بسم الله الرحمن الرحيم

USC – FCAI

Information System Department

Out Of Range Team

Faculty of Computer Science

A project is submitted to the Information System Department in partianl fulfilment of the requirements for the degree of a Practical Exam in Intro To Information System.

BY

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ACKNOWLEDGMENTS

Acknowledgments to Team Members:

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I am truly honored to have worked with such an amazing team. Your commitment, professionalism, and camaraderie have made this journey memorable and enjoyable. Our collective efforts and collaboration have laid the foundation for success, and I am confident that we will achieve even greater accomplishments in the future.

Thank you all for being an integral part of this team and for your unwavering support.

ABSTRACT

The project aims to develop a database management system for a Computer Science faculty. The system caters to three types of users: students, professors, and administrators. Upon opening the project, a start screen with three forms (Login, Contact, and About) is displayed.

The Contact form allows users to communicate with the administrators by sending messages, which are accessible only to admins. The About form provides information about the project and the team behind it. The Login form is essential for users to access the program and perform their intended tasks.

The system differentiates between student, professor, and admin users. Upon successful login, each user is directed to their respective main screen, which is distinct from one another.

For students, the Student Main Screen presents multiple tabs. The first tab displays the student's personal information, such as ID, first and last name, address, age, joining date, and status. Only admins can modify this information. The second tab shows the courses enrolled by the student, along with the grades received. Students can request enrollment in new courses, subject to admin approval. Once approved, the course appears in the student's list of courses.

The main screen for professors is similar to the student's main screen, with the first tab containing the professor's information and the second tab displaying the names of students enrolled in the professor's courses. Professors can modify and assign grades to their students.

The admin, who has access to all faculty-related data, has an Admin Main Screen. This screen includes forms for managing students and professors. The student form displays a table with all the students' information, allowing the admin to add or delete students and print student reports. The professor form functions similarly. Additionally, the admin can review enrollment requests and manage courses.

The Admin Main Screen also provides a reports section, where admins can view and manage messages received from users, mark them as read, and delete them.

The database schema includes tables for users, roles, students, professors, courses, enrollment, and requests, with appropriate relationships and foreign keys.

Several queries support the functionality of the system. Notable queries include retrieving student and professor information, displaying courses and enrolled students, handling enrollment requests, and managing communications.

Overall, this project aims to create a comprehensive database management system for a CS faculty, allowing students, professors, and admins to access and manage relevant data efficiently.

REFRENCES

[1] Abraham Silberschatz and Henry F.Korth and S. Sudarshan. DATABASE SYSTEM CONCEPTS, 7th Edition.

[2] Chat GPT.

[3] Microsoft Office 365 Trianing.

GLOSSARY

CS	Computer Science
ERD	Entity Relationship Diagram
tbl	Table
qry	Query
frm	Form

DEFINITIONS

Definitions About Tools of Microsoft access:

ERD (Entity-Relationship Diagram) is a modeling technique that is used to design and represent the relationships between different entities or objects in a database. The main components of an ERD include entities, attributes, and relationships.

1. Entities:

An entity represents a real-world object, concept or thing that is relevant to the system. It can be a physical object such as a car, a person, a place, or an abstract concept such as an account, a transaction, or an order. In an ERD, entities are represented as rectangles with the name of the entity written inside it.

2. Attributes:

An attribute is a characteristic or property of an entity. It describes the features, qualities, or characteristics of the entity. For example, the attributes of a person entity may include name, age, address, phone number, and so on. In an ERD, attributes are represented as ovals connected to the entity they belong to.

3. Relationships:

A relationship is a connection between two or more entities. It describes how the entities are related to each other. For example, a relationship between a person entity and a car entity can be "owns" or "drives". In an ERD, relationships are represented as diamond shapes, connecting the related entities.

The functions of ERD include:

1. Planning and Designing: ERD is an essential tool for planning and designing a database system. It helps to identify the entities and their relationships, and determine the attributes needed for each entity. This ensures that the database is organized and efficient.

2. Communication: ERD provides a clear and concise way to communicate the design of a database system to stakeholders such as developers, designers, and end-users. It helps to ensure that everyone involved in the project has a common understanding of the database structure and the relationships between different entities.

3. Maintenance: ERD can also be used to document the database system for future maintenance and upgrades. It provides a visual representation of the database structure that can be used to modify and update the system as needed.

Overall, ERD is an important tool for designing, communicating, and maintaining a database system. It helps to ensure that the system is well-organized, efficient, and easy to understand and use.

Microsoft Access is a database management system that allows users to store, organize, and manage data. It provides a variety of tools and features to help users create and maintain databases, including:

1. Tables: A table is a basic component of any database. In Access, a table is used to store data in rows and columns, similar to a spreadsheet. Users can create tables, define the fields and data types, and add, edit, or delete data.

2. Forms: A form is a user interface that allows users to enter and view data in a table. Users can create forms that include fields from one or more tables, add buttons and other controls, and customize the layout and appearance of the form.

3. Queries: A query is a search or question that retrieves data from one or more tables in the database. Users can create queries to find specific data, sort and filter data, calculate values, and summarize data.

4. Reports: A report is a formatted output of the data in a table or query. Users can create reports to print or view data in a professional format, such as a summary report or a chart.

Overall, Microsoft Access provides a range of tools and features to help users create and manage databases. Each tool has its own purpose and can be used together to create a complete database system that meets the needs of the user.

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TABLES

tblUsers

Contain all Users and all the same characteristics among all Role of users like: Username, Password, First Name, Last Name, Birth Date….etc.

	A	B	C	D	E	F	G	H	I	J	K
1	**UserID**	**Username**	**Password**	**Email**	**FirstName**	**LastName**	**Gouvernorat**	**City**	**BirthDate**	**Gender**	**Role**
2	23	Ebrahim	*******	hima132004@gmail.com	!Ebrahim	Elghrbawy	Monofeya	Sadat City	03-Jan-04	Male	Student
3	24	NOURAN	*******	nouran.fcai@gmail.con]m	Nouran	Hashad	Monofeya	Sadat City	01-Jan-04	Female	Student
4	25	Oliver	*******	ahmed.fcai@gmail.com	Ahmed	Nassar	Monofeya	Sadat City	01-Jan-04	Male	Student
5	26	ROWAIDA	*******	rowaida.fcai@gmail.com	Rowaida	Anter	Monofeya	Sadat City	01-Jan-04	Female	Student
6	27	MARWA	*******	marwa.fcai@gmail.com	Marwa	Ghanem	Monofeya	Sadat City	01-Jan-04	Female	Student
7	28	MOHMED	*******	mohmed@gmail.com	Mohmed	Abo Elmagd	Monofeya	Sadat City	01-Jan-04	Male	Student
8	29	Ahmed	*******	ahmed.fcai@gmail.com	Ahmed	El Adib	Monofeya	Sadat City	01-Jan-04	Male	Student
9	30	DAVID	****	malan@harvard.edu	David	Malan	Cambridge	Harvard	01-Jan-81	Male	Professor
10	32	RASHA	****	rasha@fci.helwan.edu.eg	Rasha	Abdeen	Cairo	Helwan	05-Sep-00	Female	Professor
11	33	MOSTAFA	****	mostafa@fcai.cu.edu.eg	Mostafa	Saad	Cairo	Cairo	01-May-82	Male	Professor
12	34	Admin	*****		Ebrahim	Mohmed	Monofeya	Sadat City	01-Jan-04	Male	Admin
13	35	ABDO	****	abdelrahman.gamal@fci.edu	Abdelrahman	Gamal	Monofeya	Sadat City	06-Mar-93	Male	Professor
14	36	DAVID2	****	david.fcai@fcai.edu.eg	David	Fadi	Kafr Elshikh	Elshikh	01-Jan-04	Male	Professor
15	37	Khalood	*******	Khaled11@hotmail.com	Khaled	Mosa	Monofeya	Sadat	13-Jan-04	Male	Student
16	39	Kholio	*******	Khalooood@tarsh.org	Khaled	El Abd	Monofeya	Ashmoon	23-Apr-04	Male	Student
17	40	MohmedKh	*******	Mohmed@gmail.com	Mohmed	Khaled	Monofeya	Sadat City	01-Jan-04	Male	Student
18	41	Aymanich	*******	Aymooon@etch.com	Ayman	Elkilany	Monofeya	Shebin	14-Jan-04	Male	Student
19	44	Hopa	****	Heba.fcai@prof.edu.eg	Heba	Asker	Cairo	Cairo	02-Apr-82	Female	Professor
20	45	Abdullah	*******	Abdallah@gmail.com	Abdullah	Saad	Monofeya	Talah	03-May-77	Male	Student
21	46	Omara	*******	Omara11@gmail.com	Mohmed	Omara	Monofeya	Shebin	01-Jan-04	Male	Student
22	47	Angy	****	noga.fcai@usc.edu.eg	Angy	Elshaf3y	Monofeya	Sadat City	############	Female	Professor
23	48	Dolaa	****	Dola@gmail.con	Adel	Morad	Monofeya	Sadat City	05-Sep-50	Male	Professor
24	49	Dolla	****	dola.adola@gmail.com	Adel	Nasim	Amman	Amman	12-Feb-50	Male	Professor
25	50	Abood	*******	Abdo142004@gmail.com	Abdelrahman	Waleed	Monofeya	Sadat City	04-Jan-04	Male	Student
26	51	Omar	*******	amoora@gmail.com	Omar	Sakr	Monofeya	Mnoof	03-Mar-04	Male	Student

