster and professional manner.

7- Recommended Alternative of the course of Action:

Providing these services on an external website and contracting with specialized companies for each service for easy providing these services and benefit from them.

Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Ad
1	specification	8 days	Wed 12/28/22	Fri 1/6/23		Rawaa	
2	development	16 days	Sat 1/7/23	Fri 1/27/23		Ruba & Mayar	
3	validation	7 days	Sat 1/28/23	Mon 2/6/23		Shatha	
4	evaluation	5 days	Tue 2/7/23	Mon 2/13/23		Maram	

Lab5

1-Stockholder definition:

a.The Client:

University of Jeddah is the one that makes the investment, and the service is provided to it specifically.

b.The Customer:

Students and university employees are the ones who will use and benefit from all the services provided by the application (My Future+).

c.Other Stakeholder:

The Ministry of Education is affected by the establishment of the application in calculating the numbers of students and employees and other.

2-The scope of the work:

a. The Current Situation:

Content:

The current (My Future) application provides several services, but it is not integrated, as violations are taken by security employees manually and not electronically, which leads to difficulty in counting them. Also, parking lots are used randomly. In addition, students and employees are not able to see an integrated map of the university buildings and classes.

Motivation:

Providing these services in a more advanced way so that they become electronic, which facilitates the use of the services provided.

b. The Context of the Work

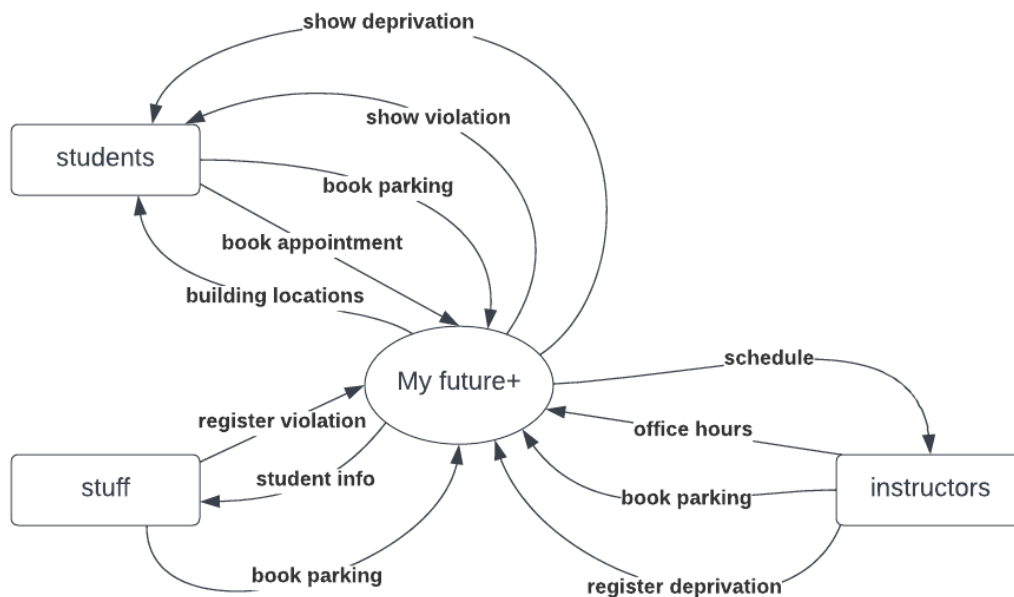
Content:

The (My Future +) application provides several integrated services, as violations are recorded by security employee electronically, as well as registration of deprivation by instructors, which makes it easier to show them to students faster. Also, parking spaces are reserved by hours to avoid crowding, in addition to showing an integrated map of the university buildings and classrooms for students and university employees.

Motivation:

After developing My future + application, we noticed that the program is of good efficiency, but we can divide it into many programs, each of which is concerned with one of the parties in the university namely students, stuffs, and instructors, and all of them are linked in a unified database to facilitate access to the required information.

3-The Context Diagram:



4-Analysis of Diagram:

Event name	Input and output	summary
1. Book parking	Book parking (in)	Students, stuff, and instructors can book a parking
2. Book appointment	Book appointment (in)	Students can book an appointment to meet with their instructors in office hours
3. Show deprivation	Show deprivation (out)	Show absences and deprivations for the students
4. Show violation	Show violation (out)	Show the number of violations for the students
5. Building locations	Building locations (out)	Show building locations to facilitate access
6. Register violation	Register violation (in)	The stuff register students' violations
7. Student info	Student info (out)	Show students information to register the violations
8. Office hours	Office hours (in)	The instructors register their office hours
9. Schedule	Schedule (out)	Show instructor schedule
10. Register deprivation	Register deprivation (in)	Instructors registers students absences and deprivation

