SYSTEM ANALYSIS AND DESIGN REPORT

Class Registration Project

realized by:

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INNOVATION & AMOA

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For our parents

Acknowledgement

Before starting this project report, we would like to express our sincere gratitude to our professor Mr. M. OUBRICH who gave us the opportunity to work on this project, for his generosity in transmitting his knowledge and his knowledge -do in the best possible conditions.

I. ABSTRACT:

System analysis and Design is essentially composed of two main systems: system analysis and system design. When it comes to the first one; system Analysis; It is a process of collecting and interpreting facts, identifying the problems, and decomposition of a system into its components.

System analysis is conducted for the purpose of studying a system or its parts in order to identify its objectives. It is a problem-solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose. In other words,

System Analysis specifies what the system should do. Concerning System Design, it is also a process of planning a new business system or replacing an existing system by defining its components or modules to satisfy the specific requirements. Before planning, you need to understand the old system thoroughly and determine how computers can best be used in order to operate efficiently.

II. PROJECT OVERVIEW:

During This project, we should be able to understand a system and realize all the diagrams necessary for the system. Our system here consists of Class Registration system. The first step we should do is to create a context diagram, the draw as many nested DFDs as we consider necessary starting with a level-O diagram. After, we should draw an Entity-relationship diagram, design a database for the system. Finally, we are going to realize a prototype for the human interface of that system.

1) Class Registration System Context DFD diagram

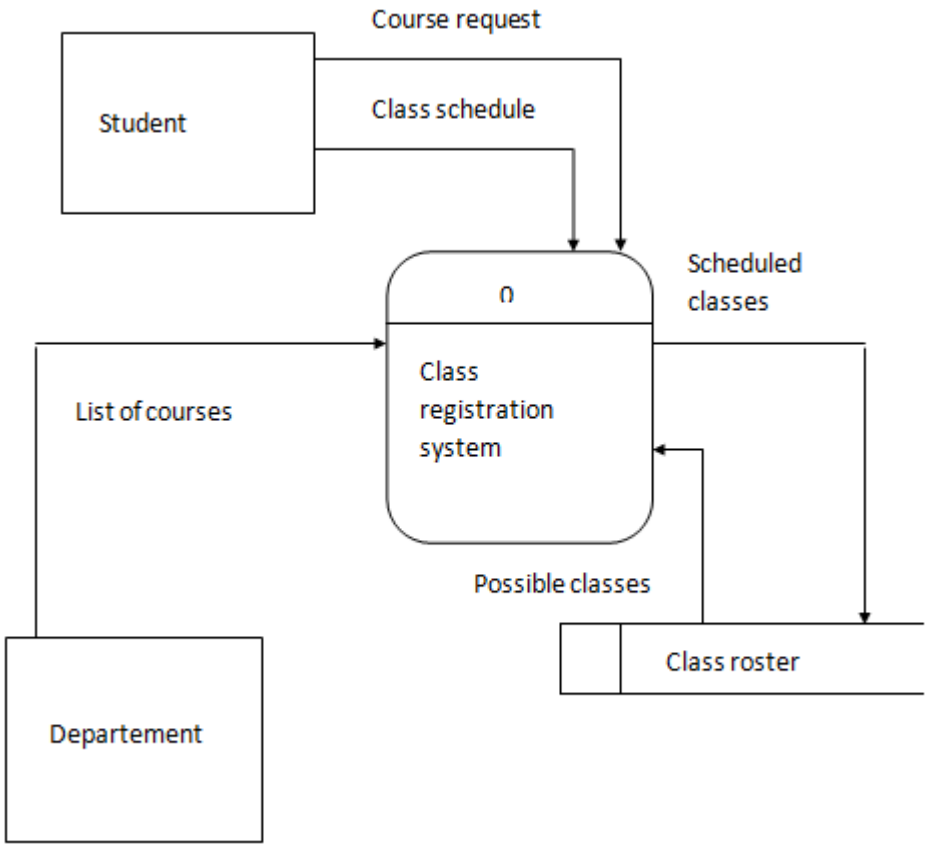

Figure 1:DFD diagram

This very diagram gives a general idea on how the Class Regeistration System function. The data comes from the student and the department, then it will be gathered, stored and be subject to the Class Registration System.

2) Class Registration System level-0 DFD diagram

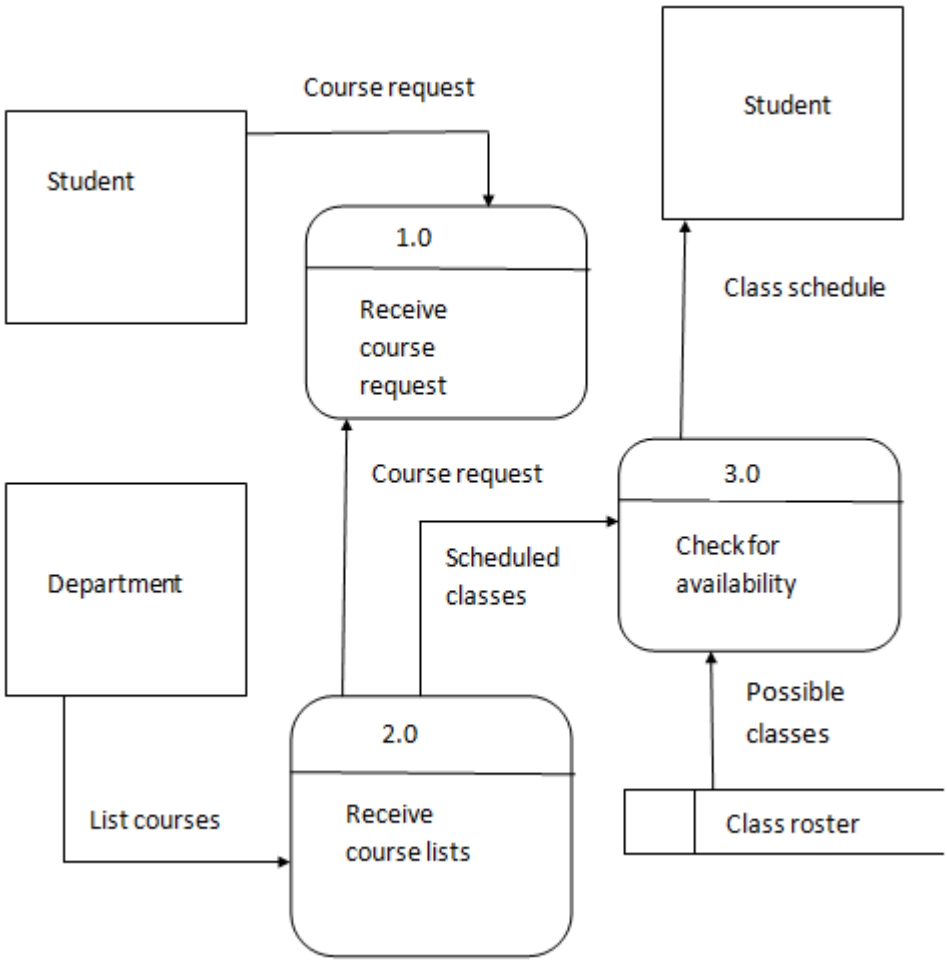

Figure 2:System level-0 DFD diagram

The diagram represents the main processes in this system, which aim basically to Receive the course request, Receive the course lists and Check for availability. The data comes from the student and the department.