Figure 1.1 – Table 1.1

tblStudents

Contain all students in Faculty and not repeated characteristic among another type users.

	A	B	C	D	E	F	G	H	I	J
1	StudentsID	UserID	DptID	Section	JoiningDate	Status	PhoneNo	EmergencyNO	AdmissionNo	GuardianName
2	6	23	ML	Section 3	08-Apr-23	Active	01096613552	01010929423	01025478889	Mohmed Elghrbawy
3	7	24	IS	Section 2	08-Apr-23	In-Active	01114452360	01021100458	01142554778	Atef Hashad
4	8	25	CS	Section 1	08-Apr-23	Migrated	01125547785	01022451200	01255400241	Abdallah Nassar
5	9	26	CIS	Section 2	08-Apr-23	Promoted	01223654788	01255424533	01015448200	Anter Lotfi
6	10	27	IT	Section 1	08-Apr-23	Struck-Off	01102245325	01012210548	01225478544	Samy Ghanem
7	11	28	CS	Section 4	08-Apr-23	Promoted	01112547880	01010124447	01124555870	Ahmed Abo Elmagd
8	12	29	CS	Section 1	08-Apr-23	Active	01010222454	01012236557	01022145888	Mohmed El Adib
9	13	37	IS	Section 1	10-Apr-23	Active	01254774830	01013203033	01192938833	Mossa Eisa
10	15	39	IS	Section 1	11-Apr-23	Struck-Off	01125447840	01102445781	01254788547	Ehab El Abd
11	16	40	CS	Section 2	11-Apr-23	In-Active	01022548756	01225455842	01011254789	Khaled Mousa
12	17	41	IS	Section 1	13-Apr-23	In-Active	01125447886	01145887552	01101125447	Ebrahim Elkilany
13	18	45	CS	Section 1	13-Apr-23	Active	01125448965	01002455875	01152245887 01145587755	Fawzy Saad
14	19	46	IS	Section 2	14-Apr-23	Active	01011255479	01255447851	01024478547	Ashraf Omara
15	20	50	IS	Section 1	15-Apr-23	Active	01010929423	01125448477	01012445847	Walid Answer
16	21	51	CIS	Section 3	17-Apr-23	Struck-Off	01254875996	01025477854	01254785454	Maher Sakr

Figure 1.2 – Table 2.1

tblProfessors

Contain all Professors in Faculty and not repeated characteristic among another type users.

	A	B	C	D	E
1	TeacherID	UserID	PhoneNo	Salary	CourseID
2	10	30	+1220551221	$6,000.00	CS50
3	13	32	01001255144	$3,800.00	DataBase
4	14	33	01124558487	$5,000.00	Data Structure
5	15	35	01124568447	$3,000.00	Semiconductors
6	16	36	01214454786	$150.00	Logic Design
7	19	44	01011254483	$9,000.00	Programing 1
8	20	47	01011455879	$900.00	Discrete Mathematics
9	21	48	01200155463	$9,000.00	Mathematics 1
10	22	49	01124465447	$50,000.00	Mathematics 2
11	23	52	01024578892	$6,000.00	Web
12	24	53	01024457881	$7,000.00	Algorithms

Figure 1.3 – Table 3.1

tblCourses

Contain all Courses and some characteristics like name, points..etc

	A	B	C
1	**CourseID**	**CourseName**	**Points**
2	1	CS50	3
3	2	DataBase	3
4	3	Data Structure	3
5	4	Semiconductors	3
6	5	Web	3
7	6	Programing 1	3
8	7	Mathematics 1	3
9	8	Mathematics 2	3
10	10	Discrete Mathematics	3
11	11	Logic Design	3
12	18	Algorithms	3
13	19	C++	3
14	20	C#	3

Figure 1.4 – Table 4.1

tblEnrollment

Contain all Enrollment processes for courses

	A	B	C	D	E
1	EnrollmentID	StudentID	CourseID	Grade	Data
2	74	18	6	A-	13-Apr-23
3	20	6	2	A-	09-Apr-23
4	88	11	1	A-	20-Apr-23
5	23	7	2	A+	09-Apr-23
6	38	12	3	A+	09-Apr-23
7	64	6	4	A+	11-Apr-23
8	67	16	1	A+	11-Apr-23
9	19	6	1	B	09-Apr-23
10	21	6	5	B-	09-Apr-23
11	31	10	5	B-	09-Apr-23
12	68	13	6	B-	12-Apr-23
13	26	8	2	B+	09-Apr-23
14	60	13	1	B+	11-Apr-23
15	35	11	2	B+	09-Apr-23
16	25	8	5	C	09-Apr-23
17	39	12	5	C	09-Apr-23
18	28	9	5	D	09-Apr-23
19	30	9	3	D	09-Apr-23
20	22	7	4	D	09-Apr-23
21	27	8	1	F	09-Apr-23
22	36	11	3	F	09-Apr-23
23	72	17	4	F	13-Apr-23

Figure 1.5 – Table 5.1

tblRequests

Contain all Enrollment Requests created by students

	A	B	C	D	E
1	RequestID	CourseID	StudentID	Date	Time
2	92	6	6	20-Apr-23	00-Jan-00
3	93	3	6	20-Apr-23	00-Jan-00
4	94	10	6	20-Apr-23	00-Jan-00
5	95	1	7	20-Apr-23	00-Jan-00
6	96	3	7	20-Apr-23	00-Jan-00
7	97	6	7	20-Apr-23	00-Jan-00
8	98	1	8	20-Apr-23	00-Jan-00
9	99	3	8	20-Apr-23	00-Jan-00
10	100	10	8	20-Apr-23	00-Jan-00
11	101	1	9	20-Apr-23	00-Jan-00
12	102	3	9	20-Apr-23	00-Jan-00
13	103	6	9	20-Apr-23	00-Jan-00
14	104	6	10	20-Apr-23	00-Jan-00
15	105	7	10	20-Apr-23	00-Jan-00
16	108	5	11	20-Apr-23	00-Jan-00
17	109	3	11	20-Apr-23	00-Jan-00
18	110	7	11	20-Apr-23	00-Jan-00
19	112	3	12	20-Apr-23	00-Jan-00
20	114	8	6	20-Apr-23	00-Jan-00
21	115	3	13	20-Apr-23	00-Jan-00
22	116	10	13	20-Apr-23	00-Jan-00
23	117	3	17	20-Apr-23	00-Jan-00
24	119	3	15	20-Apr-23	00-Jan-00
25	120	8	15	20-Apr-23	00-Jan-00
26	121	6	16	20-Apr-23	00-Jan-00
27	122	8	16	20-Apr-23	00-Jan-00

