COMPUTERIZED STATISTICS ROOM

A project report submitted in partial fulfilment of the
Requirements for the award of the degree of
Bachelor of Computer Science

By

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DECLARATION

I hereby declare that this project report is based on my original work except for citations and quotations which have been duly acknowledged. I also declare that it has not been previously and concurrently submitted for any other degree or award at University of Tabuk or other institutions.

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APPROVAL FOR SUBMISSION

I certify that this project report entitled **"COMPUTERIZED STATISTICS ROOM"** was prepared by **TURKI NIMR AL-SHAMMARI, ABDULLAH HUSSEIN HASSAN, YASSER MARZOUQ AL-QAHTANI, NAWWAF MUHAMMAD AL-NAFAI,** has met the required standard for submission in partial fulfilment of the requirements for the award of Bachelor of Computer Science at University of Tabuk.

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In addition, I would also like to express my gratitude to my loving parent and friends who had helped and given me encouragement..

PROJECT TITLE IN CAPITAL LETTER
TITLE TO BE THE SAME AS FRONT COVER

ABSTRACT

Higher education in the kingdom recently witnessed great leaps and tremendous development that included all aspects of higher education, Especially the university of Tabuk and the college of computers and information technology**.**

Inside the faculty there is the statistics and information unit, It was established by the dean of the faculty of computers and information technology in 1436 H, and the main role of the unit is to provide the senior management of the college and any other department in the university with the required requirements. Statistical reports on faculty members. The hope is to automate every activity related to statistical reports on employees and thus support decision-making. In 1437 the unit became part of the college's quality unit.

The statistics and information unit is concerned with recording a huge amount of data on students, members, and professors, and statistical reports on faculty members, and given the importance of this information, all these data are recorded in the unit carefully, but the current system depends on recording these data manually and if update a new data this data should send email and follow email and reply, which causes a waste of time and more effort, need More requirements and also not secure enough and it is possible that this data will be losted..

Therefore, we seek to do that project, which aims to computerize the statistics and information unit into a complete system, aiming to solve that problem, preserve data from loss, save time and effort, and we will present in this report an explanation of the existing problems and the goals we want to achieve

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LIST OF ABBREVIATIONS

DB	Database
DBMS	Database Management System
ER	Entity–relationship model
SQL	Structured Query Language
DFD	Data flow Diagram
DLL	Dynamic Link Library

CHAPTER 1

INTRODUCTION

1.1 Background

It is important for any university to have a statistic unit because in many cases we need to provide statistical reports for top management who always need to make decisions. For example, in universities, the top management may need to know how many staff members who are specialized in Database systems. Therefore, most organizations have a Statistics Unit to collect, analyze and support making decisions. Failing to provide statistical reports means misleading into decisions.

To Support decision making, the Faculty of Computers and Information Technology (FCIT) at the Univeristy of Tabuk, always need statistical reports. Therefore, the faculty created the Statistics and Information Unit. It is concerned with recording data about faculty members and professors and producing statistical reports about them. When the top management needs any type of statistics, they send to the unit

The current system of Unit of Statistics and Information depends on recording the faculty members data manually. All the process is done manually and there is no update mechanism for the staff members data. In addition, this causes a waste of time and more effort. It is also not secure enough and it is possible that the data may be lost.

Therefore, this project aims to computerize the work in the Statistics and Information Unit at the faculty of Computers and Information Technology into a complete computerized system. The system will store personal data of the staff members, their qualifications, publications, experience, units and committees for which the staff member is assigned, etc. This will help in preserving data from loss, saving time and effort. It also help in producing statistical reports which will help top management in making decisions.

1.2 Problem overview

Statistics about staff member are important for the top management in making decisions. For example, we may need a report about number of the female staff members or a report on staff member who are specialized in artificial Intelligence.

As we previously talked about, the Statistics and Information Unit is concerned with recording data about members, and professors at the faculty. Now, the process is done manually. Usually the unit send e-mails for collecting data from staff members when any top management asks for a report. Then the unit gets the needed data manually and build the needed report. After that the unit sends the report to the top management which asks about it.

The process needs human efforts and it wastes time and makes delay. There are many problems during data retrieval also. In addition, reports may not be accurate because the data is not updated. The complete problems of the current system is provided in the next chapter.

In this project we are going to design a complete and computerized system for the work at the department of Statistics and Information. Therefore, the system can generate statistical reports for the top management at the Faculty of Computers and Information Technology.

1.3 Aims and Objectives

We have talked about the many problems that face the current system in the Statistics and Information Unit. Therefore, the project aims to solve them.

In particular, the main objective is to build a computerized web-based database system for the Unit of Statistics and Information.

The system will store the data about the staff members at the Faculty of Computers and Information Technology.

All problems like duplication of data, difficulty in entering data correctly always, wasting a lot of time in dealing with data and used many requirements such as storage space devices will be eliminated.

The system makes it easier to do a lot of work and keeps the data from loss and it protects it by backing up its data.

The system should also produce statistical reports for the top management. So it allows high speed in data recording, producing reports and easy manipulation of data.

So the system would be very beneficial for the University of Tabuk, the higher management and the faculty of Computers and Information Technology, especially the Statistics and Information Unit.

1.4 Report's Layout

In addition to the current chapter, the thesis consists of three other chapters. Chapter 2 presents the description of the current system and all the steps of the current system. Chapter 3 describes the proposed system and its design such as Entity and Relationship Diagrams (ERD), the mapping of the ERD to tables (data dictionary), use case diagrams and the system flowchart. Chapter 4 presents the conclusion and the future work.

CHAPTER 2

2.1 Introduction

In this chapter, we will explain the complete description of the current system and explain how data is handled, what is the data that the Statistics and Information Unit records. So, we will show what is the basic data that should be stored by the unit, and what is the sub data which is related to the basic data.

First, we give a short description for the University of Tabuk, the Faculty of Computers and Information Technology and the Unit of Statistics and Information at the Faculty. These are examples for the beneficial organization.

2.2 About University of Tabuk and the Faculty of Computers and Information Technology

Higher education in the kingdom recently witnessed great leaps and tremendous development that included all aspects of higher education. This educational renaissance includes all regions of the kingdom, including Tabuk region. The Establishment of the University of Tabuk has been approved in 1427 H (2006 G) by the Custodian of the Two Holy Mosques, King Abdulla Bin Abdul-Aziz, God bless his soul. The main aim is to meet the requirements of the development in Tabuk region such as specialized university cadres. The vision of the university is to be "A distinguished university in education, research and community service" [1].

The Faculty of Computers and Information Technology was established in 2008 with a vision to "Provide qualitative education based on emerging knowledge

and skills and contribute to innovative research to serve the community". Upon it is establishment, FCIT has four departments; Computer Science, Information Systems and Information Technology and Computer Engineering [2].

Since this decision was taken, the college administration has been seeking to achieve one of the most important goals of establishing the college, which is to graduate distinguished qualified graduates in the field of information technology, computer science and computer engineering. The college devotes its efforts to be able to meet the scientific and educational challenges, and be keen to keep pace with the rapid development in the field of computer science and information technology to provide the latest technical knowledge to its students [2].

2.3 About the Unit of Statistics and Information

The statistics and information unit was established by the Dean of the Faculty of Computers and Information Technology in 1436 H. The main role of the unit is to provide the senior management of the college and any other department in the university with the required Statistical reports about faculty members. The hope is to computerize every activity related to statistical reports on employees and thus support decision-making. In 1437 H the unit become a part of the Quality Unit at the faculty.

2.4 Description of the Current System

The statistics and information unit is concerned with recording data about faculty members, but. The current system depends on recording the data manually and there is no computerized system to provide statistics for the staff of the Faculty of Computers and Information Technology at University of Tabuk. If there is an update for a new information or a report is needed by top management, The unit sends an email to all staff members and their replies, the unit produces the needed report. This causes a waste of time and more effort is needed. It is also not secured enough and it is possible that the data may be lost.

Currently there are some forms template in a MS WinWord used to collect data but there is no way to update this collected data. The forms consists of a set of data related to each other because the person has more than one activity and similar activities. Staff members record their data in these forms carefully.

In the following, we will show the data that is recorded manually by the staff members:

- **Main Data:**

The staff member enters in this section the its main data. The main data includes his employment number, his full name, nationality, position, gender, place of birth, date of birth, his marital status, address, contact number, website, the department for which he is currently working, passport number, passport country, office number, office transfer number, electronic mail, the current city of his work, the date of the current contract and residence permit number or national number (if the staff member is Saudi).