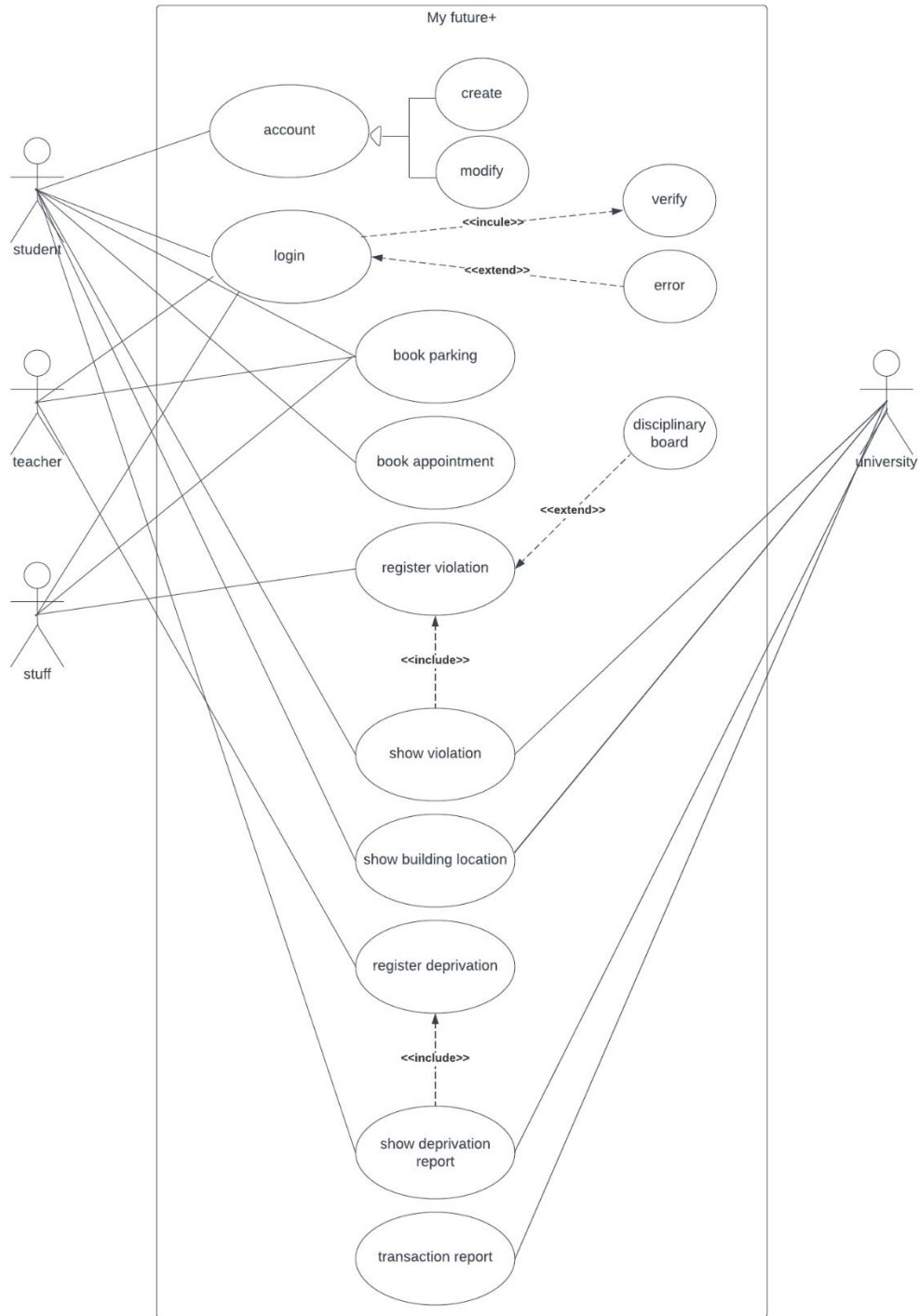
Lab6

1- Functional requirement:

ID	Requirements definition
FR1	Create account
FR1.1	The system shall enable a user to create an account
FR2	Login
FR2.1	The system should allow users to login into the account by ID and password
FR3	Modify information
FR3.1	The system should enable to user to modify personal information
FR4	Parking reservation
FR4.1	The system should allow to user to reservation a parking
FR5	Book and view appointments
FR5.1	The system should enable book an appointment with the instructions during office hours, and show all appointment
FR6	Absences and deprivations
FR6.1	The system should enable to show absences and deprivations
FR7	University Maps
FR7.1	The system should enable to show building locations to facilitate access
FR8	Show and record violations
FR8.1	The system should allow the stuff register students' violations, and allow the student to show the number of violations
FR9	Reports transactions
FR9.1	Generate various reports for all transactions in the system