Figure 1.6 – Table 6.1

tblReports

Contain Reports or Message sended by users from Contact Screen

	A	B	C	D	E	F	G	H	I
1	ID	Name	Phone	Email	Subject	Message	Date	Time	Read
2	28	Fatal	01024451277	project.user1@gmail.com	Changes	Learn to see me as a brother instead of two distant strangers and thats how its supposed to be. How can the Devil take a brother if he is close to me? Id love to go back to when we playes as kids. But things change... thats the way it is	18-Apr-23	00-Jan-00	FALSE
3	29	Jonth Eprinter	01245512471	project.user2@gmail.com	Leave Right Now	I`m here, just like I said. Though it`s breaking every rule I ever made. My racin` heart is just the same. Why make it strong to break it once again? And I`d love to say I do, give everything to you. But I can never not be true. So I say, I think I`d better leave right now, before I fall any deeper.	18-Apr-23	00-Jan-00	TRUE
4	30	Sweeny Todd	01024478544	project.user3@gmail.com	The Demon Barber	There`s a hole in the world like a great black pit. And the vermin of the world inhabit it. And its morals aren`t worth what a pig could spit. And it goes by the name of London	18-Apr-23	00-Jan-00	FALSE
	31	Elizabeth Gilbert	01024588002	project.user4@gmail.com	One Woman`s Search for Everything	People think a soul mate is your perfect fit, and that`s what everyone wants. But a true soul mate is a mirror, the person who shows you everything that is holding you back, the person who brings you to your own attention so you can change your life.	18-Apr-23	00-Jan-00	FALSE