We will notice that in some elements their data is shared by some members, and here it is possible to enter the data by mistake because the human element is the one who enters the data and therefore the error is possible

- **Academic Qualifications:**

Staff members have many academic qualifications member. This includes: what is his bachelor's or a master's degree, is it a first degree or a second degree, the date of obtaining qualification and from where it was obtained, the country from which the member obtained the certificate and the general specialization and the specific specialization.

- **Honors and Awards:**

The member wants to record some of the honors and awards he has obtained. He enters these honors and awards that he obtained and from which university, institute or organization, the year in which he received the award, some description about it, and financial amount given if any

- **Editorship and Review in Journals and Conferences**

Sometimes we also need to add editorial data of the members in journal, technical review and conference to the data section of some members. So we need to know some information like if he works as a reviewer for a journal or a conference, his role in the review and editorship, the name of the conference or the name of the journal and from which date to which date, including the type of this journal or technical review and a description of it.

- **Supervision:**

Staff members may serve as supervisors for MSc and PhD students. Therefore, we store if he supervises a MSc or a PhD degree, the names of the students he supervises and in which year, institute and country

- **Funding:**

Member here needs to enter the research title, the sponsor and the year in which it is obtained, the amount, a full description of it, and the full registration of this data and for each its data member

We will notice that the data has become large and there is a correlation between this part and what came before it, and therefore if the registration is not correct, there will be many problems and slow data retrieval

- **Publications:**

Publications entered by staff members may be:

❖ **Referred Journals:**

In data section related to publications in referred journals, the member submits some information necessary to record this part like journal name, volume, year of publication, authors names, title and the page numbers.

❖ **Conference Paper Proceedings:**

The member enters here the data, is it a conference paper, abstract, or

workshop? it is required also to know the name of the conference, authors names, the title of the paper, place of the conference and year.

- **Books:**

  Entering data for books in which the name of the book is recorded, the authors who wrote it, the year and the publisher. If the staff member writes only some chapters, these chapters number will be entered.

- **Invited Talks:**

Some information about the invited lectures is stored. So, the member enters the name of the talk, the title of the talk, the inviter, in which organization and the date of the talk.

- **Professional Affiliation Membership:**

In professional affiliation membership in some international societies such as ACM and IEEE, the member needs to enter some information like name of the society and the beginning date.

- **Services:**

One of the important parts and data the data is used a lot is the data related to the services. The staff member enters here what the service title, description, scope, the name of the organization for which the member serves with the start date and the end date. It is also needed to fully describe the service provided.

- **Experience:**

Experience has two types: academic and professional. So, the staff member here enters the place in which the staff member worked, the address and the country, the title of the work and its description. We also store the time (from and to) for which he has been working.

- **Courses Taught**

Here course title that was taught by staff member is entered. The equivalent name of the course at the Faculty of Computers and Information Technology is also entered.

This will help on reports on what course can be taught be what staff member.

- **Events Attended:**

This includes workshops, training and conferences attended, in which the member is trained on new things. In this part the member enters the type of this training is it workshop or training or conference and the name of this training, the organization in which he has trained, its place, its year and its location.

We notice after a long period of recording data and the data has become large

- **Responsibilities**

Staff member can be assigned to do a certain work. For example he can be a member in a committee or a unit, e.g., the Unit of Statistics and Information. So the staff member here enters the role of the responsibility, the title, the destination which issue the task and the date for the responsibility (from and to).

- **Scholarship Details:**

The scholarships of Saudi staff members include important data like country, general specialization, specific specialization, details like dates, extension or transfer data is also entered.

- **Referees:**

In this section the staff member enters his referees data like name, position, affiliation, address, email, and mobile phone number .

We notice the human factor may be mistaken, so we must find a solution to this problem

2.5 The Problems of Current System

As we explained there are some problems facing manual manipulation by Statistics and Information Unit. , and it is very difficult to continue with these problems. Here are some problems in the Current system

- The current system contains many data that are frequently repeated as the data are recorded more than once in more than one different place
- A lot of time wasted entering a lot of repetitive data
- The human factor may make a mistake in entering the wrong data
- increasing the size of data, which requires many storage requirements
- Consuming many requirements such as excessive processing over too much data
- Difficulty retrieving the required data, a lot of time is wasted to obtain the required data, and if it is registered in a wrong way, then it becomes very difficult to access this information unless much time has run out.

In the current manual system, the greater data, the more requirements are consumed and the more time it takes in processing to retrieve data. So we will solve these problems as we will explain in the following chapter by computerizing this system

Chapter 3

METHODOLOGY

It was shown that current system is manual. Therefore, the proposed system is to computerize the system and the information needed by top management in the faculty. The system will be built as a web-based database system that has the ability to be accessed from any places and it will be controlled by users accounts.

In this chapter, we will explain our analysis of the project and how we will build this system later. For the analysis, we implement Use Case Diagrams to show the relation between user and system and Entity Relationship Diagram (EDR) to show relation between entities. We will also show the data dictionary for all entities, Class Diagrams and the System Flowchart (SF).

3.1 Objectives of the Proposed System

We will explain some of the points that we aim to achieve by computerizing work in the Statics and Information Unit:

1. Not to repeat data and also not to waste time in entering repeated data
2. Reducing the percentage of the human factor in data entry and relying on computers to arrange and organize this data
3. Reducing the size of the data, which saves the use of the necessary requirements for storage
4. Saving the consumption of processing operations due to the reduction of data redundancy
5. We aim to facilitate the retrieval of the required data, due to the organization of entering the data from the beginning of the registration
6. Producing statistical reports when needed and to contribute in decision making of

top management at the faculty.

If these goals are implemented, then all previous problems will be solved

3.2 Use Case Diagram

A use case is the specification of a sequence of actions, including variants that a system (or other entity) can perform, interacting with actors of the system. The Unified Modeling Language (UML) allows the software engineer to express an analysis model using the modeling notation that is governed by a set of rules.

Use case Diagrams represent the functionality of the system from a user's point of view. Use cases are used during requirements elicitation and analysis to represent the functionality of the system. Use cases focus on the behavior of the system from external point of view.

Actors are external entities that interact with the system. Examples of actors include users like administrator, users …etc.

Actors:

1) Primary actor: user:

- Registration: user (staff member) can registration at the System and admin should confirm verify identity.
- Login : user can log in to system by using register account
- System home page : represent the home page to user
- Enter Main data: The user should fill all data in Main data
- Add general data: The user (staff member) can add basic data according to evets as like add academic qualification, honors and awards, affiliations, funding if he has, publication in referred journal, books, services, experience, responsibilities and scholarship details, view entered general data, archives certificates and permanent residence copy.
- Update general data : The user (staff member) can add data according to evets as like add academic qualification, honors and awards, affiliations , funding ,publication in referred

journal, books, services, experience , responsibilities and scholarship details, view entered general data.

- Edit data: user can edit the data which he entered before.
- Delete data : user can delete data
- View data : user can see all data
- Search data : user can search for a specific data
- Log out : user can logout to save his account

2) Second Actor: Administrator:

- Manages user accounts (Add, Edit, Update or drop).
- Manages reference tables data like Citizenship, Occupation, Gender, Marital Status, Graduation Degree, Degree Class, General Specialization, Specific Specialization, etc (Add, Edit, Update or drop)
- Produces reports to top management.
- View data as needed.
- Backup Database