3) Class Registration System level-1 DFD diagrams

- level-1 DFD diagram for the 1.0 process: Receive course request

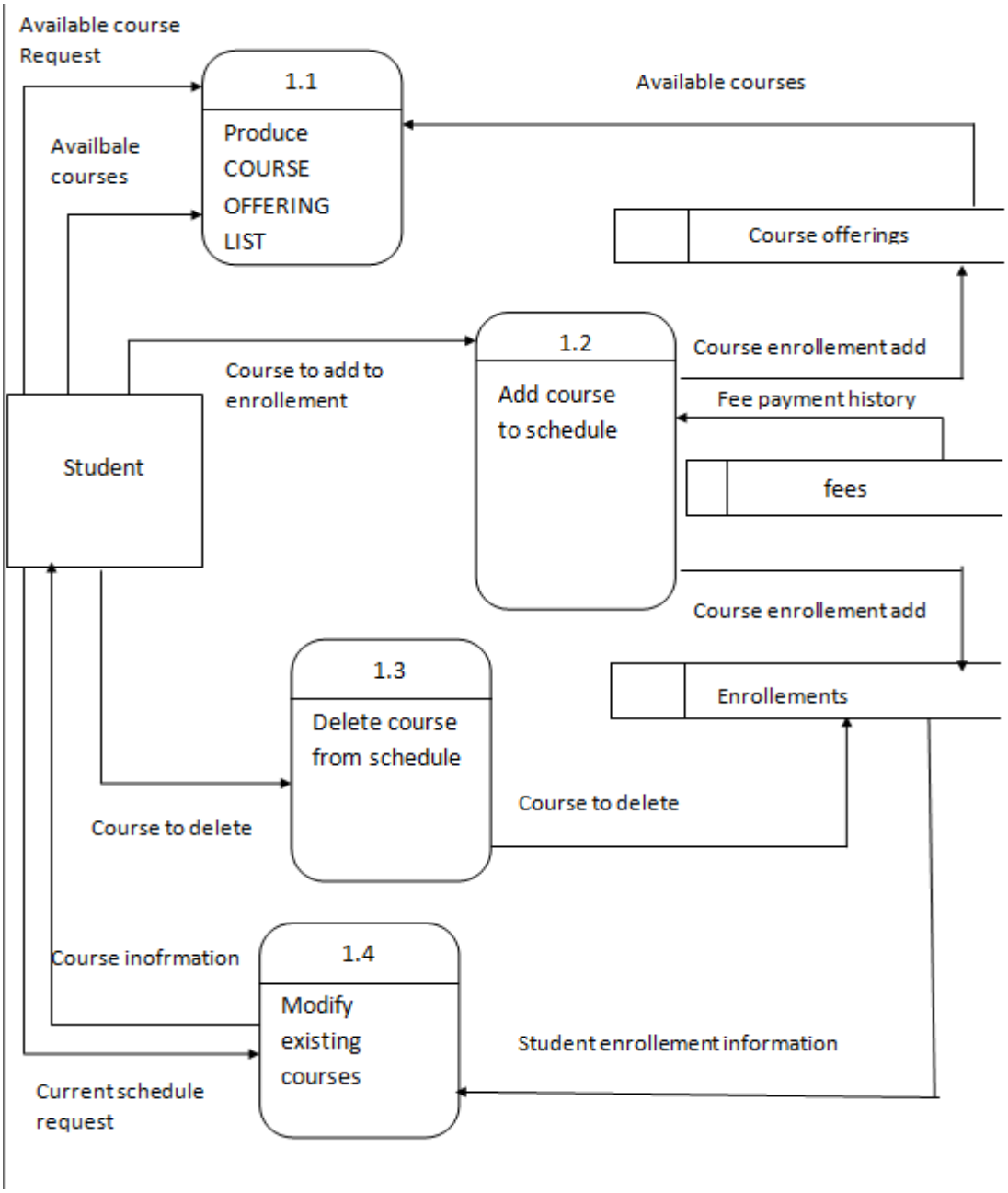

Figure 3:level-1 DFD diagram for the 1.0 process

If the students asks for a course, or asks to delete one, request the current schedule, the request is handled under one of the three processes (as the image shows), then the student receives the result.

- level-1 DFD diagram for the 2.0 process: Receive course lists

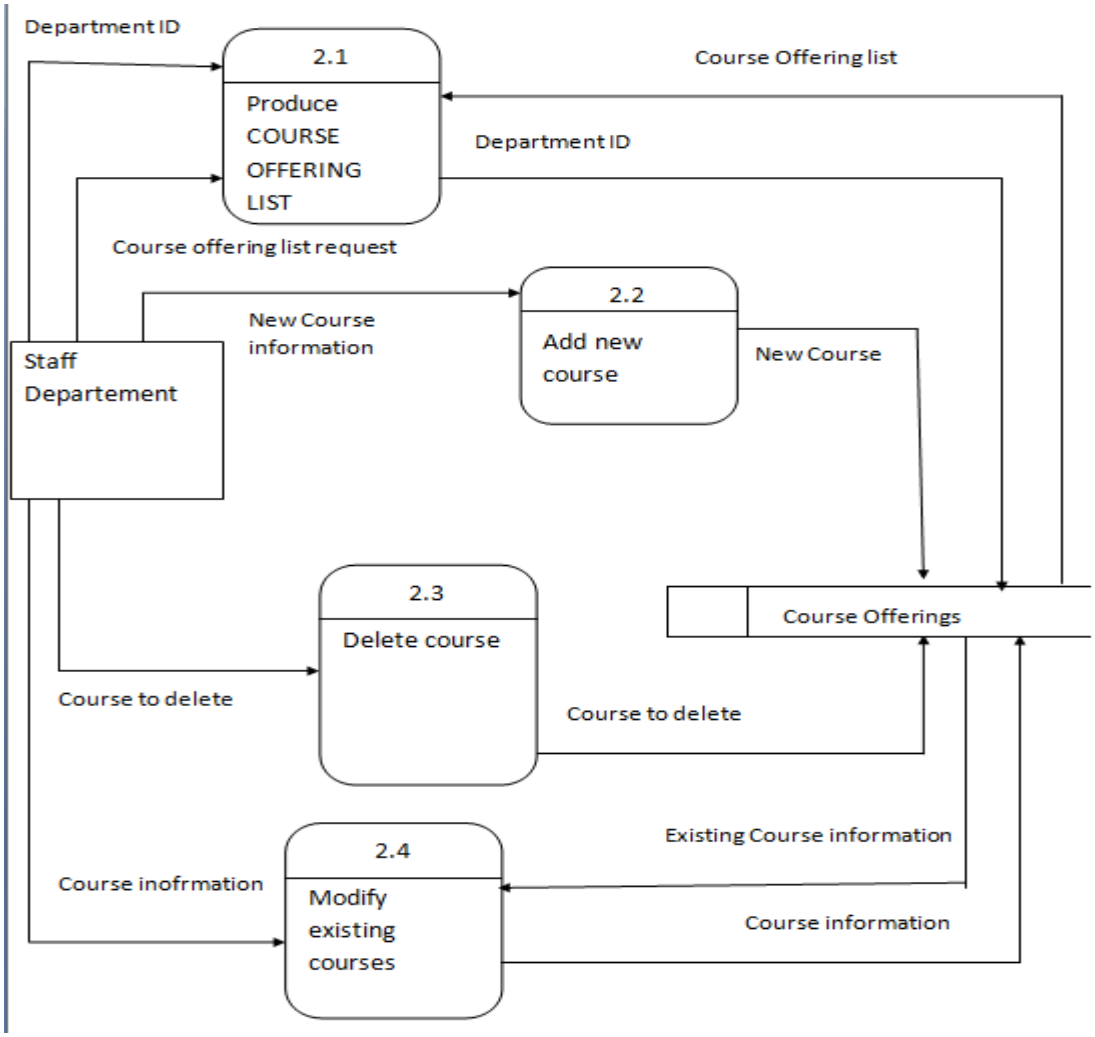

Figure 4: level-1 DFD diagram for the 2.0

This diagram handles the scenario when the staff department asks to receive the courses lists. The request is received and processed , then the class lists are received