Figure 1.8 – Table 8.1

FORMS

frmStart

1.Login

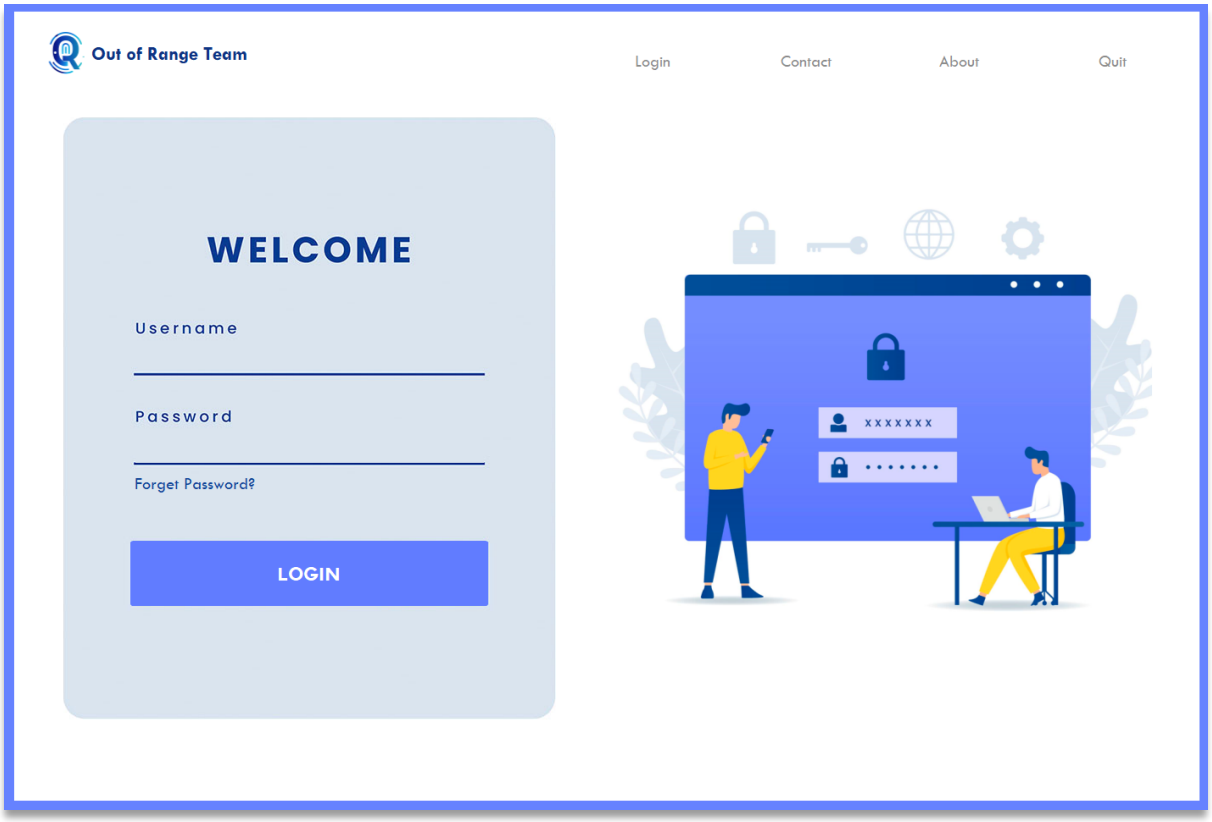


Figure 2.1

2.Contact

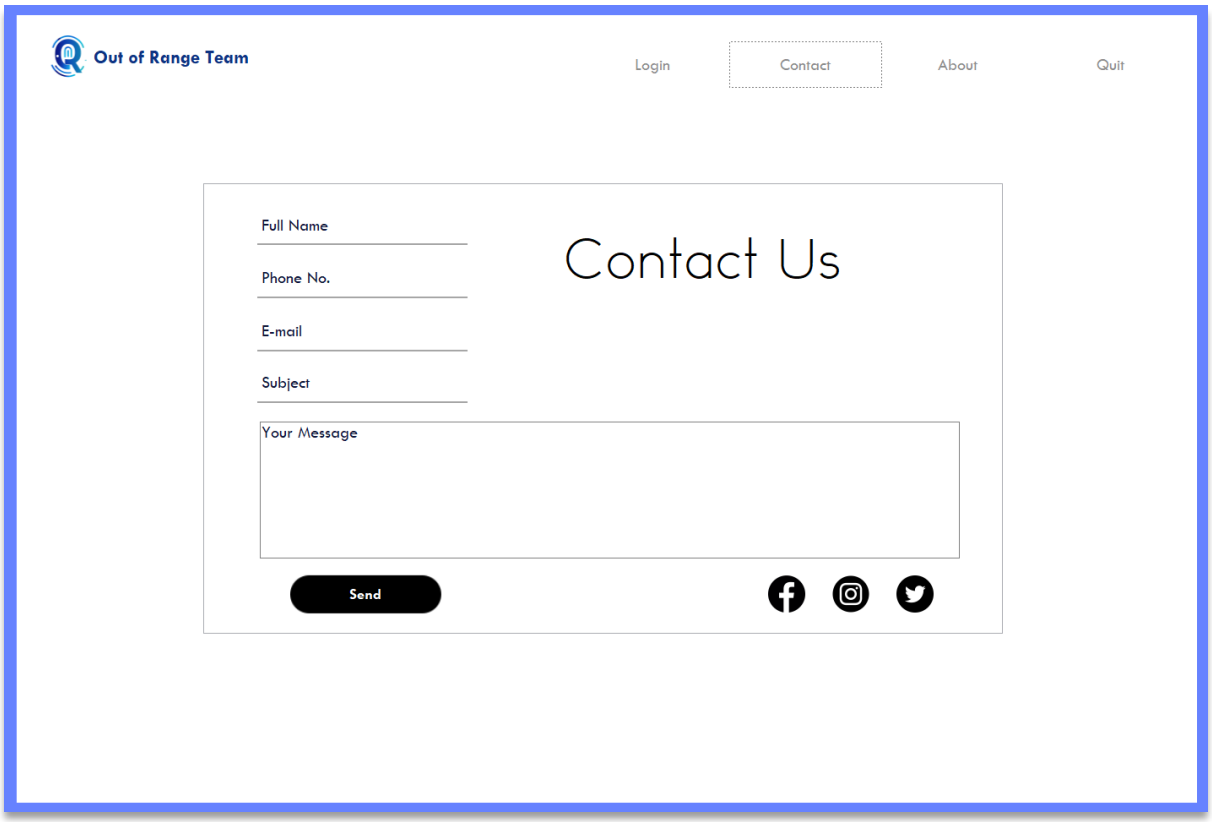


Figure 2.2

frmStudent

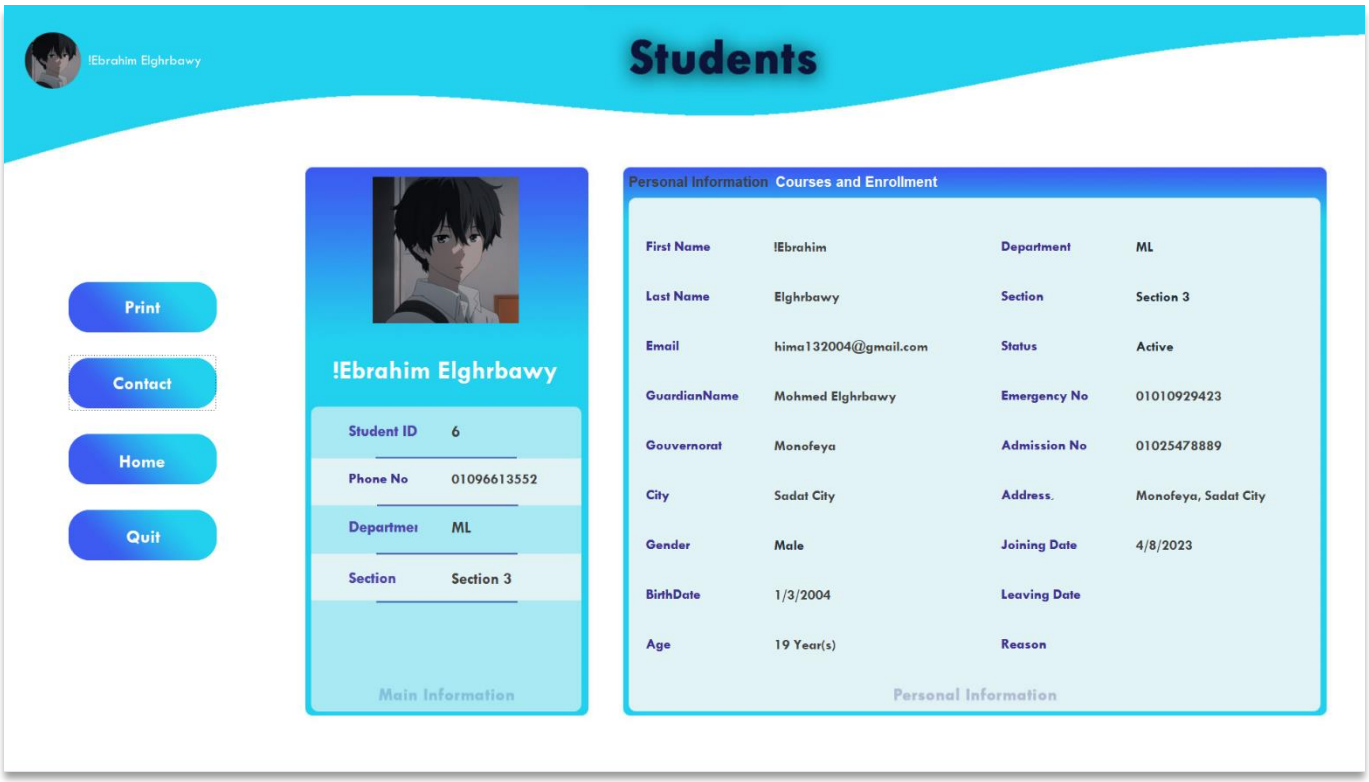


Figure 3.1

1.Personal Information

Figure 3.2

2.Courses And Enrollment

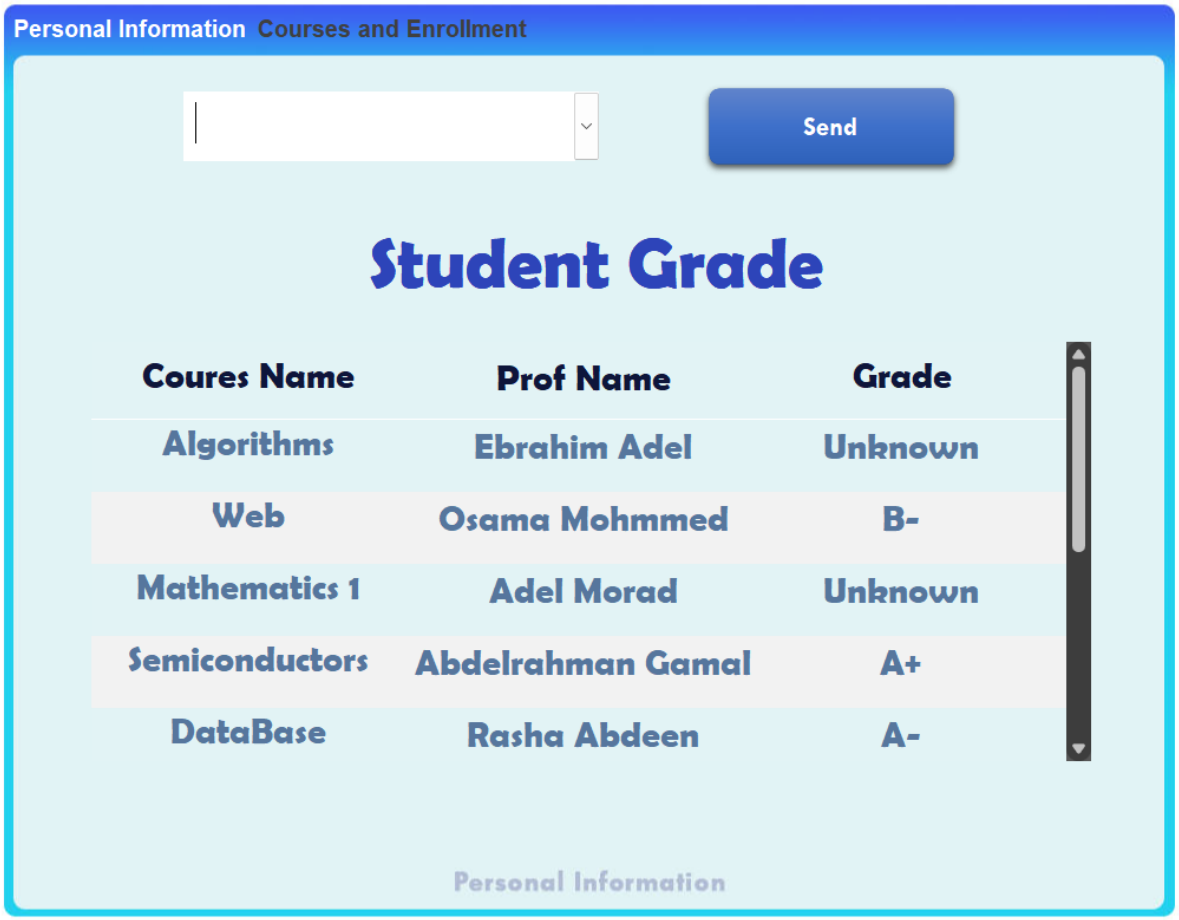


Figure 3.3

frmProfessors

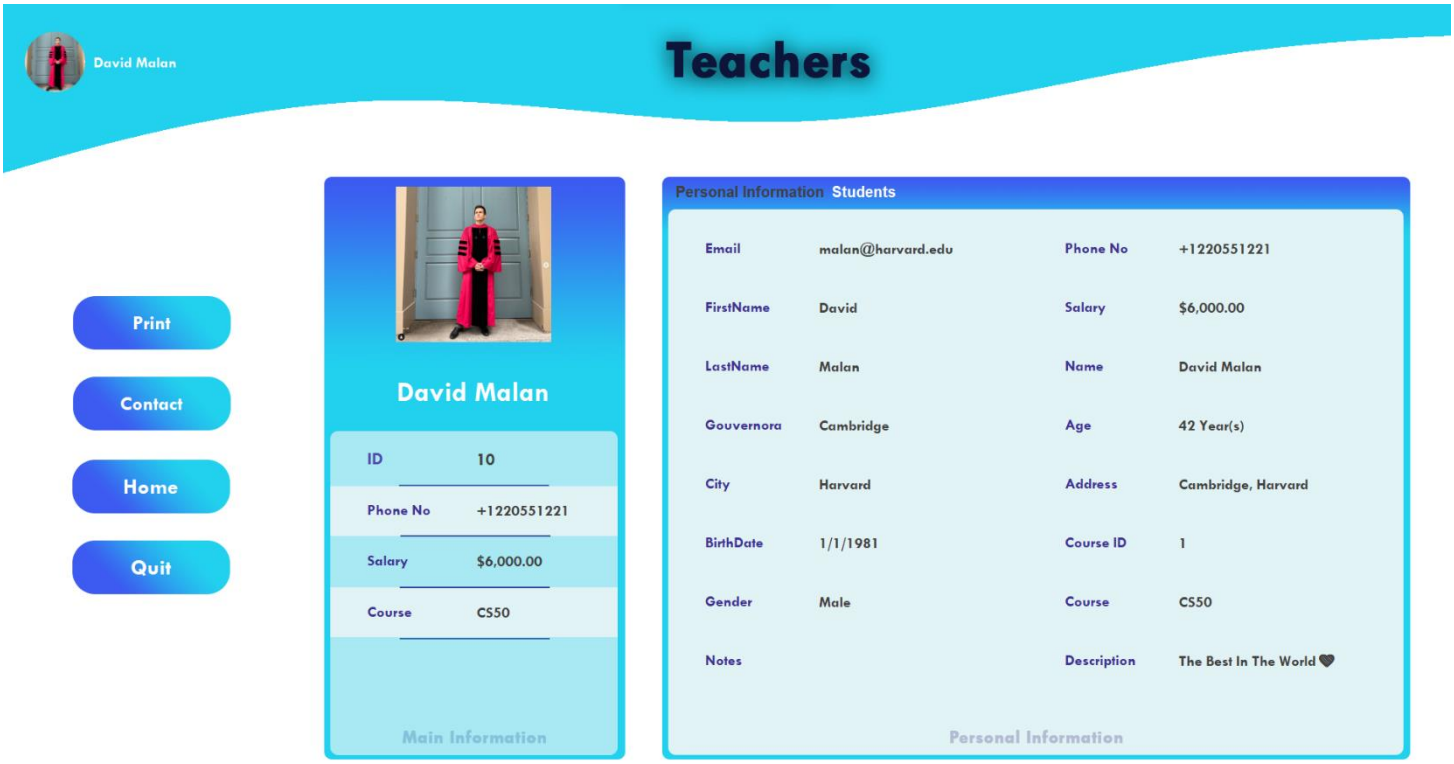


Figure 4.1

frmAdmin

1.Students

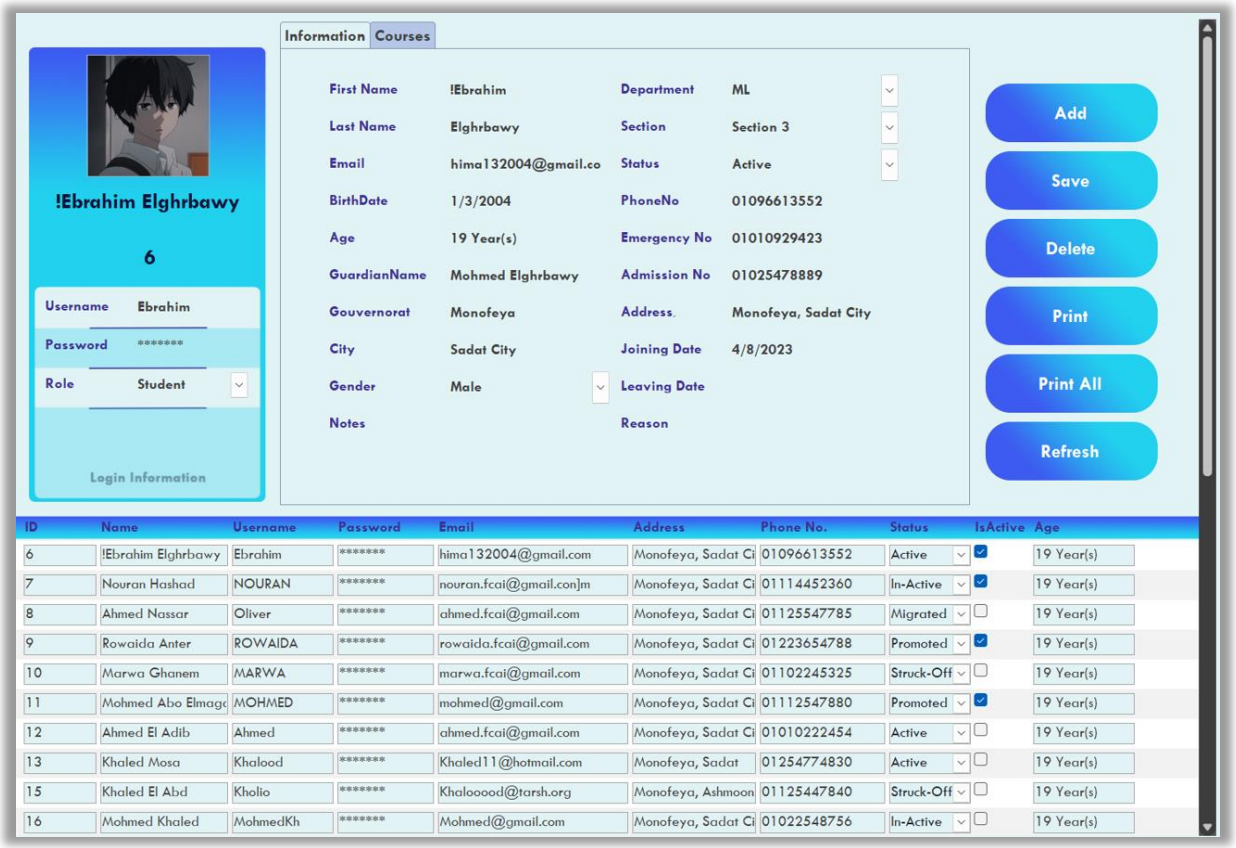


Figure 5.1

2.Professors

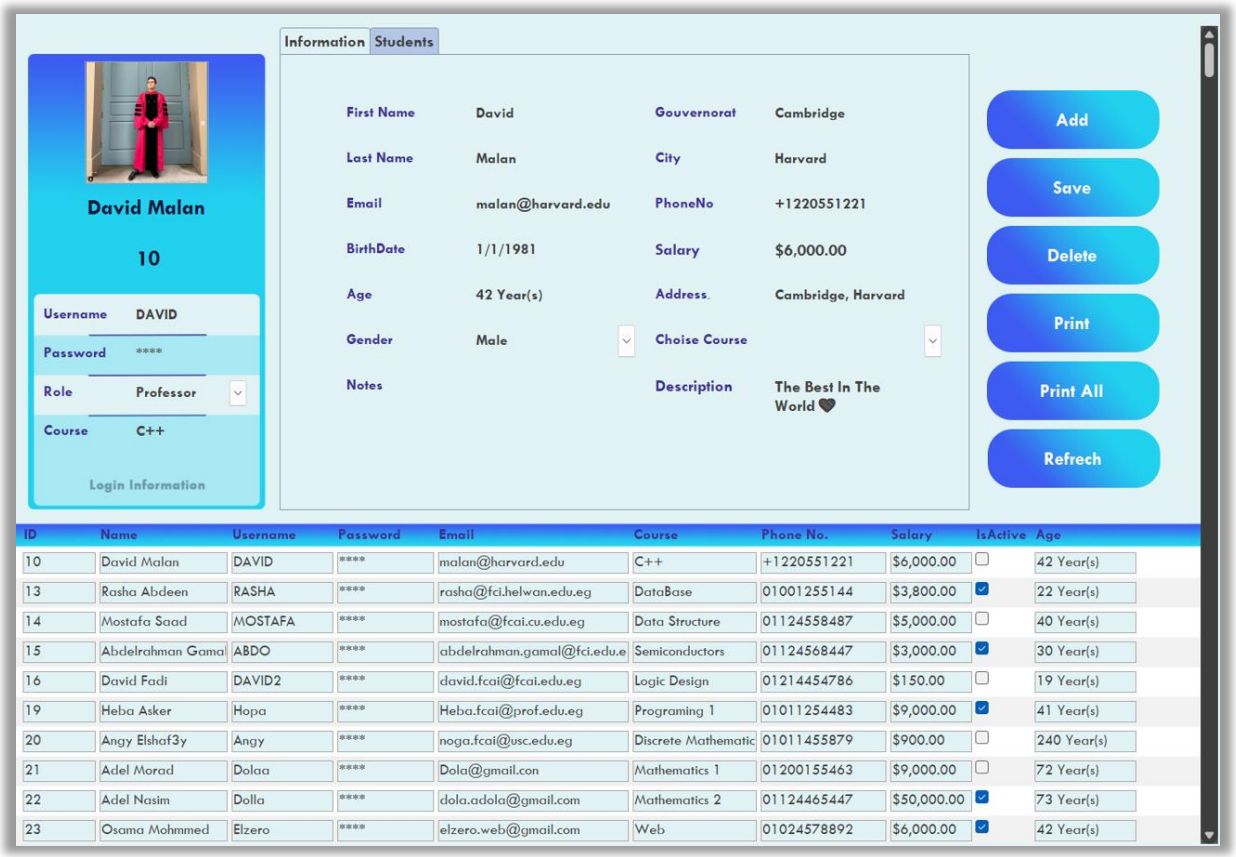
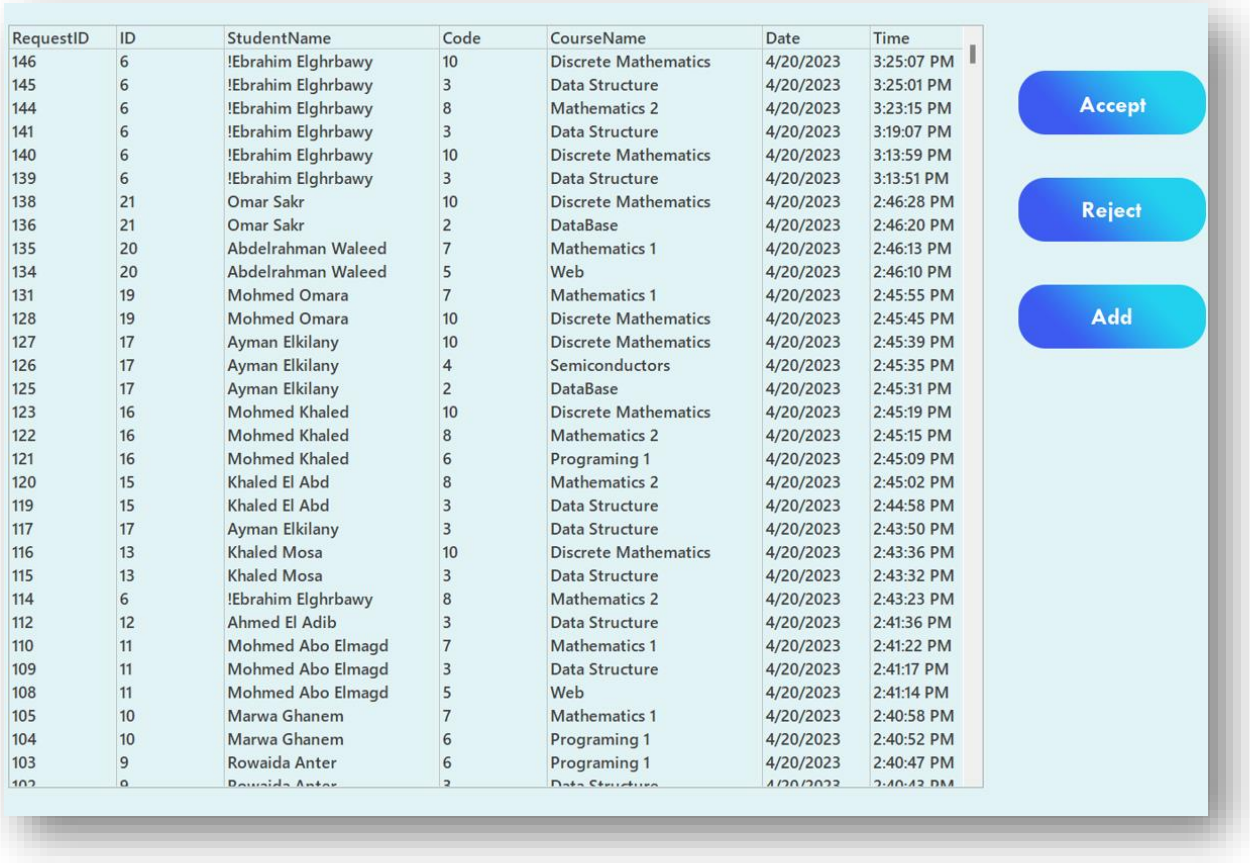


Figure 5.2

3.Enrolment Requests



RequestID	ID	StudentName	Code	CourseName	Date	Time
146	6	!Ebrahim Elghrbawy	10	Discrete Mathematics	4/20/2023	3:25:07 PM
145	6	!Ebrahim Elghrbawy	3	Data Structure	4/20/2023	3:25:01 PM
144	6	!Ebrahim Elghrbawy	8	Mathematics 2	4/20/2023	3:23:15 PM