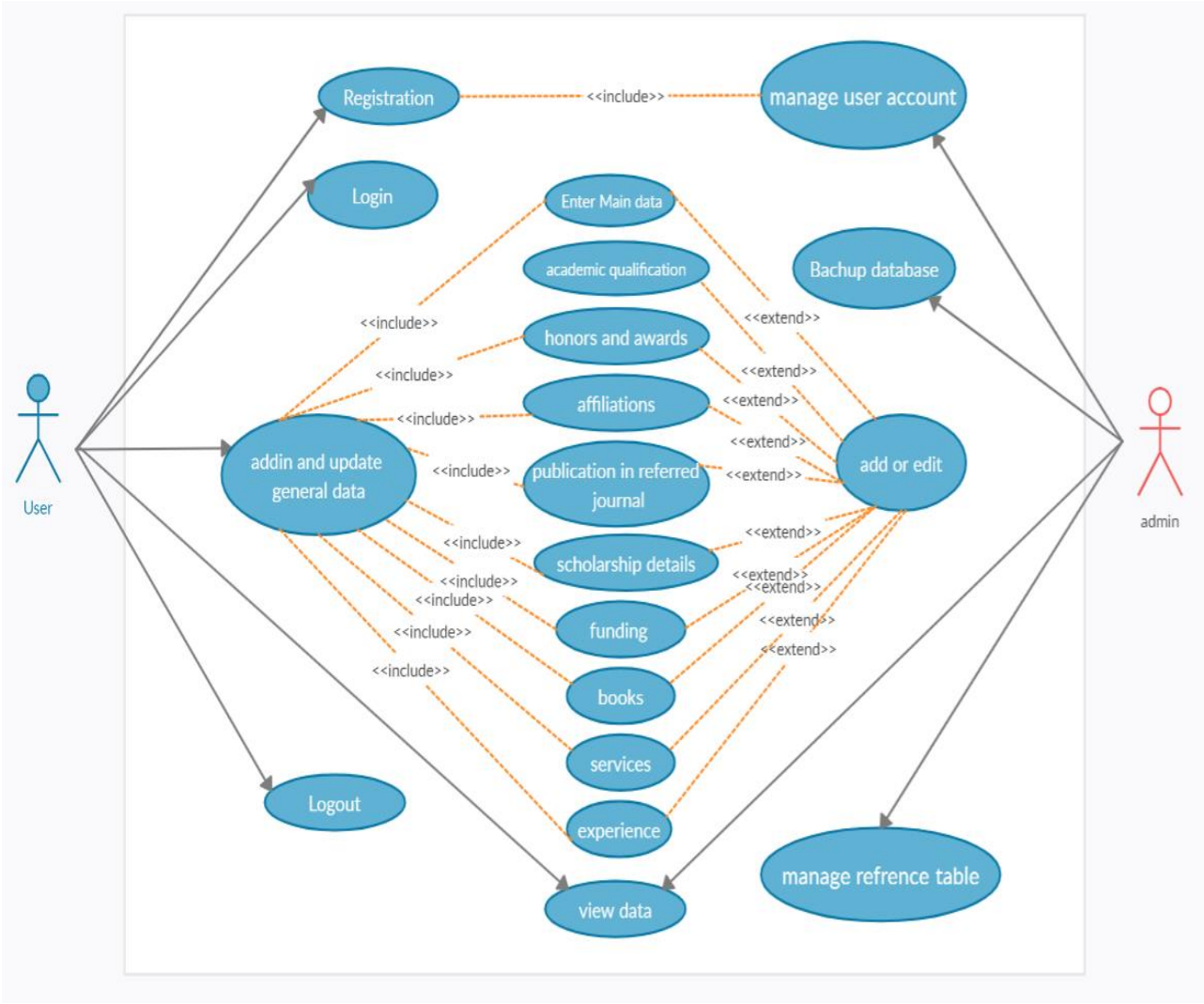

Figure 3.1 : Use Case Diagram

Login Scenario:

Table 3.1 : Login scenario

Use Case Name:	Login
Actors:	user
Description:	A user will login by using user name and password Login using: • User name • Password

Exception	User account is not created by system administrator
Scenario	1. User enter user name and password 2. Press login button 3. System check in DBMS and return (true or false) 3.1 If true : the system will display user interface 3.2 other : the system will display error message
Post conditions	account was created by system administrator

Mange user account:

Table 3.2: Manage user account

Use Case Name:	Manage user account
Actors:	Admin
Description:	A request to create a user account is the process of adding and registering new data in the system database. Where the administrator fills out the form designed to add a new user and can edit or delete. **Record :** • Personal information (Id , name, mobile , email) • Job information (Job " Admin , HR or Employee " , job date)
Exception	ID not registered in the database
Scenario	1. Admin fill form 2. Press button save 3. System use ID to check in DBMS and return (true or false) 3.1 If true : save data in DB and display message "data was saved" 3.2 other : the system will display error message " ID no added inDB "

Post conditions	Registered in the archive database

Add general data:

Table 3.3: Add General data

Use Case Name:	Add General data
Actors:	user
Description:	The user can enter the general data anywhere in the database, but in the beginning he must enter the maindata and he can also view the data and modify or delete it **Record :** • Main data (StaffMemNum, Name, Citizenship, email, Gender, PassportNo, Occupation) The user should fill all data in Main data • General data : The user (staff member) can add basic data according to evets as like add academic qualification, honors and awards, affiliations, funding if he has, publication in referred journal, books, services, experience, responsibilities and scholarship details
Exception	Data can’t be added in the archive database, You must make sure that the data you entered is correct
Scenario	4. Admin fill form 5. Press button save 6. System use ID to check in archive DBMS and return (true or false) 3.3 If true : save data in DB and display message "data was saved" 3.4 other : the system will display error message " ID no added in archive DB "

Post conditions	The data is added in the archive database

update general data:

Table 3.4: update General data

Use Case Name:	update General data
Actors:	user
Description:	The user can edit or delete the general data in the database, The user should fill all data in Main data befor **update :** • Main data (StaffMemNum, Name, Citizenship, email, Gender, PassportNo, Occupation) • General data : : The user (staff member) can add data according to evets as like add academic qualification, honors and awards, affiliations , funding ,publication in referred journal, books, services, experience , responsibilities and scholarship details.
Exception	Data can’t be updated in the archive database, You must make sure that the data you entered is correct
Scenario	7. Admin fill form 8. Press button save 9. System use ID to check in archive DBMS and return (true or false) 3.5 If true : save data in DB and display message "data was saved" 3.6 other : the system will display error message " ID no added in archive DB "
Post conditions	Registered in the archive database

3.3 Class diagram

Class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects.

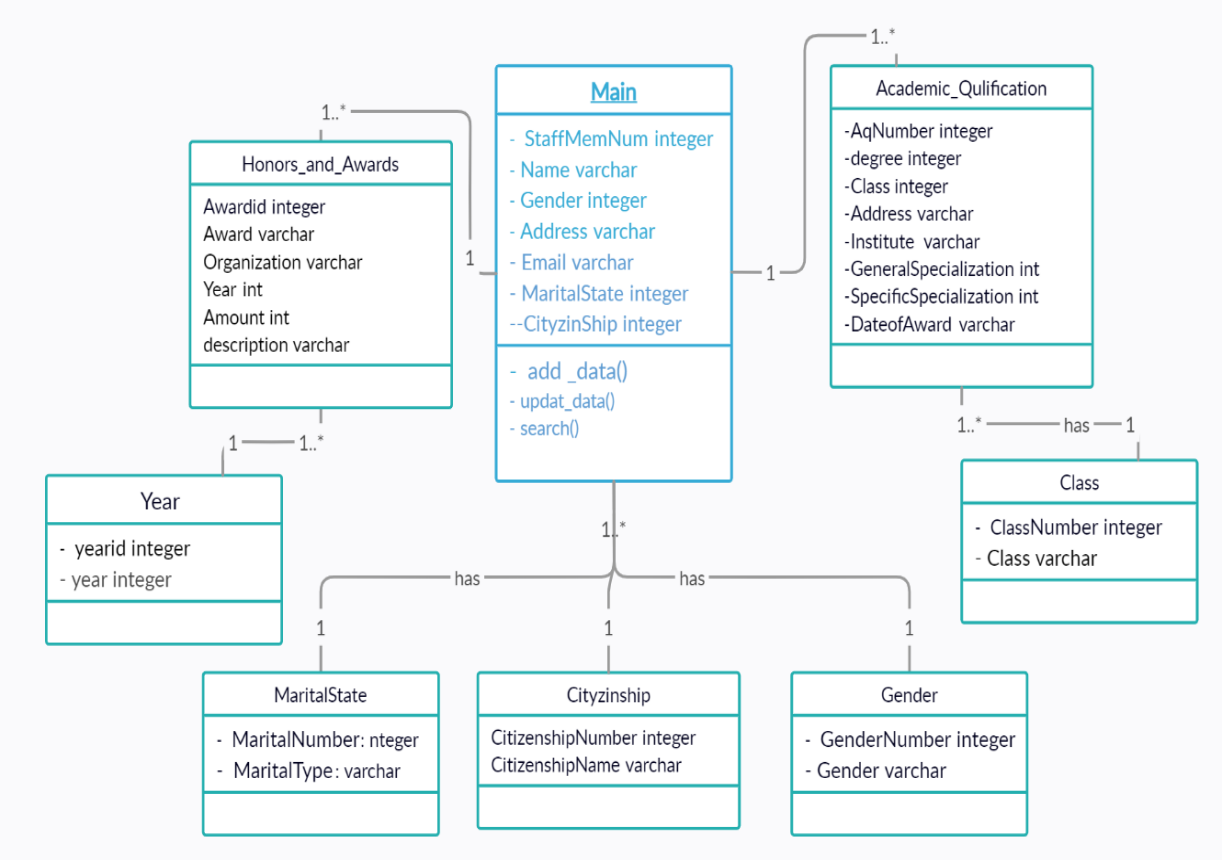

Figure 3.2: Class Diagram

3.4 ER Diagram and Data Dictionary

In the following, we will show ERD diagram and data dictionary of our system. In particular, we used the Entity and Relationship Diagrams (ERD) to describe the entities of the proposed system and the relationships between these entities as it was written in the proposed system requirements. After we designed the ERD of the proposed system, we map the entities, attributes and relationships to tables with their attributes types and length. During the mapping we put what we know about normalization in database.