- level-1 DFD diagram for the 3.0 process: Check for availability

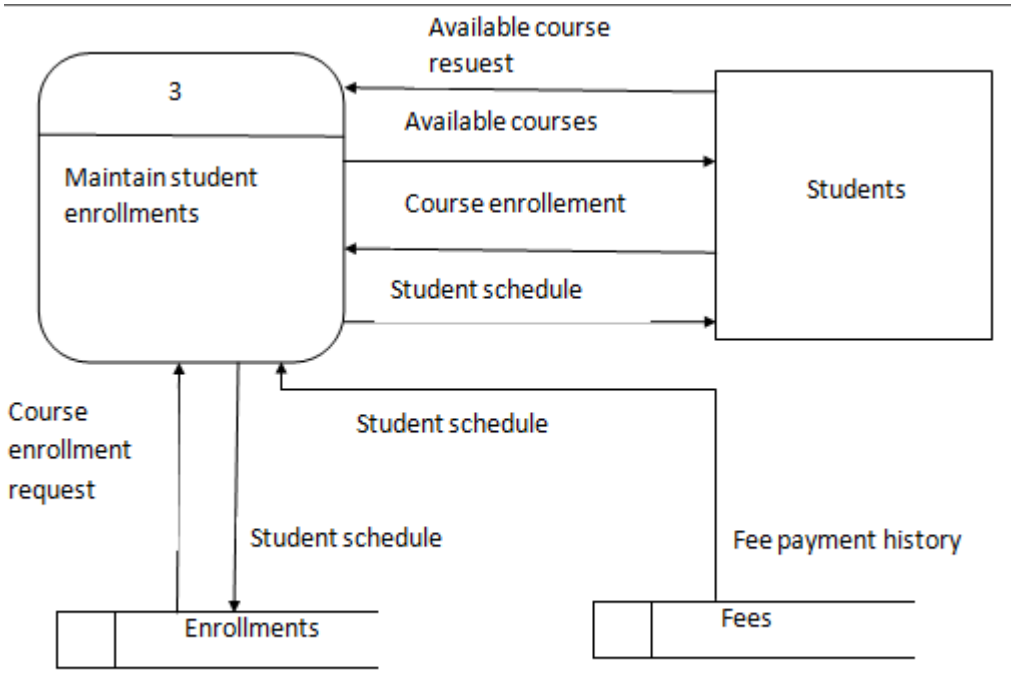

Figure 5: level-1 DFD diagram for the 3.0

This diagram show how the data is being processed when the student asks for the availability of a giving course.

III. Entity-Relationship Diagram:

1) Definition

An entity relationship diagram (ERD), also known as an entity relationship model, is a graphical representation that depicts relationships among people, objects, places, concepts or events within an information technology (IT) system. An ERD uses data modeling techniques that can help define business processes and serve as the foundation for a relational database.

2) practical side

in the figure below we show the relationships between the entities, as you even have between the student entity and the class entity a relation from many to many, that is to say that one or more students can study in one or more class, and vice versa, even if for student and course, in addition there is a many to one relationship between teacher entity and department (a department can include several teachers but one or more teacher can work in one or more departments) same relationship between the teachers entity and class entity, and finally the one-to-one relationship between department entity and department head.

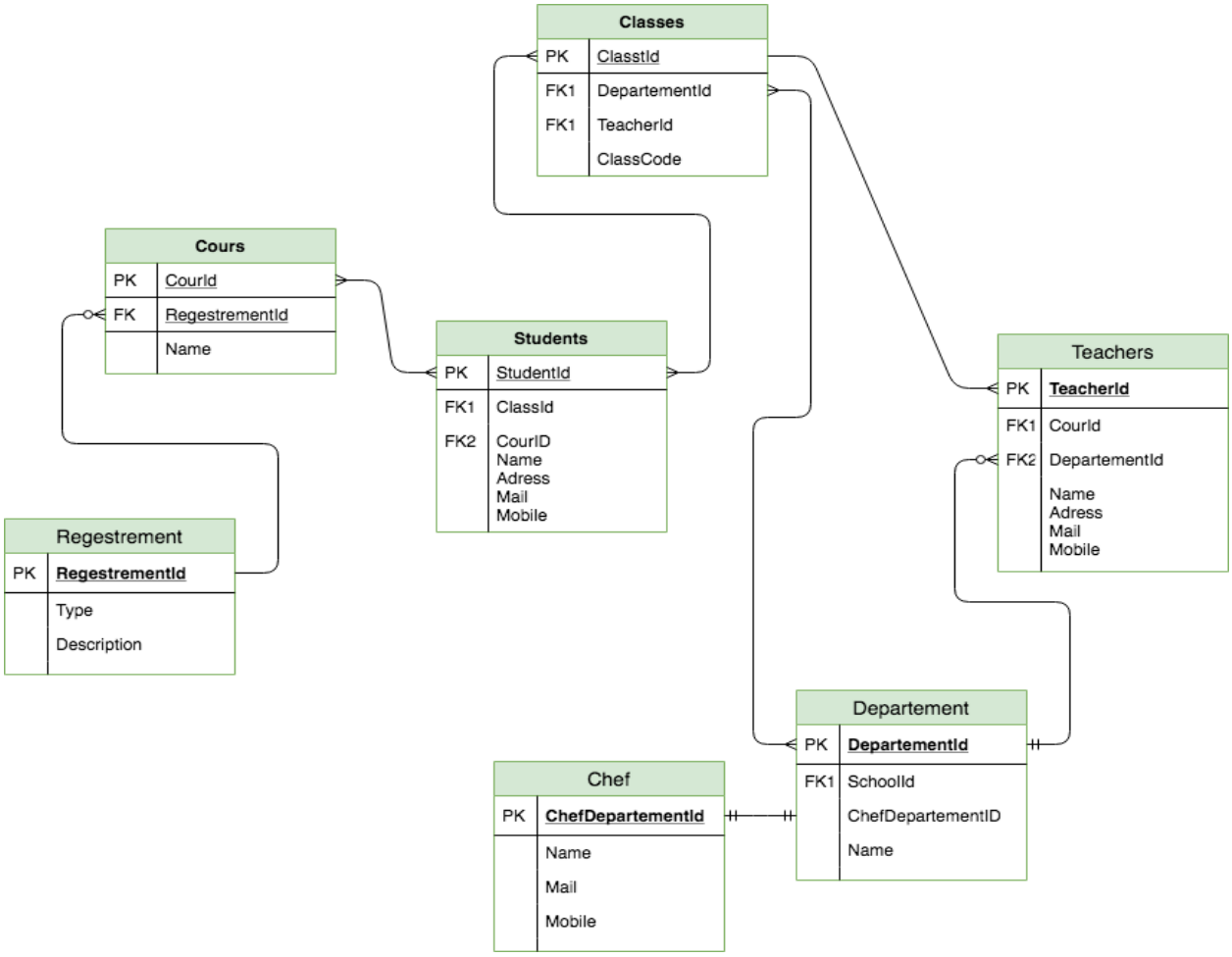

Figure 6:diagram of Entity Relationship

IV. Database Design:

Working in Access, we realize a database that contains height tables: one for students who are going to courses to study, class registration to register their access to the system, table of courses, composed of subjects to be learnt in every semester with the number of hours should be done in every course, the department and professor's name …. The fourth table is for the section, then the course scheduled; composed of the schedule launched every time something is changed (updated schedule). The left tables are for the professor information and department along with the