141	6	!Ebrahim Elghrbawy	3	Data Structure	4/20/2023	3:19:07 PM
140	6	!Ebrahim Elghrbawy	10	Discrete Mathematics	4/20/2023	3:13:59 PM
139	6	!Ebrahim Elghrbawy	3	Data Structure	4/20/2023	3:13:51 PM
138	21	Omar Sakr	10	Discrete Mathematics	4/20/2023	2:46:28 PM
136	21	Omar Sakr	2	DataBase	4/20/2023	2:46:20 PM
135	20	Abdelrahman Waleed	7	Mathematics 1	4/20/2023	2:46:13 PM
134	20	Abdelrahman Waleed	5	Web	4/20/2023	2:46:10 PM
131	19	Mohmed Omara	7	Mathematics 1	4/20/2023	2:45:55 PM
128	19	Mohmed Omara	10	Discrete Mathematics	4/20/2023	2:45:45 PM
127	17	Ayman Elkilany	10	Discrete Mathematics	4/20/2023	2:45:39 PM
126	17	Ayman Elkilany	4	Semiconductors	4/20/2023	2:45:35 PM
125	17	Ayman Elkilany	2	DataBase	4/20/2023	2:45:31 PM
123	16	Mohmed Khaled	10	Discrete Mathematics	4/20/2023	2:45:19 PM
122	16	Mohmed Khaled	8	Mathematics 2	4/20/2023	2:45:15 PM