Main

Table 3.5 : Main Table

Serial number	Field	Type	Length	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	Name	Varchar	30	اسم العضو		
3	Citizenship	Integer		الجنسيه		Citizenship
4	Occupation	Integer		الوظيفة		Occupation
5	Gender	Integer		النوع		Gender
6	DateofBirth	Date		تاريخ الميلاد		
7	PlaceofBirth	Varchar	30	محل الميلاد		
8	MaritalStatus	Integer		الحاله		MaritalStatus
9	Address	Varchar	50	العنوان		
10	ContactNum	Varchar		رقم التليفون		
11	Email	Varchar	50	الايميل		
12	Web Page	Varchar	100	الموقع الخاص		
13	PassportCountry	Integer	100	جواز سفر خاص باى دوله		Citizenship
14	PassportNo	Integer		رقم جواز السفر		
15	WorkCity	Varchar	100	مدينه العمل		
16	FirstDateHirig	Date		اول تاريخ		
17	FirstDateTabuk	Date		اول تاريخ بتبوك		
18	OffBuidling	Varchar	50	مبنى المكتب		OffBuidling
19	OfficeNo	Integer		رقم المكتب		
20	OfficeTrNo	Integer		الرقم الخاص		

				بالمكتب		
21	ResidenceNationalNo	Varchar		الاقامه او الهوية الوطنيه		
22	Photo	attachments		صوره		
23	Docs(certificates)	attachments		مرفقات (الشهادات)		

Citizenship

Serial number	Field	Type	lenght	Caption	Key	Reference
1	CitizenshipNumber	Integer		رقم الجنسيه	Primary key	
2	CitizenshipName	Varchar	50	الجنسيه		

Occupation

Serial number	Field	Type	lenght	Caption	Key	Reference
1	OccupationNumber	Integer		رقم الوظيفه	Primary key	
2	OccupationName	Varchar	50	الوظيفه		

Gender

Serial number	Field	Type	lenght	Caption	Key	Reference
1	GenderNumber	Integer		رقم النوع	Primary key	
2	Gender	Varchar	15	النوع		

MaritalState

Serial number	Field	Type	lenght	Caption	Key	Reference
1	MaritalNumber	Integer		رقم الحاله	Primary key	
2	MaritalType	Varchar	15	الحاله		

OffBuidling

Serial number	Field	Type	lenght	Caption	Key	Reference
1	OffBuidlingID	Integer		رقم المبنى	Primary key	
2	MaritalType	Varchar	15	الحاله		

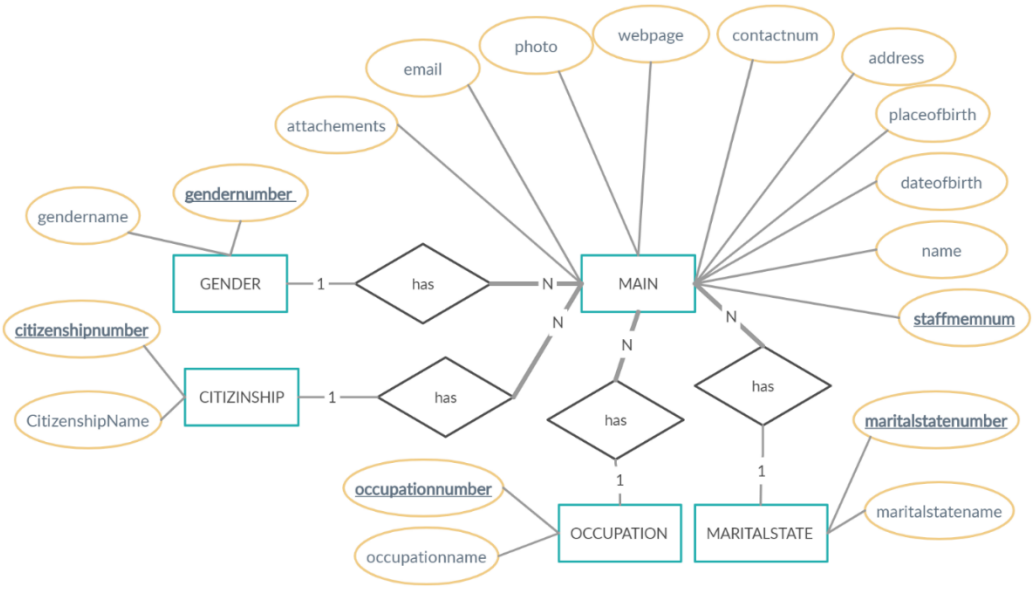

Figure 3.3 : ER Diagram MAIN

AcademicQualifications

Table 3.6 : AcademicQualifications Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	AqNumber	Integer		رقم المؤهل	Primary key	
3	degree	Integer		الدرجه		degree
4	Class	Integer		الرفعه		Class
5	DateofAward	Varchar	30	تاريخ الحصول		
6	Institute	Varchar	60			
7	Country	Integer		البلد وهو جدول مستخدم من قبل		Citizenship
8	Address	Varchar	60	العنوان		
9	GeneralSpecialization	Integer		التخصص العام		GeneralSpecialization
10	SpecificSpecialization	Integer		التخصص المحدد		SpecificSpecialization

Degree

Serial number	Field	Type	lenght	Caption	notes
1	degreeNumber	Integer		رقم الدرجه	Primary key
2	degree	Varchar	15	الدرجه	

Class

Serial number	Field	Type	lenght	Caption	notes
1	classNumber	Integer		رقم القيمه	Primary key
2	class	Varchar	30	القيمه	

GeneralSpecialization

Serial number	Field	Type	lenght	Caption	notes
1	GeneralSpecializationNumber	Integer		رقم التخصص	Primary key
2	GeneralSpecialization	Varchar	30	التخصص العام	

SpecificSpecialization

Serial number	Field	Type	lenght	Caption	notes
1	SpecificSpecializationNumber	Integer		رقم التخصص	Primary key
2	SpecificSpecialization	Varchar	30	التخصص المحدد	

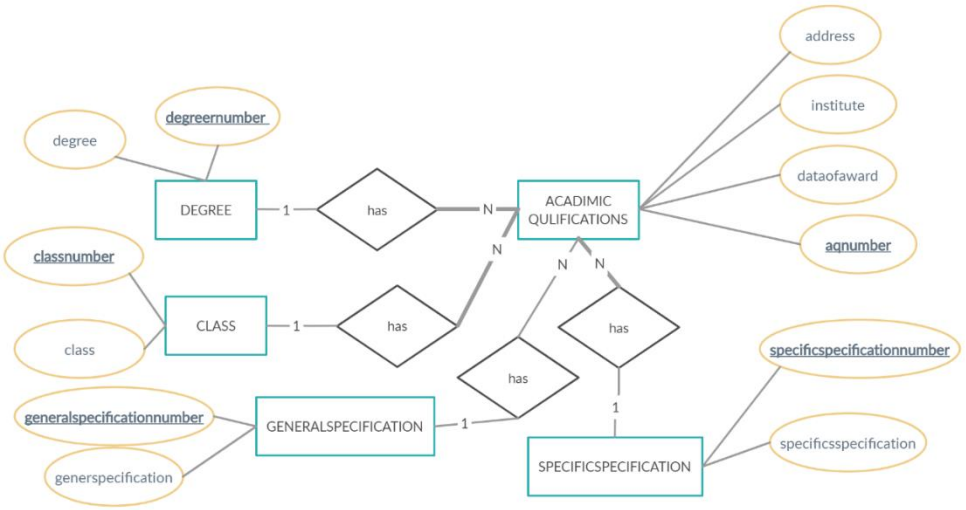

Figure 3.4 : ER diagram AcadamicQulification

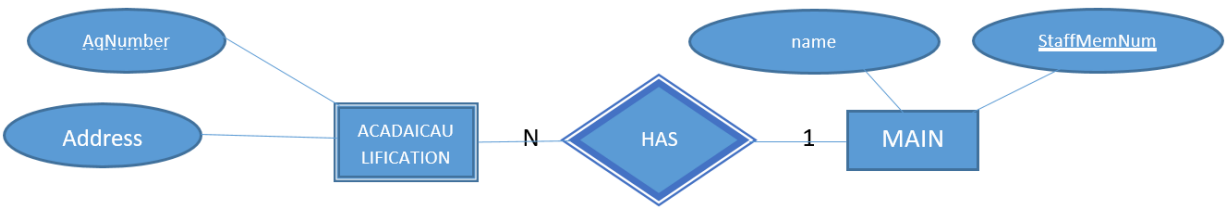

Figure 3.5 : the relation between MAIN and ACADAICAULIFICATION

HonorsAndAwards

Table 3.7 : HonorsAndAwards Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	Award id	Integer		رقم الجائزه	Primary key	
3	Award	Varchar	50	الجائزه		Award
4	Organization	Varchar	60	الجهة		
5	Year	Integer		السنه		Year
6	Amount	Varchar	50	الكميه		
7	description	Varchar	100	الوصف		