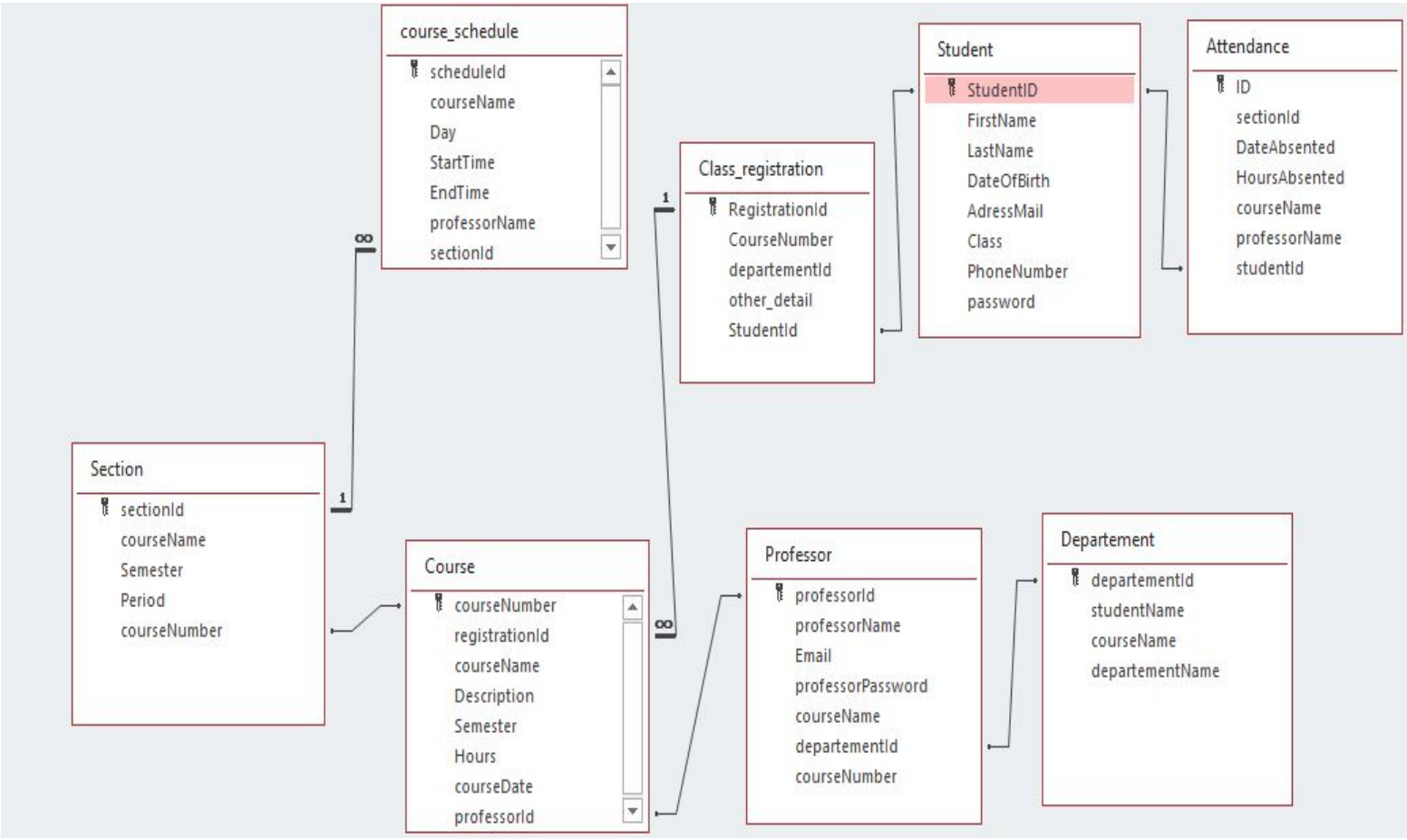

Figure 7:class registration Database

attendance.

V. Human Interface:

Concerning the user interface, we realized a prototype for the class registration system in form of a website or a mobile application.

Working with ForeUI tool, we created many interfaces that should be included in the system.

ForeUI is an easy-to-use UI prototyping tool, designed to create mockup / wireframe / prototypes for any application or website we have in mind. With ForeUI, our prototype can then be exported to wireframe images, PDF documents or HTML5 simulation. We use this tool to create better prototypes to share our idea so as to be clear.

The figure bellow shows the essential page in our website of class registration; this page will contain all the courses, the schedules, the events, holidays and even zoom meeting. It will contain also notifications or even messages received from professors, administration or from colleagues. The courses will be ordered by the semester, period so that every student can access to any course he wants the time he wants. This page may also lead to page containing exam marks and projects to do… .

Not every one could access to this website, but only students of the school and depending on the branch of the student and his degree. For example, an INPT student may access to the website, but depending on his degree and branch; in other words, the student could access only to the courses he studies.

The website could also contain a list of the number of absented hours the student had made in every subject with the level that should not be exceed so as there will be no punishment…

1) Class registration Website:

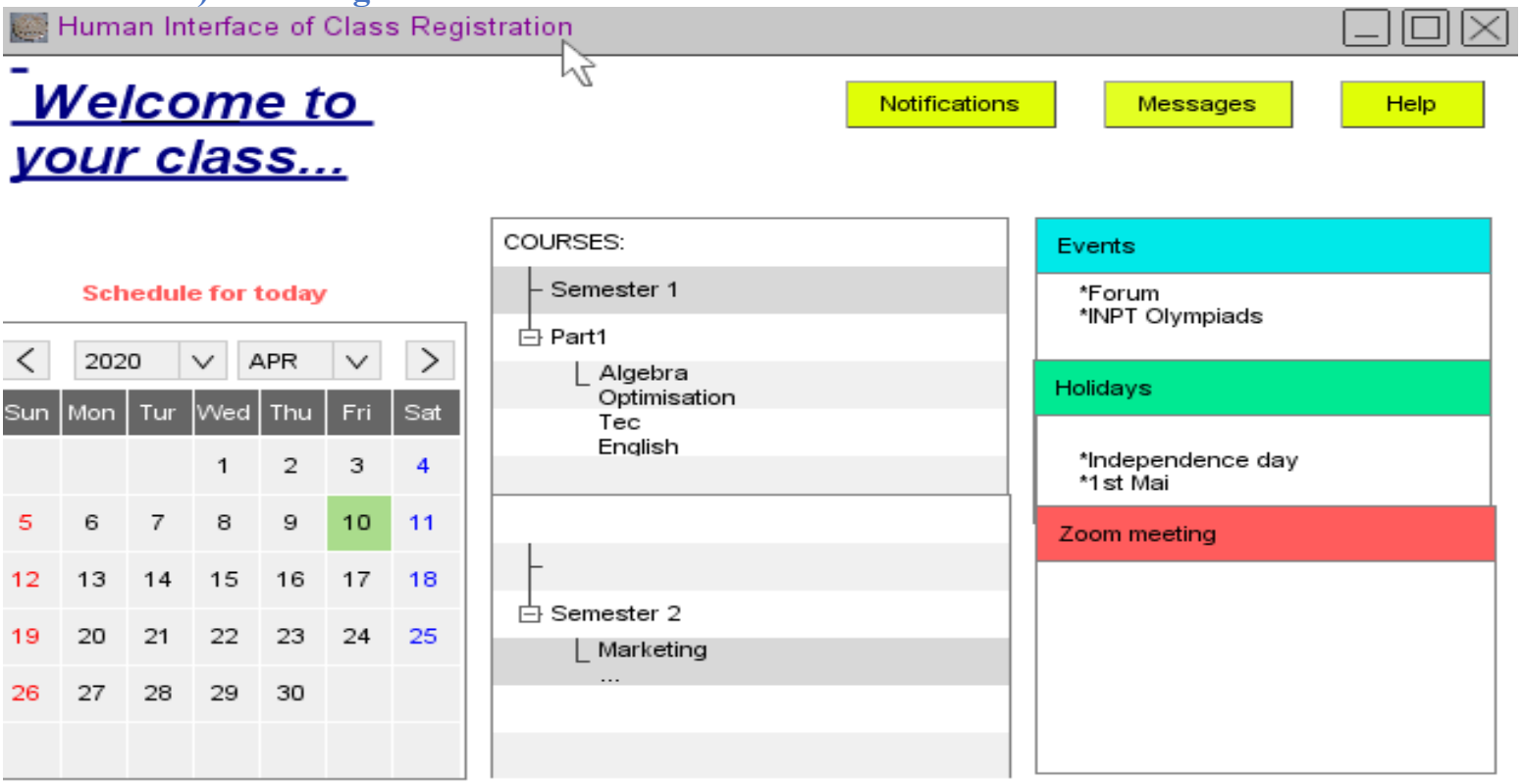

Figure 8:Human interface for class registration

Before having the access to this page, evey student should log in by entering his information: his username, email and his password so that we make sure that the student really belongs to the school. The student has to make sure that he is alredy sing up so his log in work succesfully. The log in form should be as the prototype bellow:

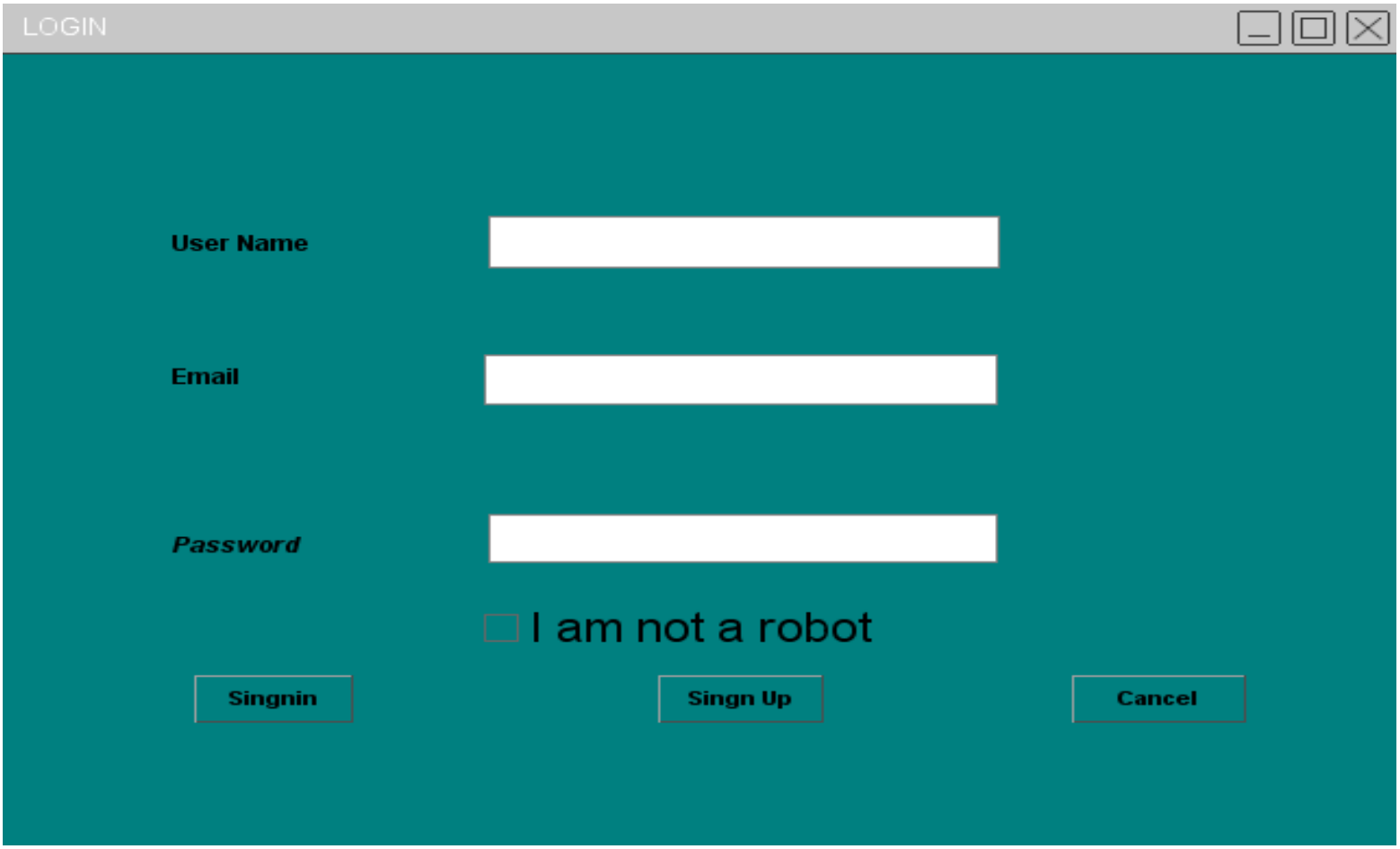

Figure 9:The log in form

Since the student's first access, there will be a sing up form that the student shoulf fill in with the right information: the student's name, phone, email adress .... If the information are correcte, the essential page will appear imediately to the student. Otherwise, he will not have the right to access to the page. The student will access to the right page depending on his branch (the administration already has the detailed lists about the students in the course, it will affect directly the student to the right page to revise his courses or whatever). The sing up form will be like:

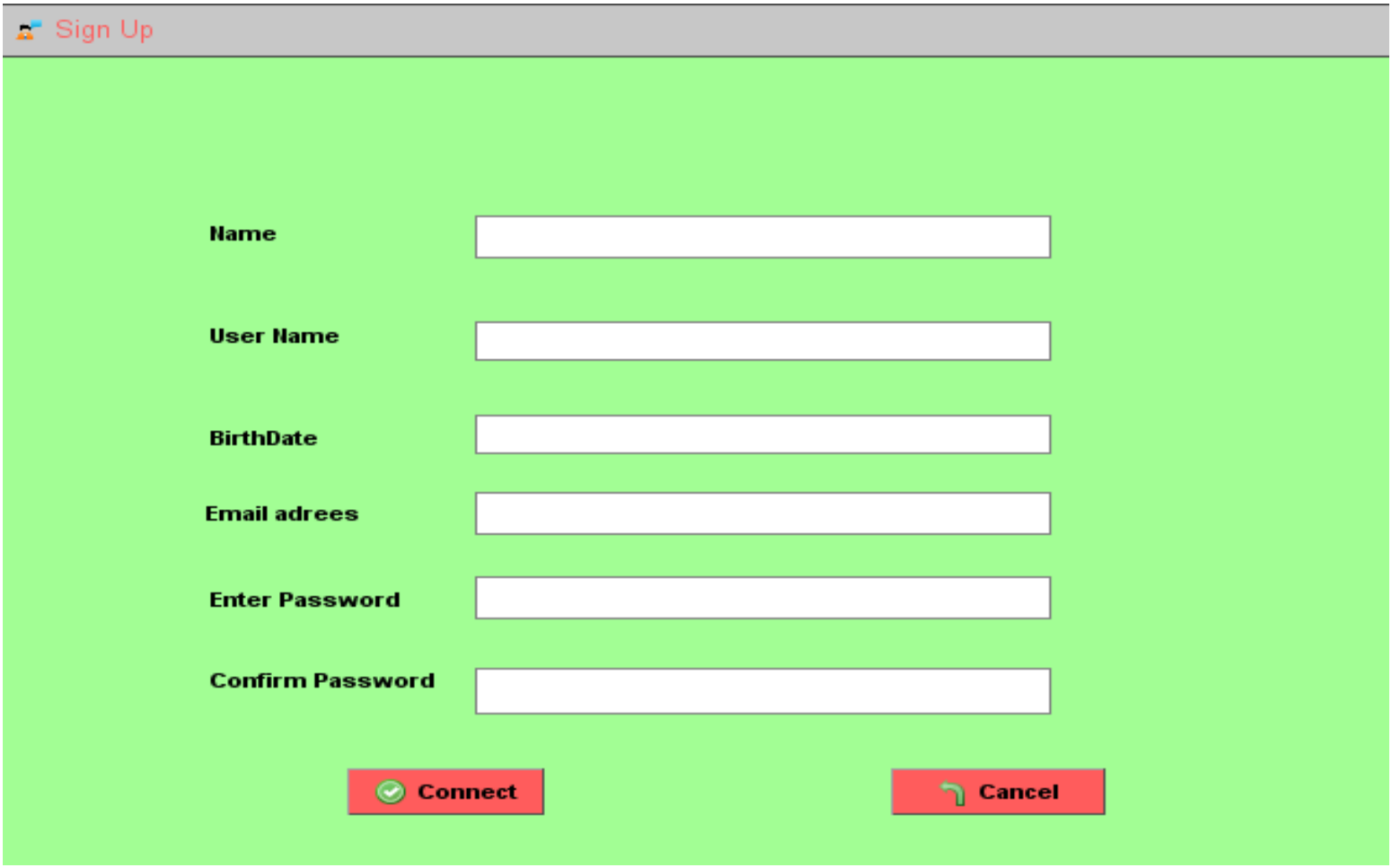

Figure 10:The sing up form

From the beginning, the administration should have the list of all the students, then it should enter the list to the system so there will be no problem during the access trial,

The list should be classified and ordered by students' degrees and their branches,The student's registration form has the next prototype example:

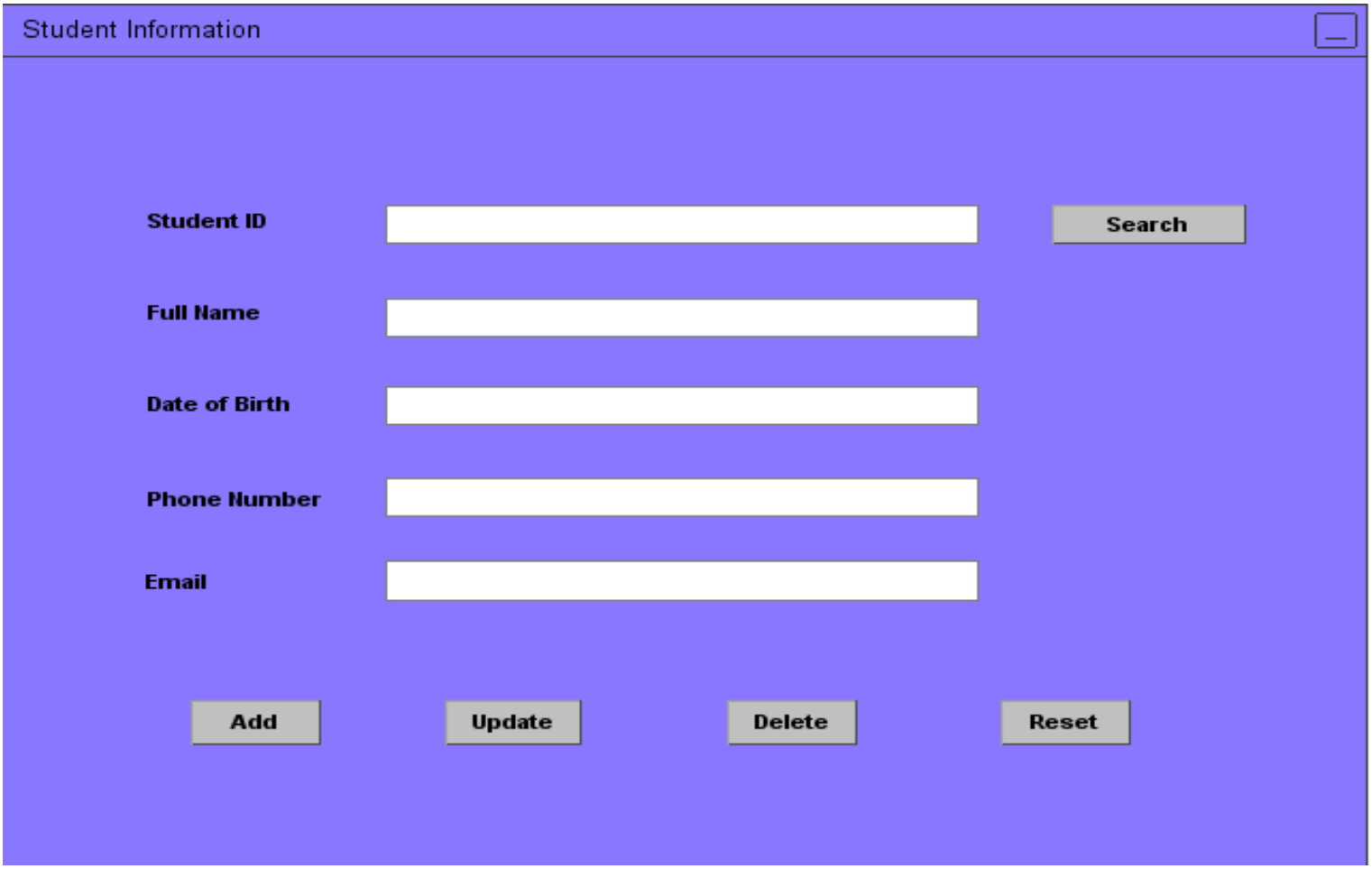

Figure 11:students registration form

Add to that, the administration should also keep in charge the courses registration: the addition of the courses, professors teaching those courses and every detail that depends on registering courses and also the events and holidays.