121	16	Mohmed Khaled	6	Programing 1	4/20/2023	2:45:09 PM
120	15	Khaled El Abd	8	Mathematics 2	4/20/2023	2:45:02 PM
119	15	Khaled El Abd	3	Data Structure	4/20/2023	2:44:58 PM
117	17	Ayman Elkilany	3	Data Structure	4/20/2023	2:43:50 PM
116	13	Khaled Mosa	10	Discrete Mathematics	4/20/2023	2:43:36 PM
115	13	Khaled Mosa	3	Data Structure	4/20/2023	2:43:32 PM
114	6	!Ebrahim Elghrbawy	8	Mathematics 2	4/20/2023	2:43:23 PM
112	12	Ahmed El Adib	3	Data Structure	4/20/2023	2:41:36 PM
110	11	Mohmed Abo Elmagd	7	Mathematics 1	4/20/2023	2:41:22 PM
109	11	Mohmed Abo Elmagd	3	Data Structure	4/20/2023	2:41:17 PM
108	11	Mohmed Abo Elmagd	5	Web	4/20/2023	2:41:14 PM
105	10	Marwa Ghanem	7	Mathematics 1	4/20/2023	2:40:58 PM
104	10	Marwa Ghanem	6	Programing 1	4/20/2023	2:40:52 PM
103	9	Rowaida Anter	6	Programing 1	4/20/2023	2:40:47 PM