Year

Serial number	Field	Type	lenght	Caption	Key	Reference
1	yearId	Integer		رقم السنه	Primary key	
2	Year	Integer		السنه		

Award

Serial number	Field	Type	lenght	Caption	Key	Reference
1	AwardId	Integer		رقم المكافئه	Primary key	
2	AwardName	Varchar	30	اسم المكافئه		

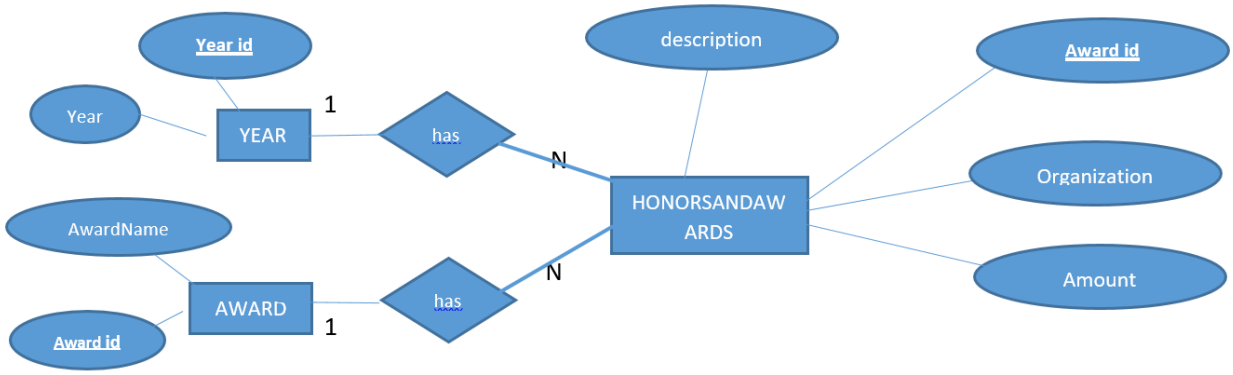

Figure 3.6 : ER Diagram HonorsAndAwards

Publications

Table 3.8 : Publications Table

Serial number	Field	Type	length	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	PublicationsID	Integer		رقم متسلسل النشر	Primary key	
3	PublicationsType	Integer		نوع المنشور		PublicationsType
4	EditionalRole	Varchar	30	قواعد		EditionalRole
5	Description	Varchar	100	وصف		
6	From	date		من تاريخ		
7	To	date		الى تاريخ		

PublicationsType

Serial number	Field	Type	length	Caption	Key	Reference
1	PublicationsTypeID	Integer		رقم المنشور	Primary key	
2	PublicationsType	Varchar	30	نوع المنشور		

EditionalRole

Serial number	Field	Type	length	Caption	Key	Reference
1	EditionalRoleID	Integer		رقم الرول	Primary key	
2	EditionalRoleType	Varchar	30	الرول		

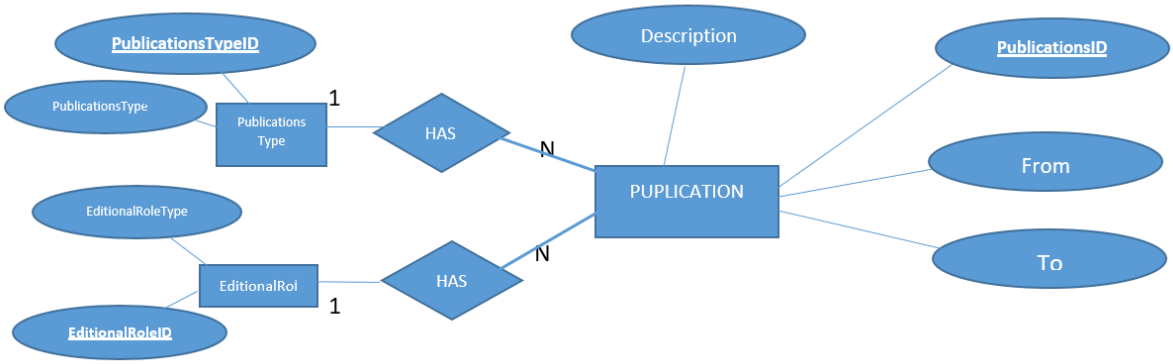

Figure 3.7 : ER Diagram Publications

DissertationsSupervised

Table 3.9 : DissertationsSupervised Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	DissertationsSupervisedID	Integer		رقم الاشراف	Primary key	
3	DissertationsSupervised Type	Integer		نوع الاشراف		DissertationsSupervisedType
4	Project title	Varchar	50	عنوان المشروع		
5	year	Integer		السنه		year
6	institute	Varchar	100	الجامعه		

DissertationsSupervisedType

Serial number	Field	Type	length	Caption	Key	Reference
1	DissertationsSupervisedTypeid	Integer		رقم الاشراف	Primary key	
2	DissertationsSupervisedType	Varchar	30	نوع الاشراف		

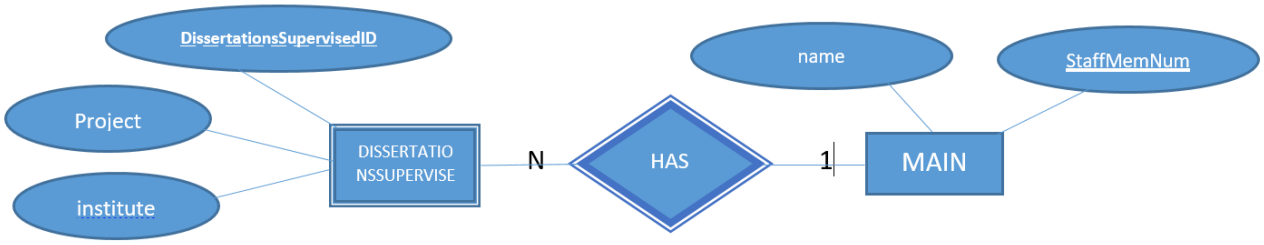

Figure 3.8 : the relation between MAIN and DISSERTATIONSSUPERVISED

Funding

Table 3.10 : Funding Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	fundingID	Integer		رقم التمويل	Primary key	
3	ResearchTitle	Varchar	100	عنوان البحث		
4	Sponser	Varchar	100	الداعم		
5	year	Integer		السنه		year
6	amount	Varchar		الكميه		
7	description	Varchar	100	الوصف		
8	FundingNo	Integer		رقم التمويل		

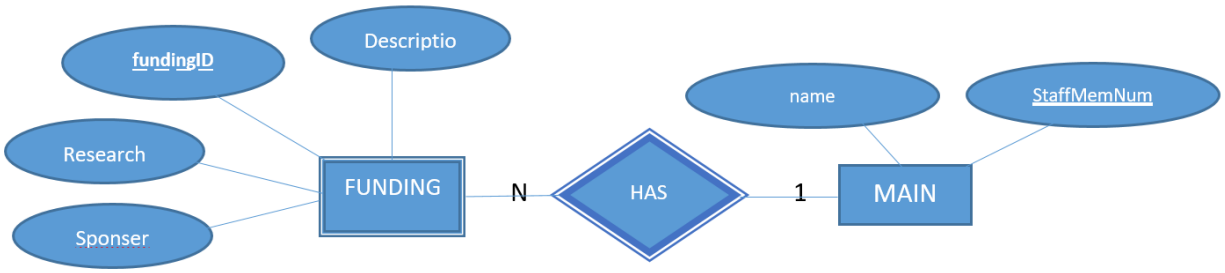

Figure 3.9: the relation between MAIN and FUNDING

PublicationsInReferredJournals

Table 3.11: PublicationsInReferredJournals Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	PuplishID	Integer		رقم التحضير	Primary key	
3	Journal	Varchar	30	المجله		
4	ArticleTitle	Varchar	30	عنون المقال		
5	authors	Varchar	100	المؤلف		
6	Volume	Integer		المجلد		
7	pages	Integer		الصفحه		
8	Year	Integer		السنه		Year
9	Indexer	Varchar	50	الجهة المفهرسة		