2- Non-Functional requirement:

interfaces	Non-Functional Requirements
User interface	<ul style="list-style-type: none">- The system must be simple interface, easy to use and comfortable- The system must be availability 24 hour- The system must be high performance- The user interface must show the technical support numbers and university emails- The system provides user friendly interface
Software interface	<ul style="list-style-type: none">- The system must communicate with the uj system database to extract the required information- The system must communicate with other software to facilitate faster provision of services to users
Hardware interface	<ul style="list-style-type: none">- The system must be able to access the university server 24 hours a day, seven days a week- The system must have access to the database server for any time- The system must work well with Wi-Fi and Network Coverage
Security interface	<ul style="list-style-type: none">-The system must have two authentications using both of ID number and password-The system forces the user to change the password every 3 months-The user should access to account by one-time password-The system must encryption user data

Lab7**1- Use Case Model**

2- Use Case Description

UC1: Login

Scope: university system.

Level: request for application.

Primary Actor: Students.

Precondition: University affiliation.

Stakeholders and Interests:

-Students.

- University stuff.

Scenario UC1:

1- After the actors have an account.

2- They have ability to login the App and use the services.

UC2: Account

Scope: University system.

Level: Create account.

Primary Actor: University system.

Precondition: University ID.

Stakeholders and Interests:

-University.

-New student at university.

Scenario UC2:

1-The system received all information of students to create account or modify information.

2-The system sent information to the university.

3-The student can use the App.

UC3: Book parking

Scope: University system.

Level: Booking parking.

Primary Actor: University system.

Precondition: Anyone have an account.

Stakeholders and Interests:

-University stuff.

-Teachers.

-Students.

Scenario of UC3:

1- After the users login to the App.

2- The users can see all available car parking, and book.

UC4: Book appointment

Scope: University system.

Level: Book appointment with teacher in his office hours.

Primary Actor: Students and university system.

Precondition: Teacher allows office hours.

Stakeholders and Interests:

-Teachers.

-Students.

-University system.

Scenario of UC4:

1- Teachers showing their office hours.

2- Students can book an appointment with the teacher.

3- Inform the teacher of all existing reservations.

UC5: Register violations.

Scope: University system.

Level: Register violations of students.

Primary Actor: Stuff of university.

Precondition: Have a permission.

Stakeholders and Interests:

-Security stuff.

Scenario of UC5:

1- When any student violates university laws.

2- It is recorded by the security staff and uploaded to the application.

3- It will be counted and shown to the students.

UC6: Show violations.

Scope: University system.

Level: Show violations that security stuff registered.

Primary Actor: Students.

Precondition: Account login.

Stakeholders and Interests:

- Security stuff

- Students

Scenario of UC6:

1- After logging into the application.

2- Students can see all violations issued to them.

UC7: Show building locations.

Scope: University system.

Level: Map of whole university.

Primary Actor: All students, teachers, and other stuff.

Precondition: Account login.

Stakeholders and Interests:

Everyone at the university

Scenario of UC7:

1- After logging into the application.

2- Students and university staff can view the buildings and classrooms.

UC8: Register deprivation.

Scope: University system.

Level: Students and teachers.

Primary Actor: Teachers and students.

Precondition: Registration in the course.

Stakeholders and Interests:

-Teachers

-Students

Scenario of UC8:

1- When the student exceeds the number of absences allowed for each Course.

2- The teacher records the deprivation after being warned and notified of the danger stage.

UC9: Show deprivation.

Scope: University system.

Level: Students.

Primary Actor: Students and university system.

Precondition: Have a deprivation.

Stakeholders and Interests:

-Students

Scenario of UC9:

1-After login into the application.

2- All absences and deprivations will be shown to students.

UC10: Transaction report.

Scope: University system.

Level: Control of the system.

Primary Actor: University system.

Precondition: It has access to the system.

Stakeholders and Interests:

-University stuff

-Teachers

-Students

Scenario of UC10:

1-After login into the application.