Figure 5.3

4.Reports

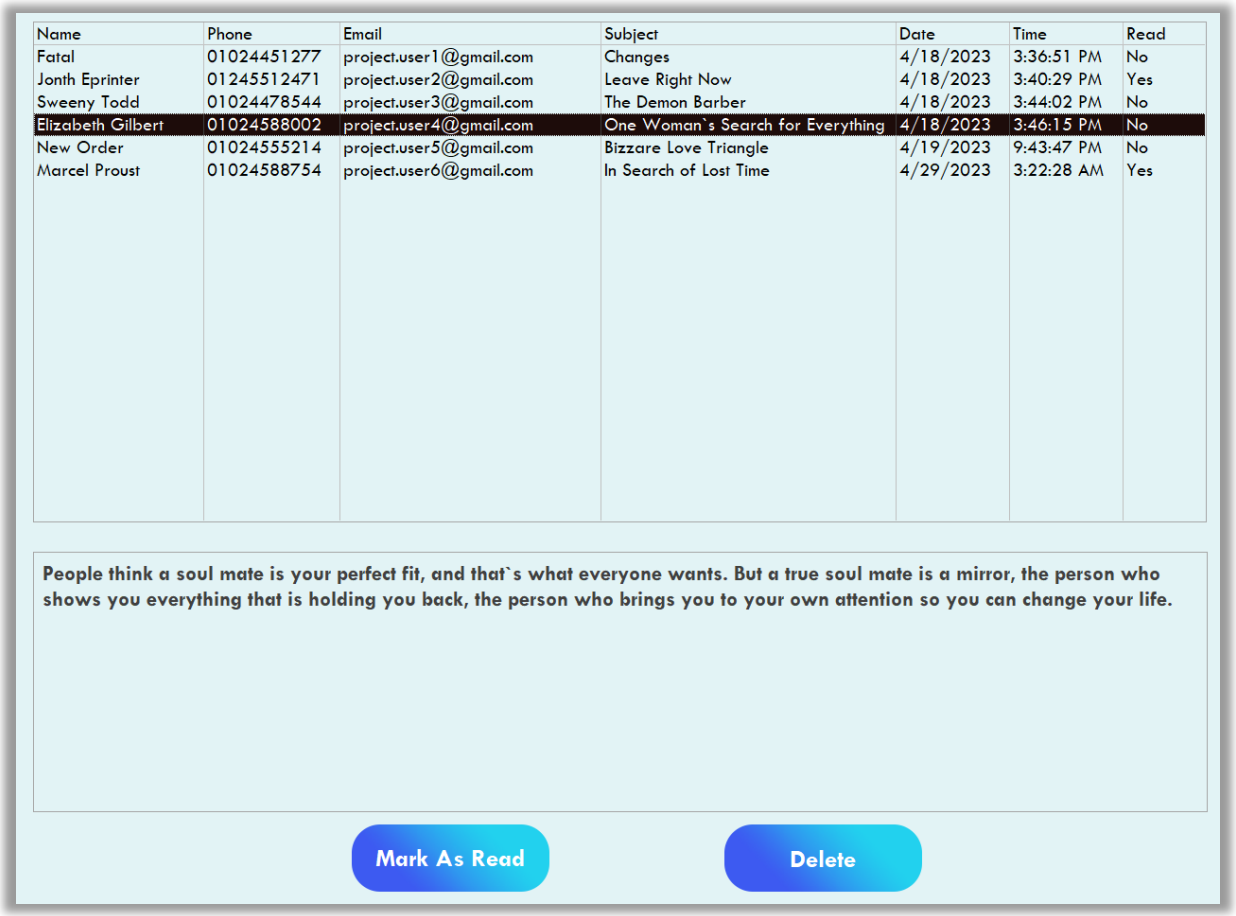
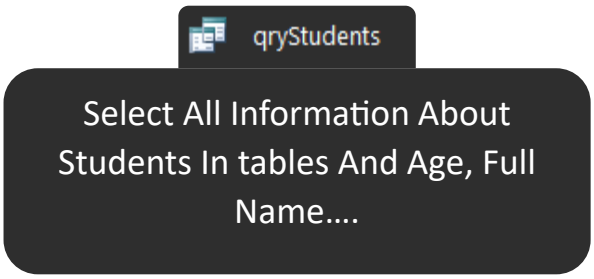
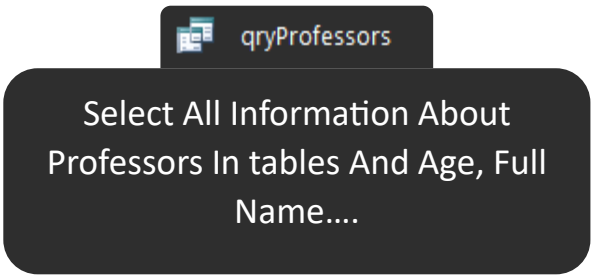
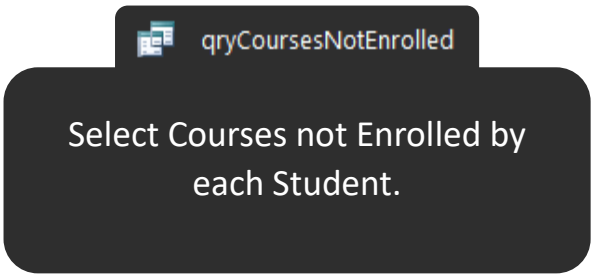


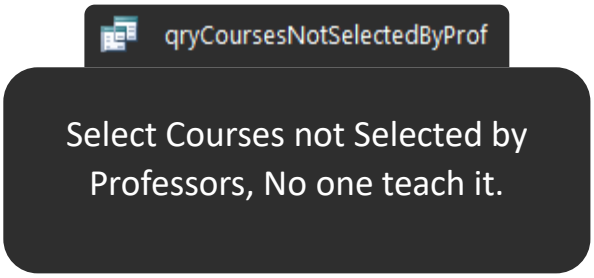
Figure 5.4

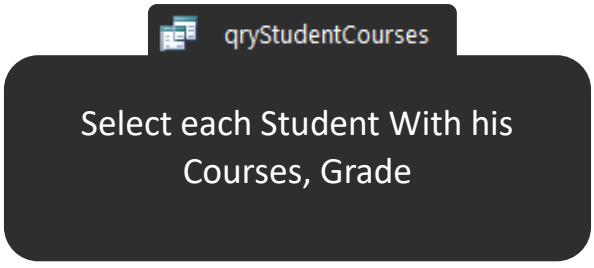
QUERIES


qryStudents
Select All Information About Students In tables And Age, Full Name….


qryProfessors
Select All Information About Professors In tables And Age, Full Name….


qryCoursesNotEnrolled
Select Courses not Enrolled by each Student.


qryCoursesNotSelectedByProf
Select Courses not Selected by Professors, No one teach it.


qryStudentCourses
Select each Student With his Courses, Grade

qryRequests
Select Course Name and Student Name in Requests Table.