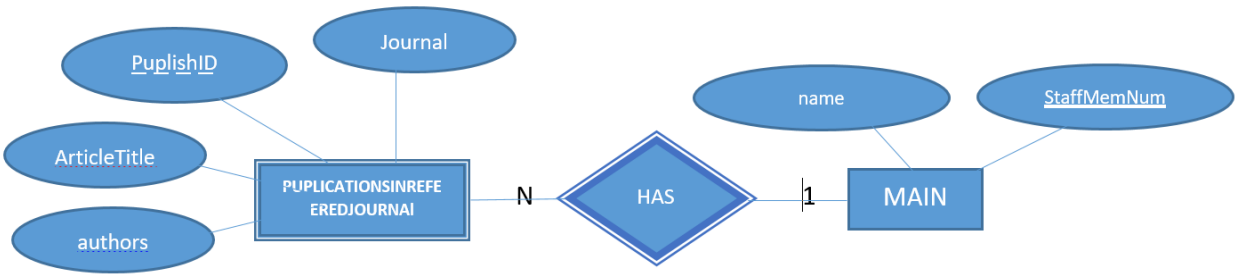

Figure 3.10 : the relation between MAIN and PUPLICATIONSINREFEEREDJOURNAl

ConferencePaperProceedings

Table 3.12: conferencePaperProceedings Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	ConferencePaperID	Integer		رقم المؤتمر	Primary key	
3	ConferenceType	Integer		نوع المؤتمر		ConferenceType
4	Conference	Varchar	80	المؤتمر		
5	papeTitle	Varchar	100	عنون الورقه		
6	authors	Varchar	100	المؤلف		
7	place	Varchar	50	المكان		
8	from	date		من تاريخ		
9	to	date		الى تاريخ		
10	Year	Integer		السنه		Year
11	Proceeding	Varchar	100	الاجرائات		

ConferenceType

Serial number	Field	Type	length	Caption	Key	Reference
1	conferenceTypeid	Integer		رقم المؤتمر	Primary key	
2	onferenceType	Varchar	50	المؤتمر		

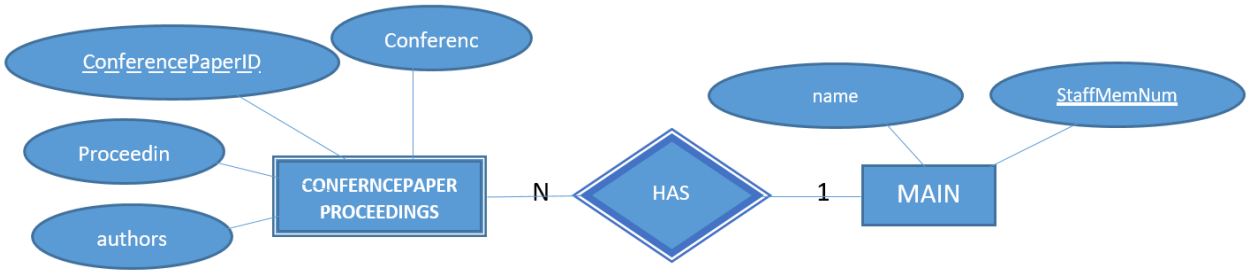

Figure 3.11 : the relation between MAIN and CONFERNCEPAPERPROCEEDINGS

TechnicalReports

Table 3.13: Technicalreports Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
1	TechnicalReportsID	Integer		رقم التقرير	Primary key	
2	title	Varchar	30	العنوان		
3	author	Varchar	100	المؤلف		
4	Organization	Varchar	100	المنظمه		
5	Year	Integer		السنه		Year

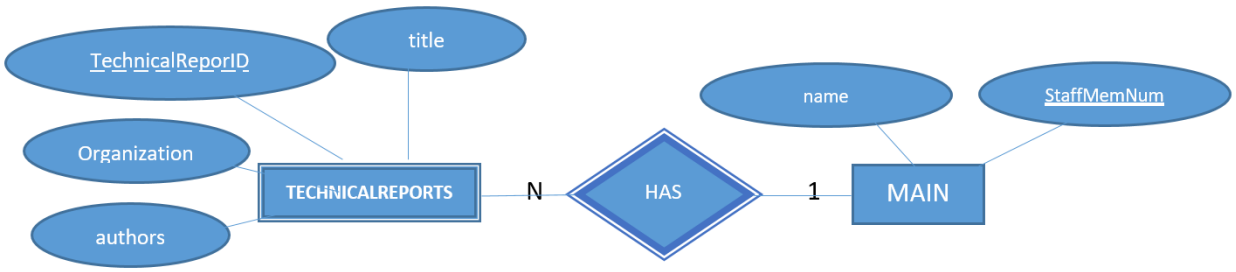

Figure 3.12 : the relation between MAIN and TECHNICALREPORTS

Books

Table 3.14: Books Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	BookID	Integer		رقم الكتاب	Primary key	
3	title	Varchar	30	العنوان		
4	author	Varchar	100	المؤلف		
5	Organization	Varchar	30	المنظمه		
6	Year	Integer		السنه		Year
7	Publisher	Varchar	100	الناشر		
8	ISBN	Varchar	100	ISBN		
9	chapters	Integer		الفصول		

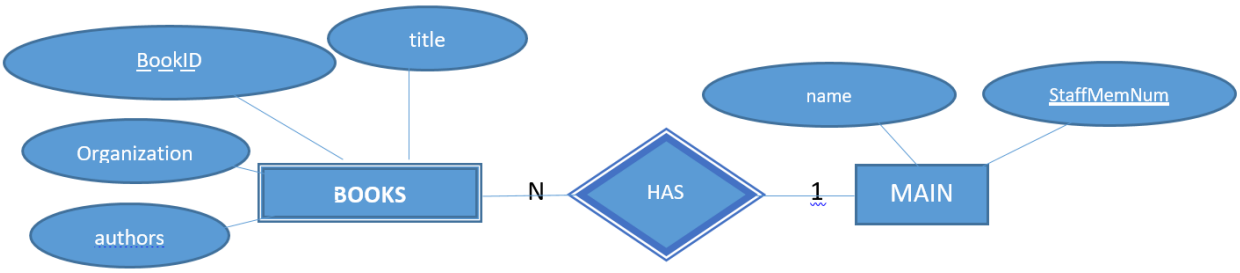

Figure 3.13 : the relation between MAIN and BOOKS

InvitedLecture

Table 3.15: InvitedLecture Table

Serial number	Field	Type	lenght	Caption	notes
1	StaffMemNum	Number	Integer	رقم العضو	Primary key
2	LectureID	Number	Int	رقم المحاضره	Primary key
3	title	Varchar	30	العنوان	
4	invier	Varchar	60	الداعى	
5	Organization	Varchar	30	المنظمه	
6	date	Varchar	30	التاريخ	

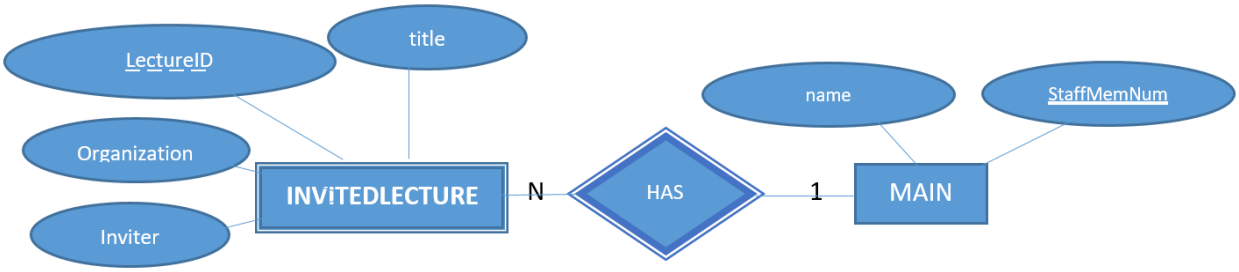

Figure 3.14 : the relation between MAIN and INVITEDLECTURE

ProfessionalAffiliationMembership

Table 3.16: ProfessionalAffiliationMembership Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	professionalaffiliationidID	Integer		رقم العضويه	Primary key	
3	society	Integer		المجتمع		society
4	from	Integer		من		

society

Serial number	Field	Type	length	Caption	Key	Reference
1	societyID	Integer		رقم المجتمعى	Primary key	
2	societyType	Varchar	100	المجتمع		