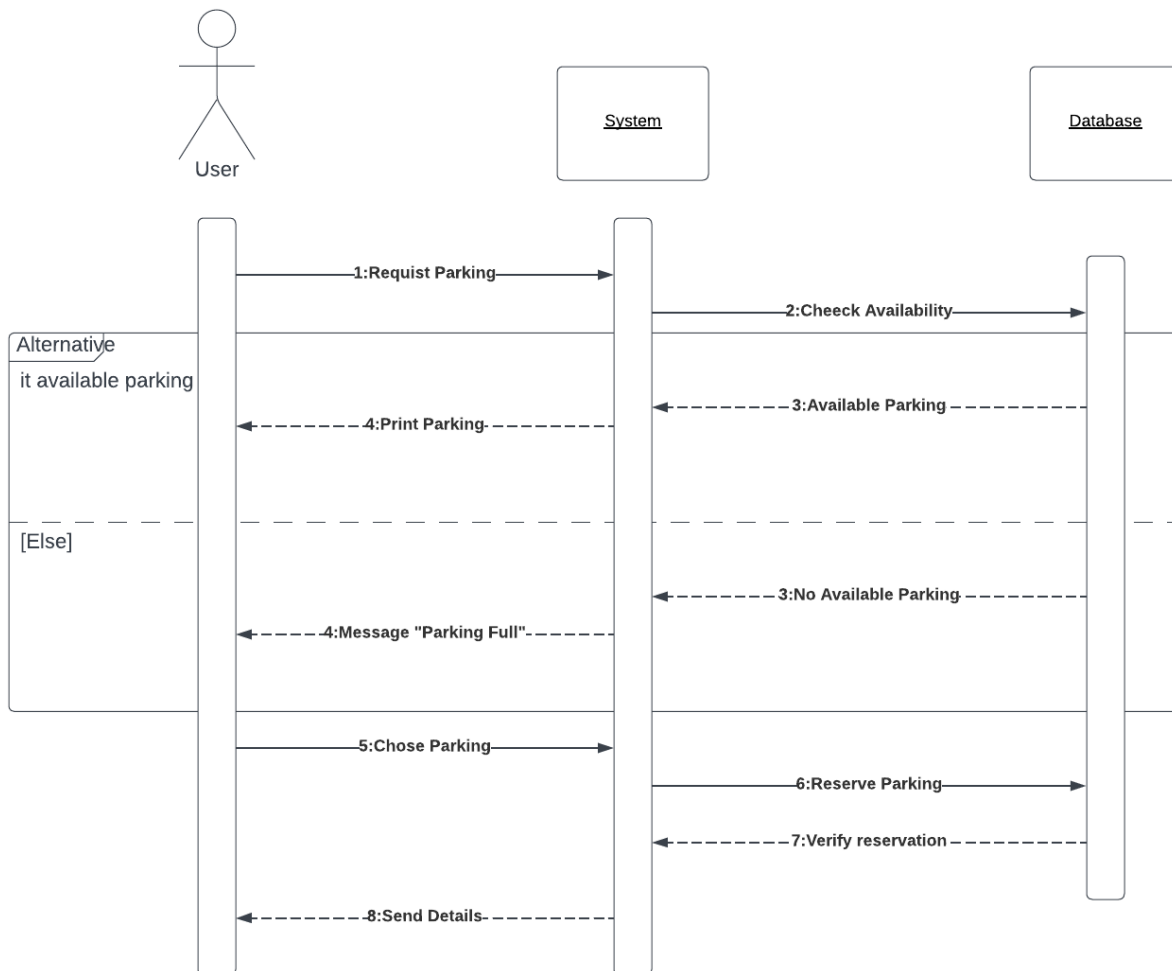
2-Students and university staff can request the report for any transaction that Occurred.

3-University system response and reporting.