SCHEMA

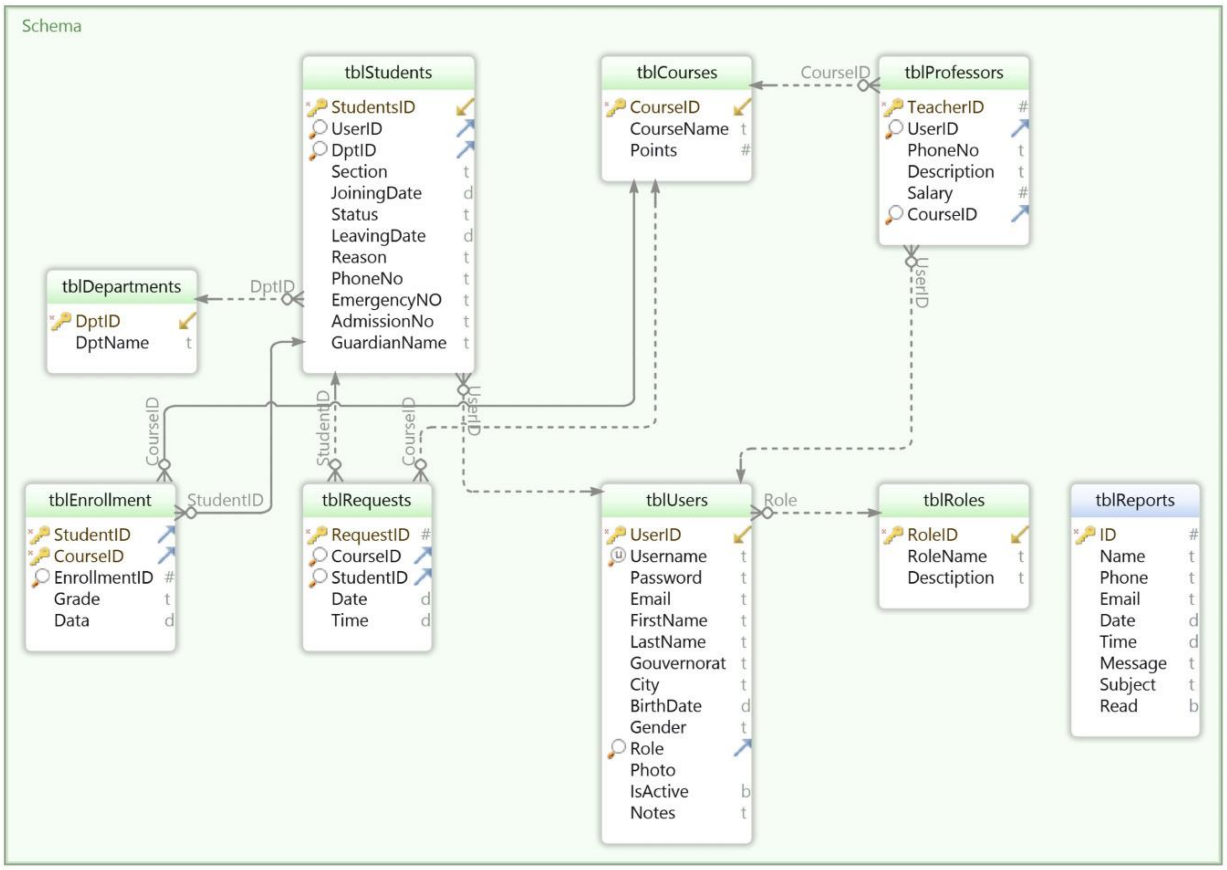


Figure 6.1

ERD

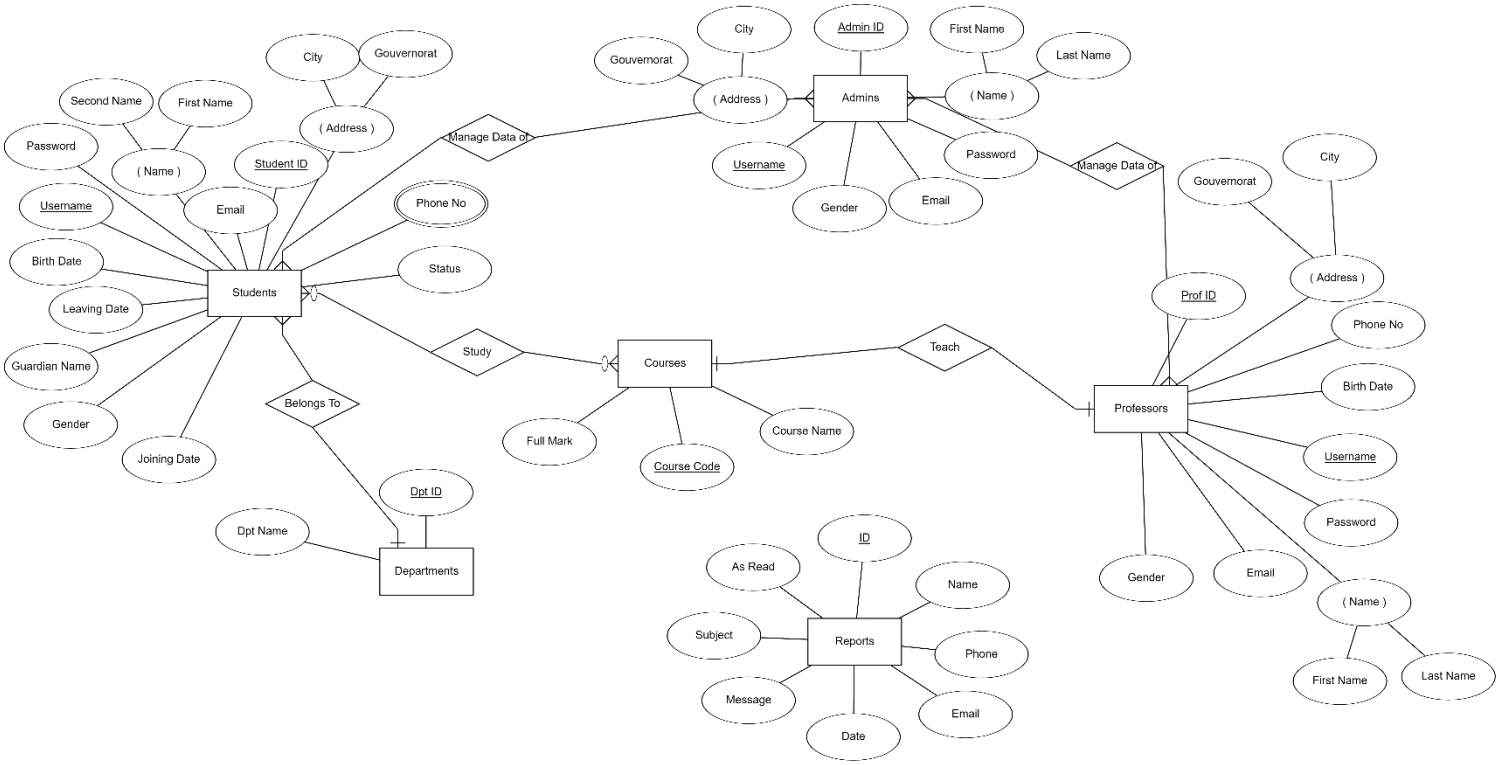


Figure 7.1