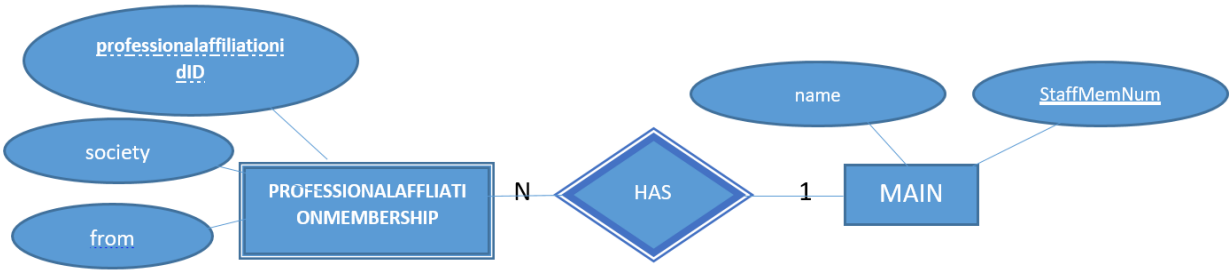

Figure 3.15 : the relation between MAIN and PROFESSIONALAFFLIATIONMEMBERSHIP

Services

Table 3.17: Services Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	ServiceID	Integer		رقم الخدمه	Primary key	
3	Services	Varchar	30	الخدمه		
4	Task	Varchar	100	تاسك		
5	ServicesScope	Integer		مدى الخدمه		ServicesScope
6	orgnization	Varchar	60	المنظمه		
7	From	Date		تاريخ		
8	To	Date		تاريخ		
9	description	Varchar	100	وصف		

ServicesScope

Serial number	Field	Type	length	Caption	Key	Reference
1	ServicesScopeID	Integer		رقم مدى الخدمه	Primary key	
2	ServicesScopeType	Varchar	100	مدى الخدمه		

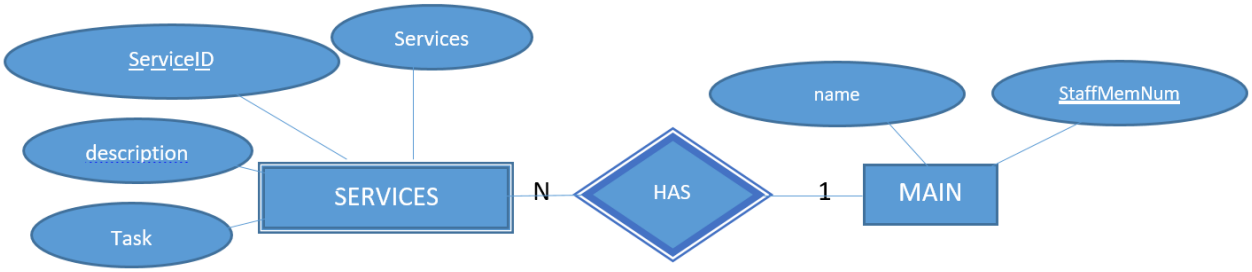

Figure 3.16 : the relation between MAIN and SERVICES

ProfessionalExperince

Table 3.18: ProfessionalExperince Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
1	ProfessionalExperianceID	Integer		رقم الخبره	Primary key	
2	From	Date		من تاريخ		
3	To	Date		الى تاريخ		
4	orgnization	Varchar	60	المنظمه		
5	address	Varchar	100	العنوان		
6	Country	Integer		الدوله		Country
7	occupation	Integer		الوظيفه		occupation
5	Description	Varchar	100	وصف		
6	ProfessionalExperinceType	Integer		نوع		

ProfessionalExperinceType

Serial number	Field	Type	length	Caption	Key	Reference
1	ProfessionalExperinceTypeID	Integer			Primary key	
2	ProfessionalExperinceType	Varchar	100			

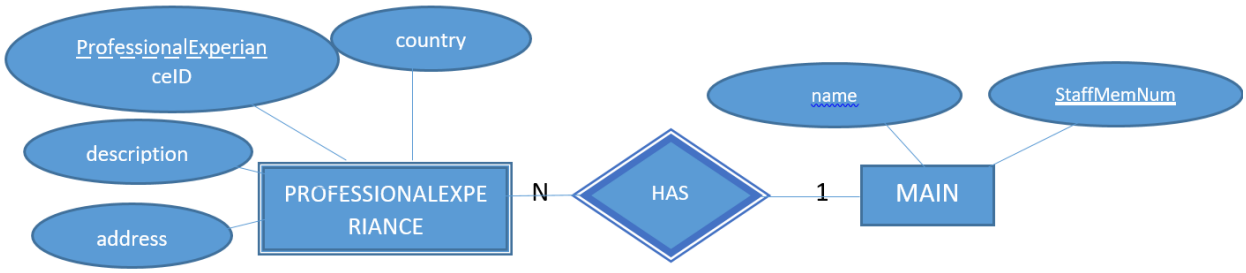

Figure 3.17 : the relation between MAIN and PROFESSIONALEXPERIANCE

levelDegree

Table 3.19: LevelDegree Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	levelDegreeid	Integer		رقم المستوى	Primary key	
3	title	Varchar	30	العنوان		
4	BriefOutlines	Varchar	50	مختصر		
5	levedegreeType	Integer		المستوى للدرجه		levedegreeType Refrence table Bsc msc Phd
6	EquivalentCourseCode	integer		كود		

levedegreeType

Serial number	Field	Type	lenght	Caption	notes
1	type id	Integer		رقم النوع	Primary key
2	type	Varchar	30	النوع	

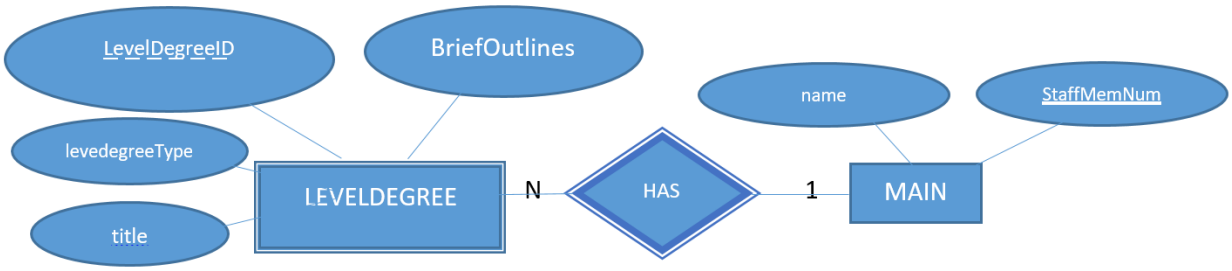

Figure 3.18 : the relation between MAIN and LEVELDEGREE

EventsAttended

Table 3.20: EventAttended Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	EventsAttendedID	Integer		رقم الحدث	Primary key	
3	EventsAttendedType	Integer		نوع الحدث		EventsAttendedType
4	Title	Varchar	50	العنوان		
5	Organization	Varchar	100	الجهة المنظمة		
6	Place	Varchar	100	المكان		
7	from	Integer		تاريخ		
8	to	Integer		تاريخ		
9	year	Integer		العام		year

EventsAttendedType

Serial number	Field	Type	lenght	Caption	notes
1	EventsAttendedTypeID	Integer			Primary key
2	EventsAttendedType	Varchar	30		

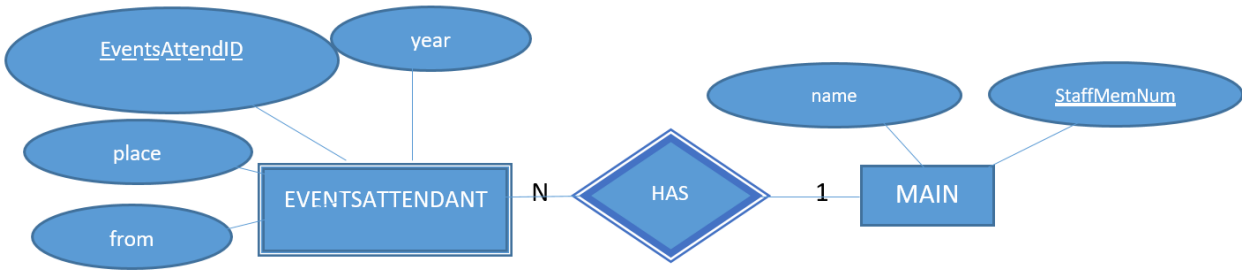

Figure 3.19 : the relation between MAIN and EVENTSATTENDANT

Referees

Table 3.21: Referees Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Number	Integer	رقم العضو	Primary key	
2	RefereeID	Number	Int		Primary key	
3	name	Varchar	30	الاسم		
4	Position	Varchar	50	الدرجة العلمية		
5	Affiliation	Varchar	50	المؤسسة		
6	Address	Varchar	50	العنوان		
7	Email	Varchar	50	الايميل		
8	ContactNumber	Number	int	رقم التليفون		