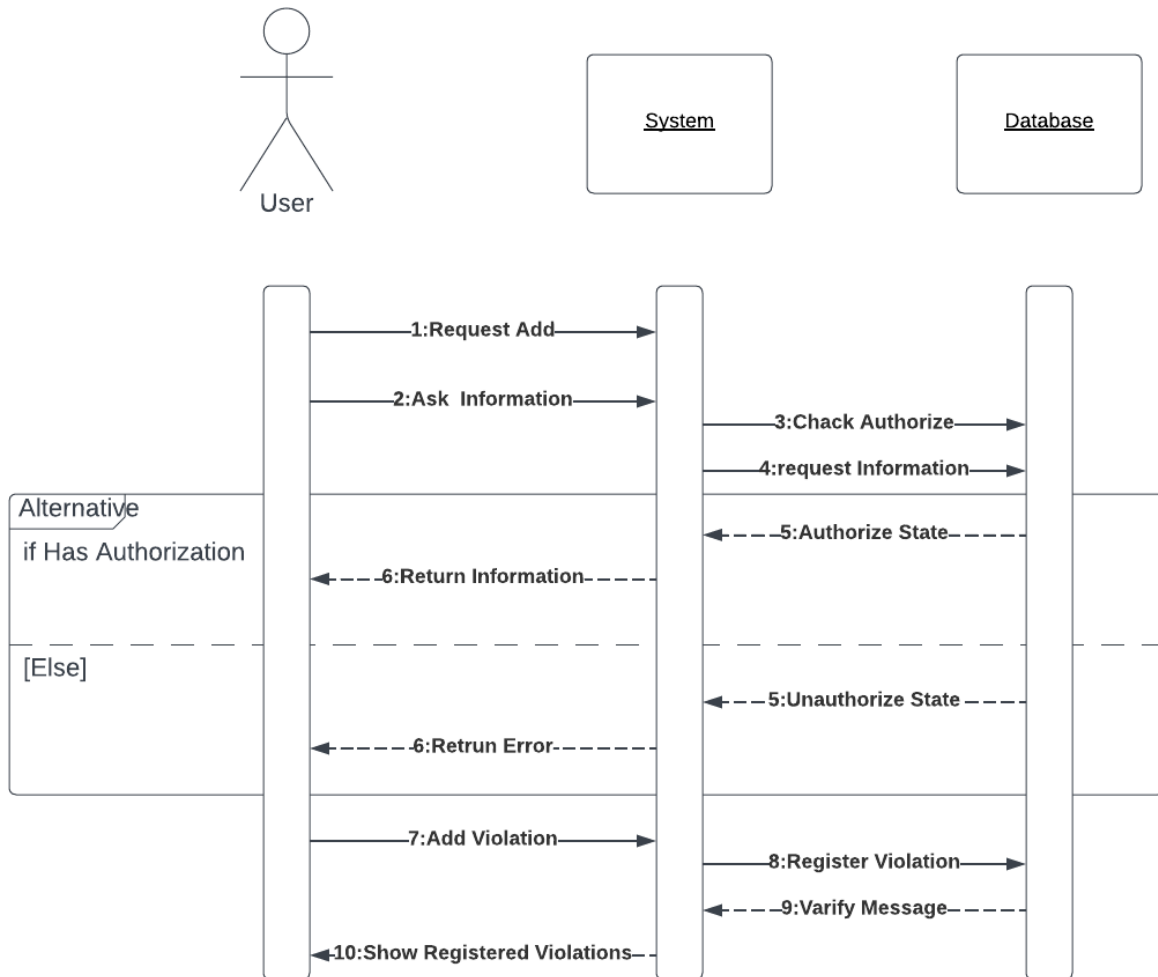
Lab8

1- Sequence Modeling:

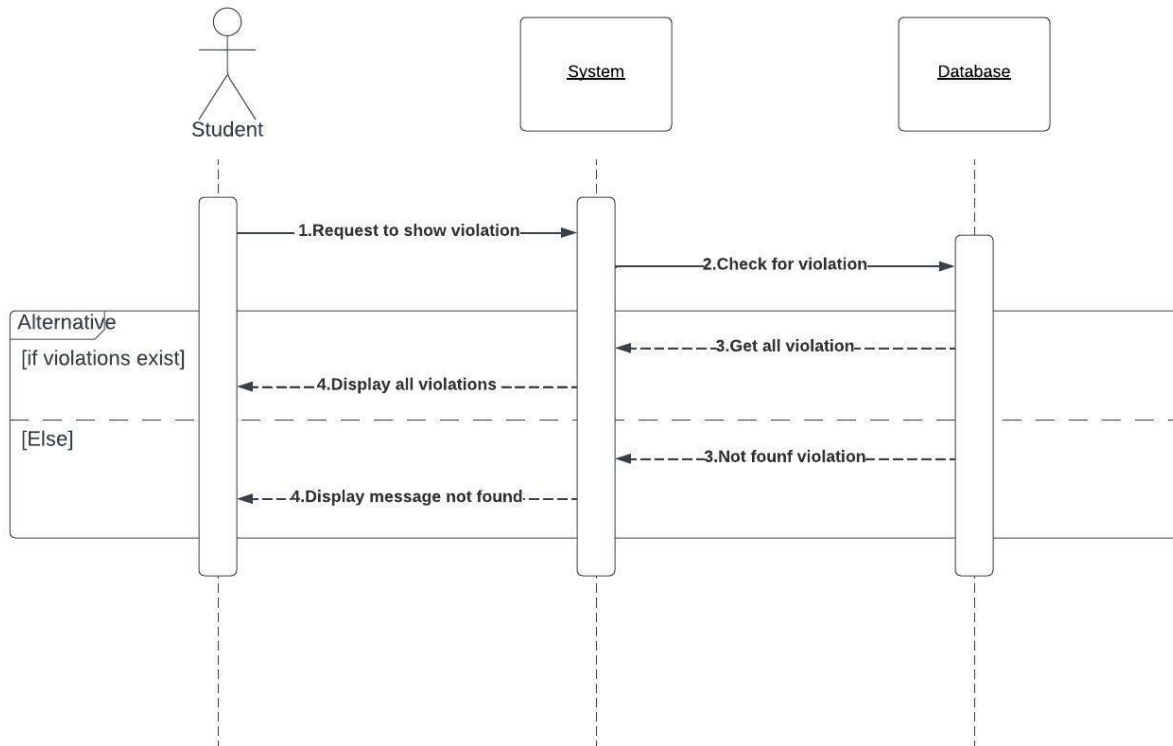
1.Booking Parking

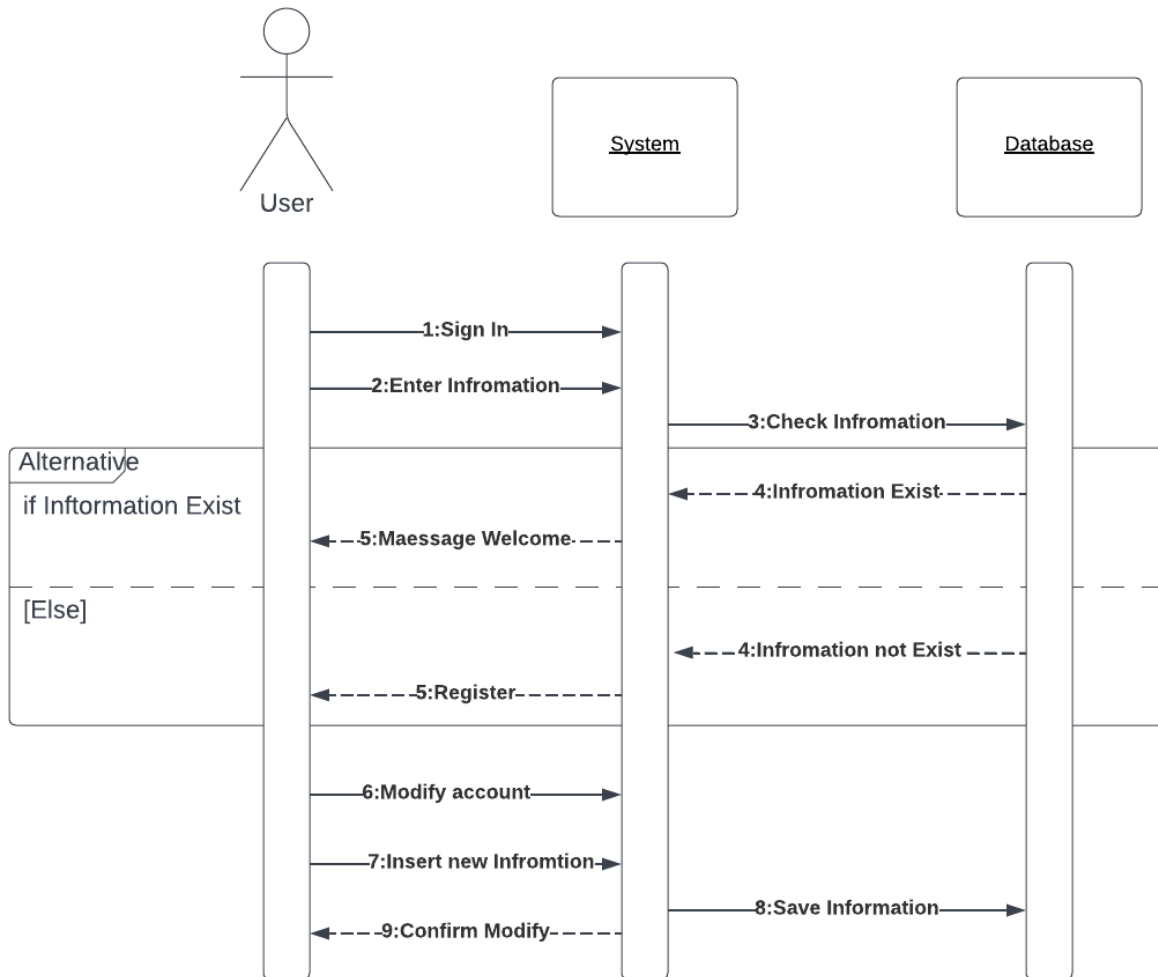


2.Register violations

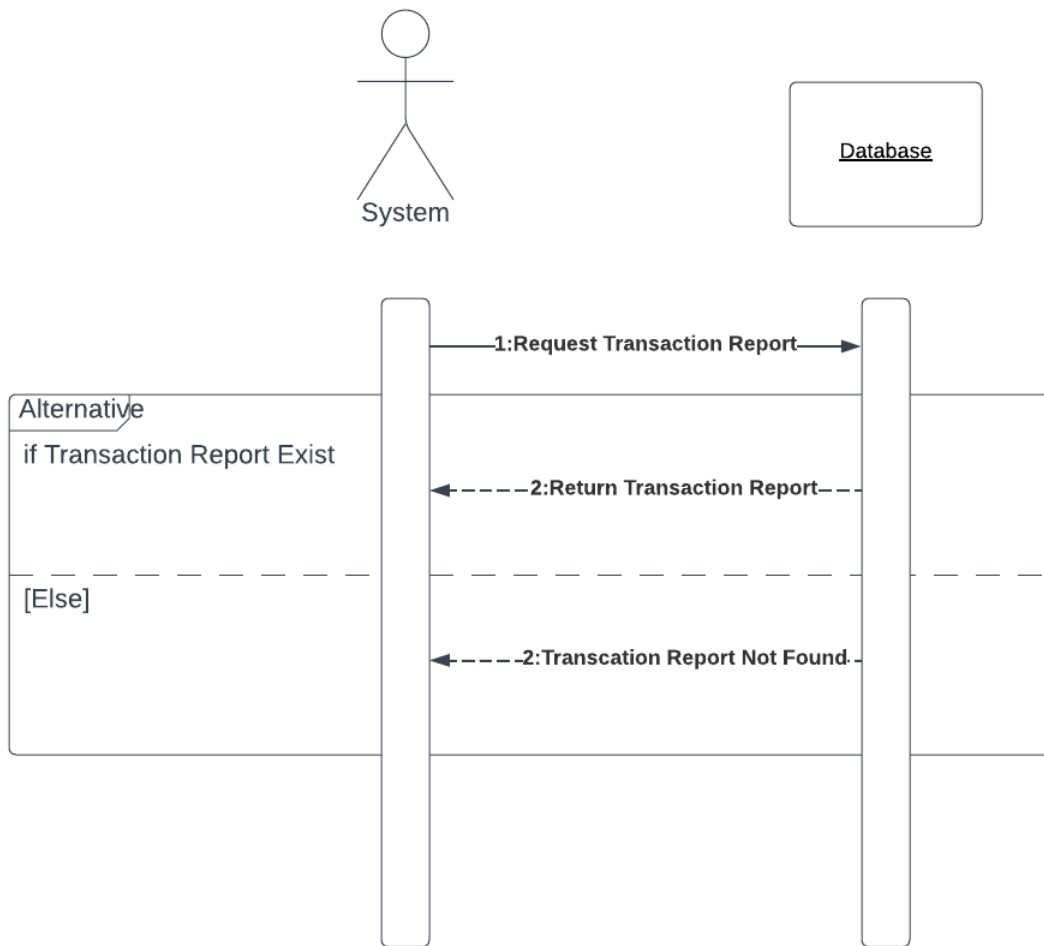


3.Show violations



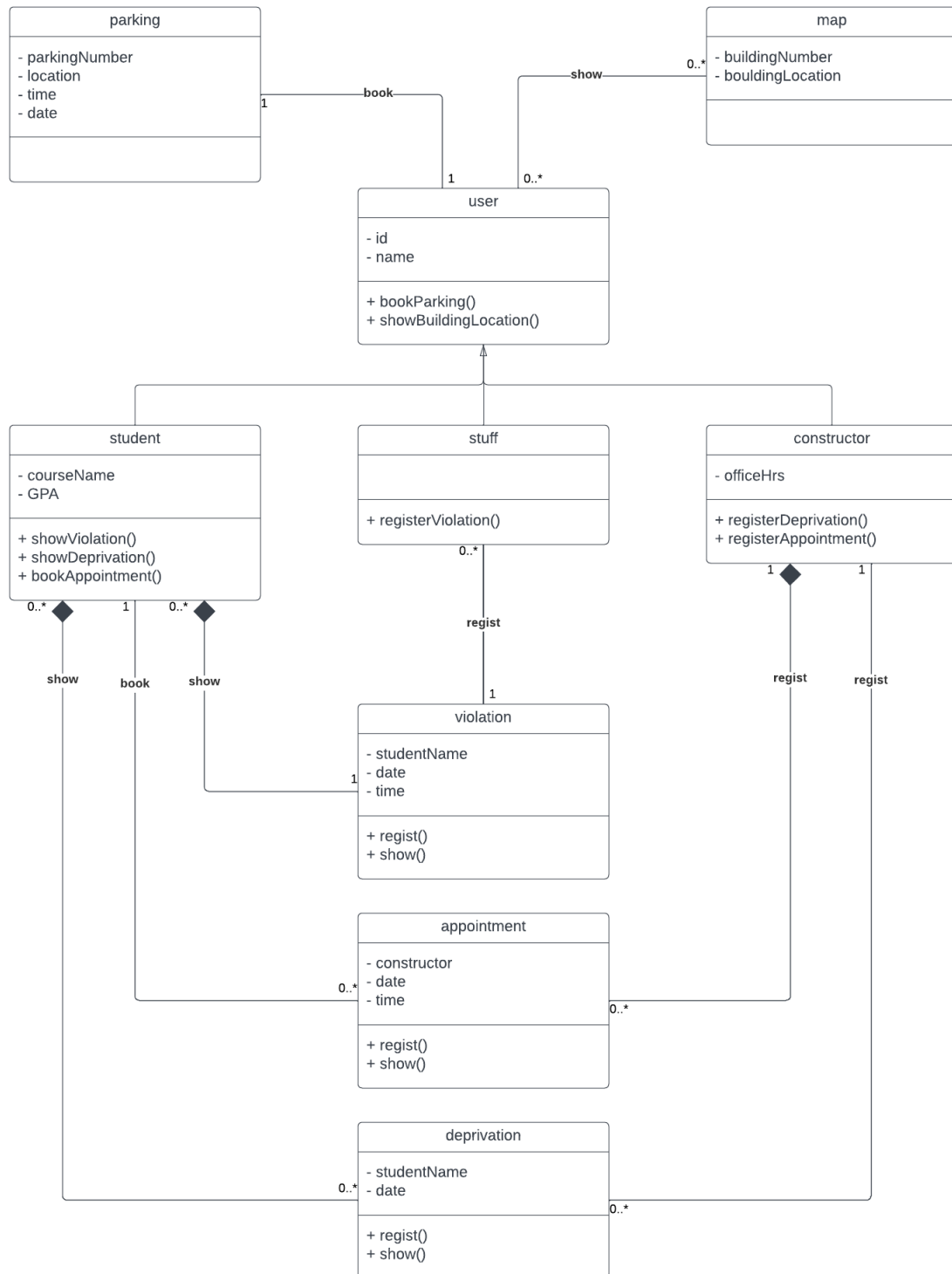
4.Account

5.Transaction Reports



Lab 9

1- Class Diagram:



2-Description of Class

- **User class:** is require ID and Name, and provide booking parking and show building services, user can be student, stuff, constructor.
- **Parking class:** is require parking number, location, time, and date. Also, one parking for one user only, that mean that user can book more than one parking.
- **Map class:** is require name and location building, each user can show more than one building any time he/she want.
- **Student class:** requires course name and GAP and it produce show violation show deprivation book appointment, student can display violation section his own, same with deprivation but the different is that maybe student have no deprivation. But with booking appointment each student can book serval appointment with different constructor.
- **Stuff class:** have only right that is register the violation of student.
- **Constructor class:** require office hours and have the rights to register the deprivation and appointment for students.
- **Violation class:** require student name, date, time, and it's register by stuff member, produce show, and register service.
- **Appointment class:** require constructor, date, time, and provide show and register service.