The system should be their responsibility when it comes to send new notifications, messages and new events. They have the ability to update, delete, add

A new course or event…, and modify the information. The system will be inspired in this prototype:(we realize a form for the course, but it is the same for events, notifications and messages…)

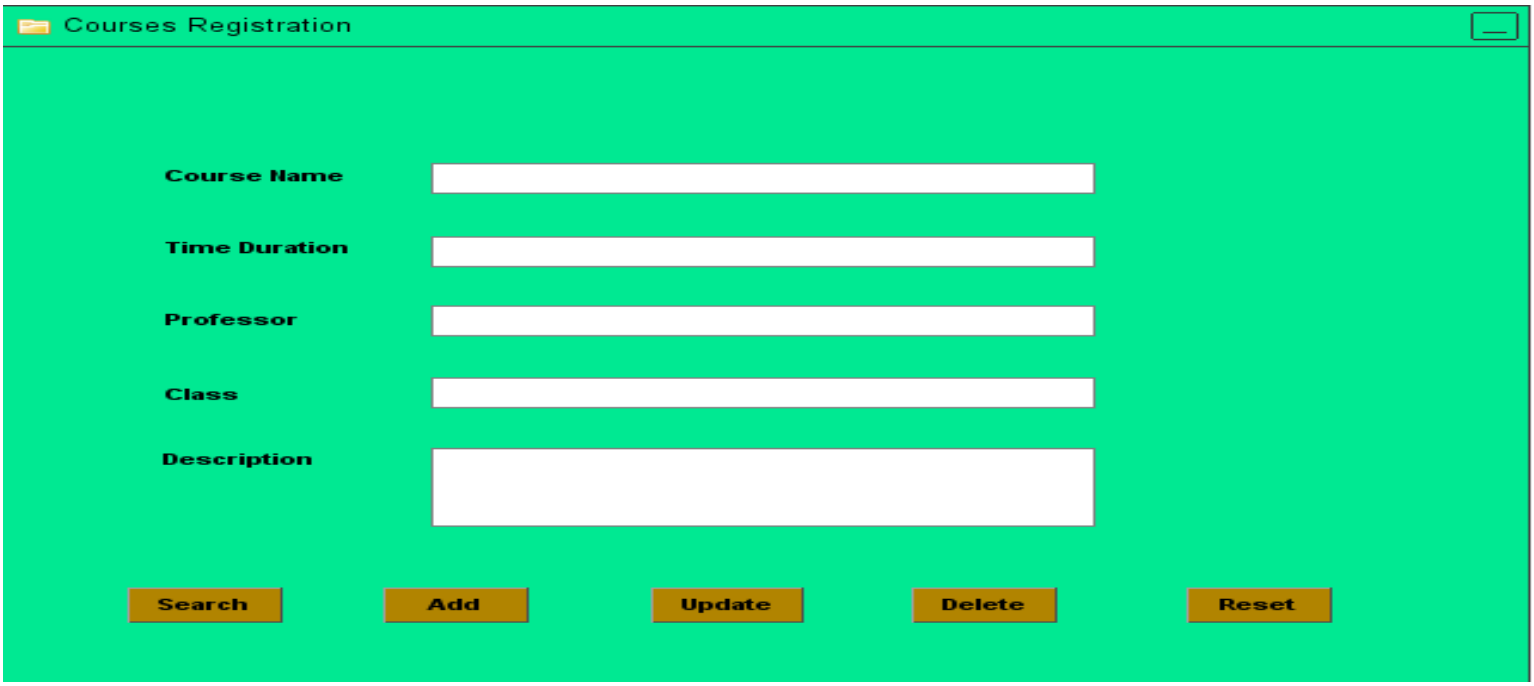

Figure 12:Courses registration form

2) Class registration mobile application:

As an example of class registration, we realize an INPT mobile application prototype. The figure bellow shows the initial page of the mobile application. It contains two buttons: one button of log in, another is made for sign in in the application. Add to that, the page has many details about the application objectives.

Figure 13:fisrt page of mobile application

Afterwards, the log in and sign up forms will be as:

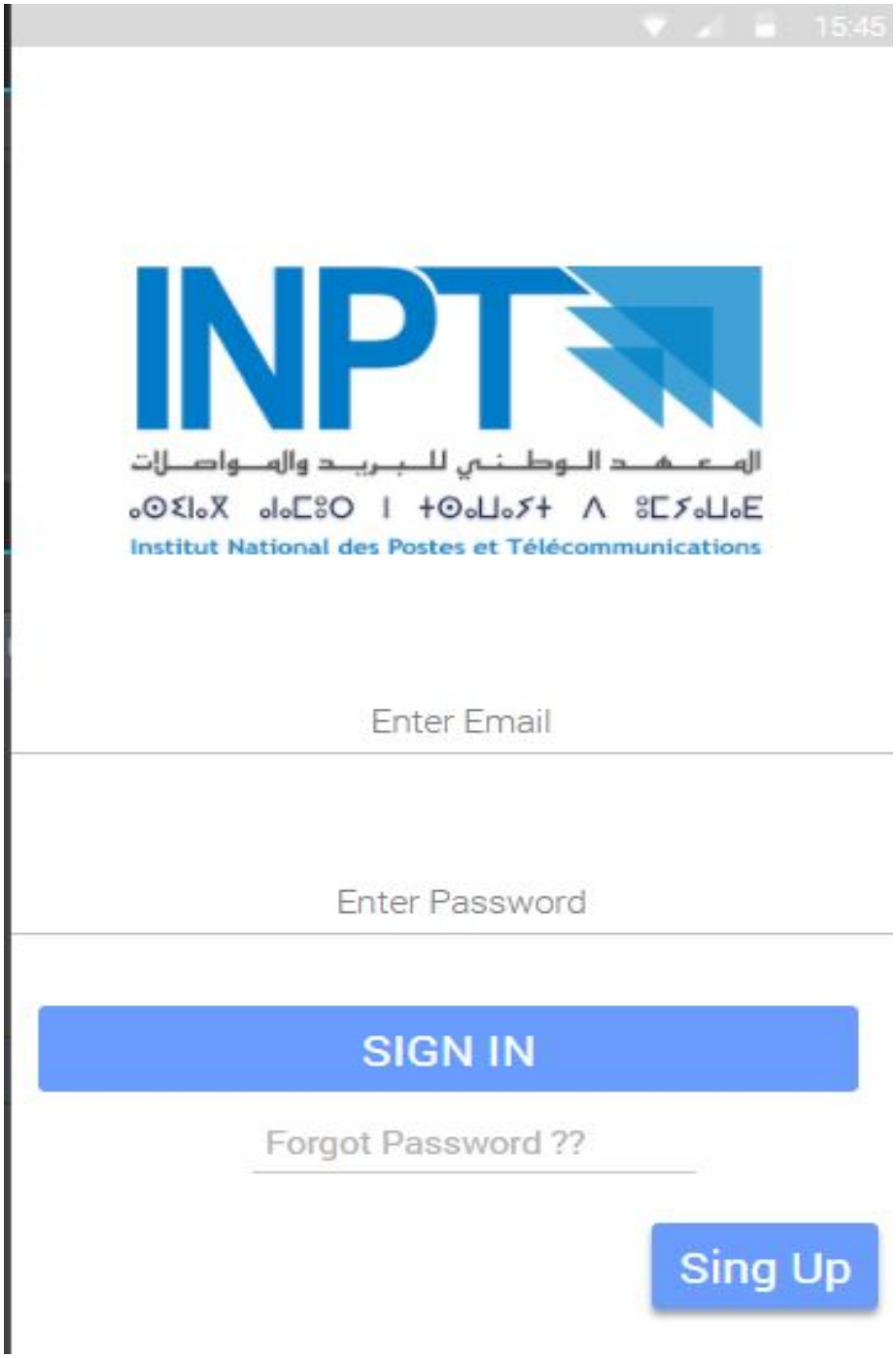

Figure 14:log in form of the mobile app

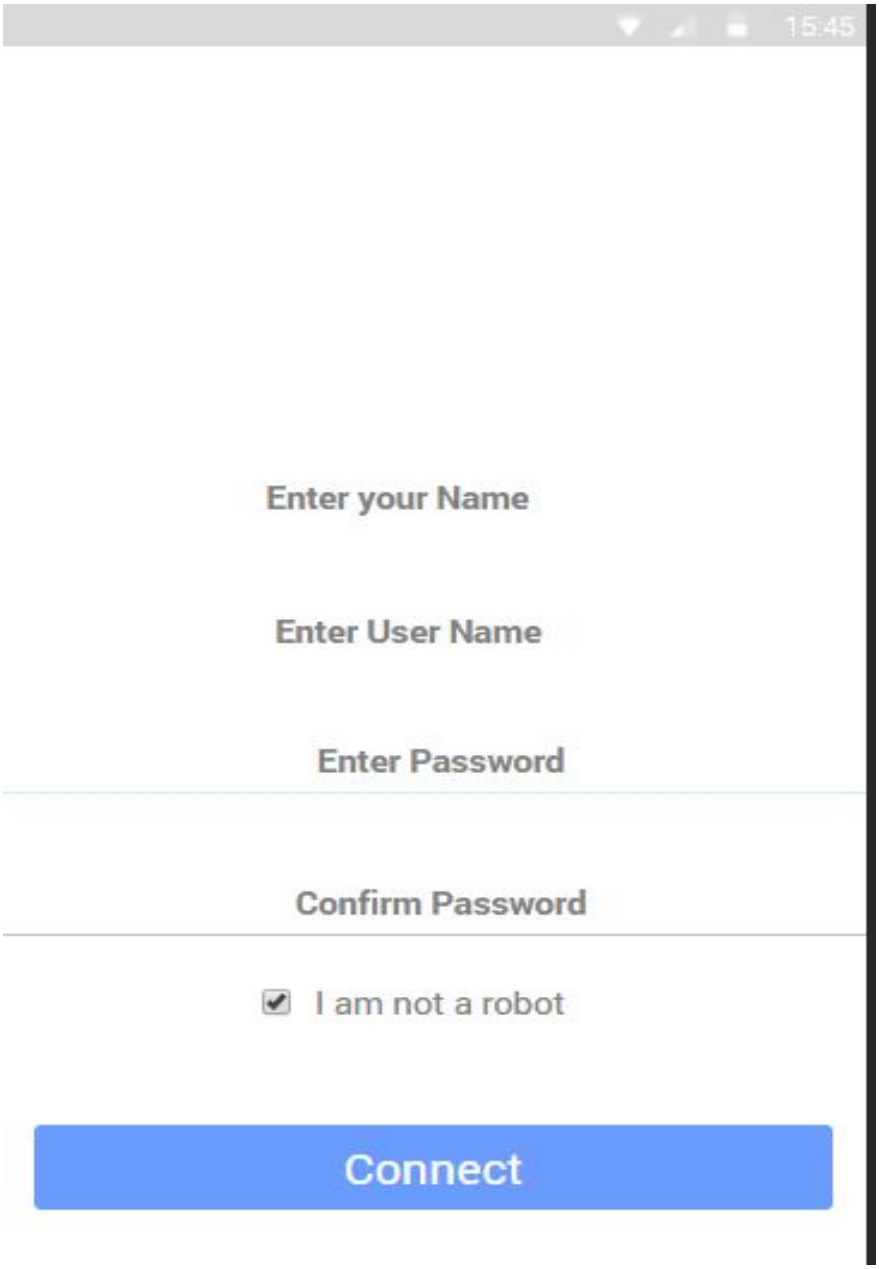

Figure 15:sign up form of the mobile app

The principal page as we already said, it will contain every detail the student needs: courses, events, schedules….

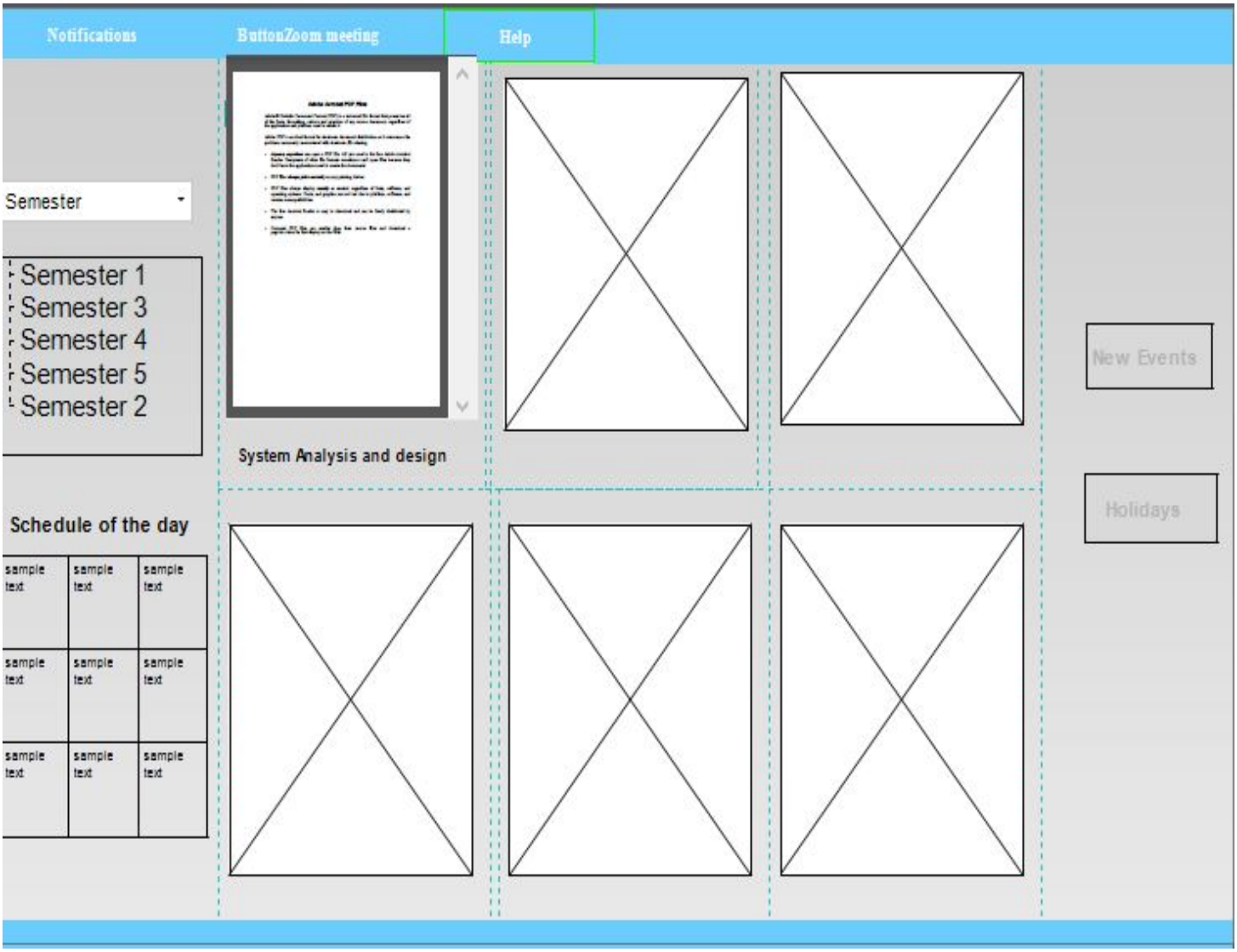

Figure 16:class registration form of the mobile app

Conclusion:

To sum up, this project was, for us, a great chance to practice what we have learned in theorical classes with our professor. In doing this project, we have learned how to deal with a system by analyzing it, decompose it, and design its database and human interface the thing that, for sur, will be beneficial in our future professional life.