- **Deprivation class:** require student name and date, also provide show and register service.

Conclusion:

In the end of our project, we to goals facilitating services within the university, and make the student spend the best years in University of Jeddah.

In our application we focus on satisfying our customers, we provide many distinguished services to all employees and students at University of Jeddah, including:

- Booking parking
- Location for buildings
- Booking appointment with the teacher
- Show and register violation
- Show and register deprivation

And more of services that it evolves and increases over the years, and we wish that our application will be the most beautiful gift that we present to everyone who works inside the wall of Jeddah University.

Suggestion and Recommendation:

- Separate each of the student, the professor, and the employee in a separate program in order to reduce pressure and overcrowding on the program and not to cause a defect.
- Developing interfaces well allows the user to know why each icon is used.
- Add an assistant at the beginning of the program to help the user understand the program sections and icons.
- Add notifications that enable the user to know about new messages between student and teacher/ academic advisor and alerts of deprivation.
- Request a golf car for delivery from one building to another.
- Locker reservation in the building and pay online.

Task Table

Name	Task of Lab2	Task of Lab3	Task of Lab4	Task of Lab5	Task of Lab6	Task of Lab7	Task of Lab8	Task of Lab9	Final Project
Rawaa	Interview with Security employee + File Audit and Arrangement	Sharing Ideas and Writing Content + File audit and arrangement	Work on a program Microsoft Project and design a plan to implement the project +	Analysis about all services provided to each beneficiary +	Analysis of the services provided by the application m and choose the appropriate restrictions for the application +	Writing all descriptions and choose an appropriate scenario for each service	Draw Sequence of Show violations + File Audit and Arrangement	File Audit and Arrangement	File Audit and Arrangement + writing in the presentation
Maram	Interview with Instructor	Sharing Ideas and Writing Content	Discussion between the available content and choosing the best +	Discussion about draw context diagram	Inventory of Functionality and Non-Functionality		Draw Sequence of Booking Parking	Draw Class of My Future+ App	Presentation design and writing
Shatha	Interview with Student		Sharing Ideas and Writing Content				Draw Sequence of Transaction Reports	Write description of classes	Write Conclusion + writing in the presentation
Ruba	Interview with Volunteer leader		Sharing Ideas and Writing Content				Draw Sequence of Register violations	Sharing Ideas and Writing Content	Write Suggestion and Recommendation + writing in the presentation
Mayar	Interview with Student		Sharing Ideas and Writing Content				Draw Sequence of Account	Sharing Ideas and Writing Content	writing in the presentation