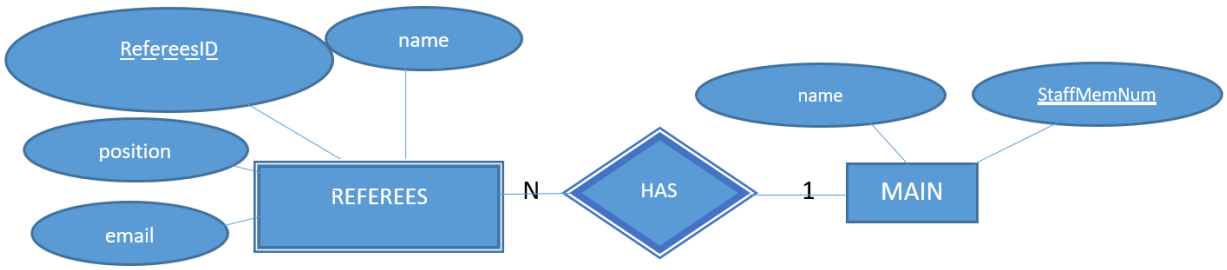

Figure 3.20 : the relation between MAIN and REFEREES

Assignments

Table 3.22: Assignments Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Number	Integer	رقم العضو	Primary key	
2	AssignmentsID	Number	Int		Primary key	
3	Assignmentstype	Varchar	40	نوع التكليف (رئيس قسم علمي، رئيس وحدة، مشرف، عضو وحدة، عضو لجنة، سكرتير إلخ...)		
4	AssignmentsName	Varchar	50	اسم التكليف (علوم الحاسب، القياس والتقويم ، الجودة، ملتقى علمي....إلخ)		
5	StartDate	Number	Integer	تاريخ بدء التكليف (بالهجري)		
6	EndDate	Number	Integer	التاريخ المتوقع لنهاية التكليف إن وجد		
7	Entity	Varchar	50	الجهة الملكفة (عمادة الكلية، القسم العلمي ..إلخ)		

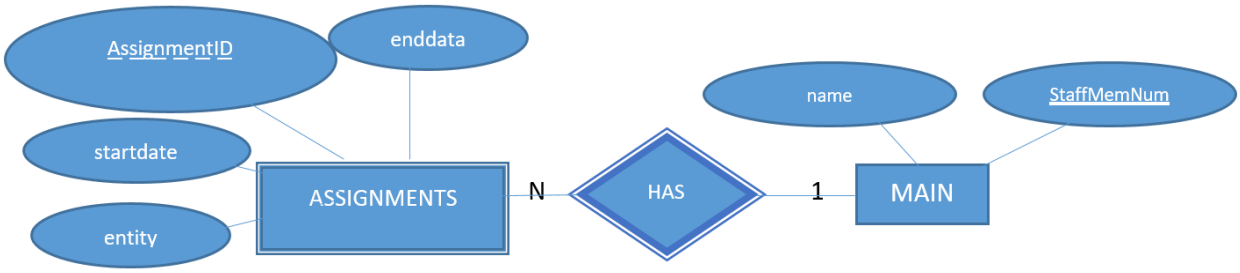

Figure 3.21 : the relation between MAIN and ASSIGNMENTS

ScholarshipDetails

Table 3.23: ScholarshipsDetails Table

Serial number	Field	Type	lenght	Caption	Key	Reference
1	StaffMemNum	Integer		رقم العضو	Primary key	
2	ScholarshipID	Integer			Primary key	
3	ScholarshipDegree	integer				ScholarshipDegree
4	ScholarshipCountry	Varchar	40	دولة الابتعاث		
5	GeneralSpecialization	Integer		التخصص العام		GeneralSpecialization
6	SpecificSpecialization	Integer		التخصص الدقيق		SpecificSpecialization
7	StartDate	Integer		تاريخ بداية البعثة		
8	EndDate	Integer		التاريخ المتوقع لنهاية البعثة		
9	ScholarshipLetterNumber	Integer		رقم خطاب الابتعاث		
10	Case	Varchar	60	الحاله ابتعاث جديد / تحويل / تمديد		Case

Case

Serial number	Field	Type	lenght	Caption	notes
1	caseID	Integer			Primary key
2	Case	Varchar	30		

Schoolardegree

Serial number	Field	Type	lenght	Caption	notes
1	schoolardegreeID	Integer			Primary key
2	schoolardegree	Varchar	30		

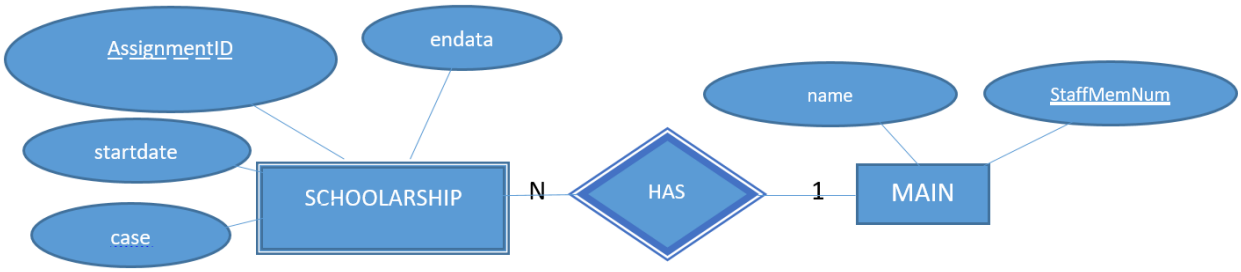

Figure 3.22 : the relation between MAIN and SCHOOLARSHIP

In order to build this system or program, we will use SQL database to create our own database.

3.5 System Flow Chart

The System flow Chart diagram (DFD) is a way of representing a flow of a data of a process or a system (usually an information system). The system flowchart also provides information about the outputs and inputs of each entity and the process itself.

At first, the user can log in to the system by using the private account in it, and if he is not able to log in, he registers a new account and is approved by the administrator.

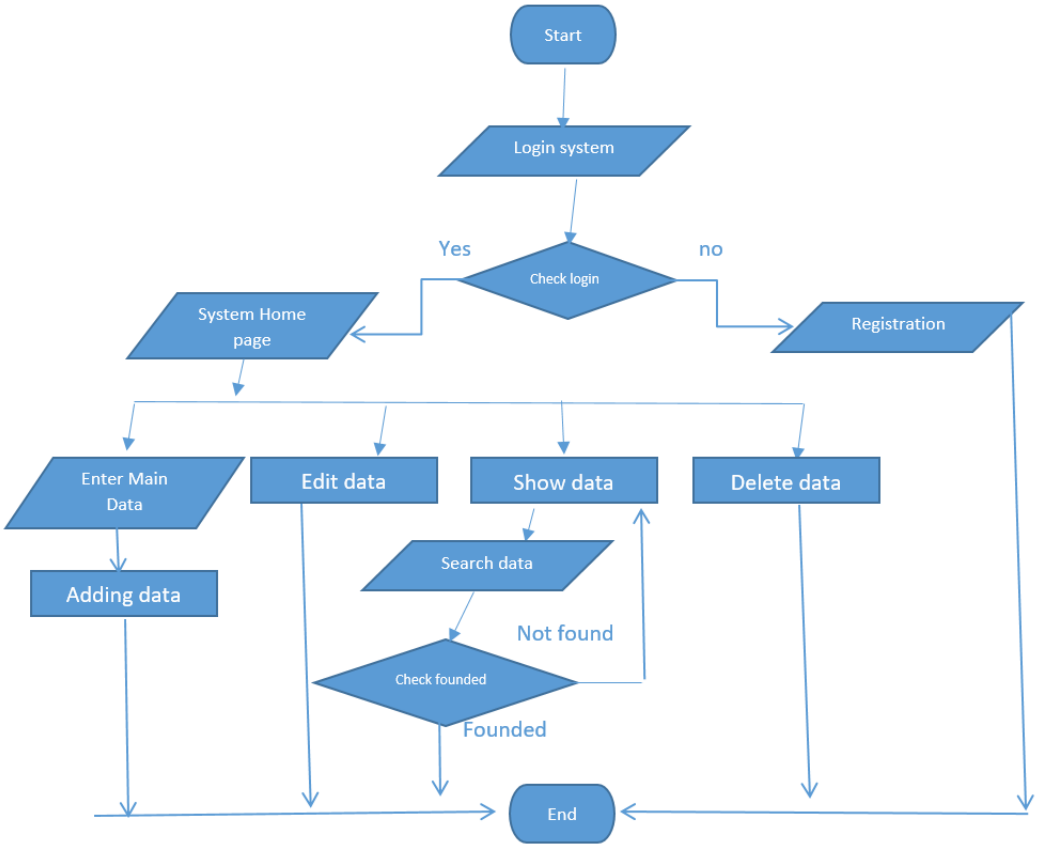

Figure 3.23: Flow Chart Diagram 1

After the login process, present the main screen of the program, and this screen displays some elements, such as adding data, and that needs to be added by the basic data, as well as the data modification element or the data deletion component, displaying data and searching for data.

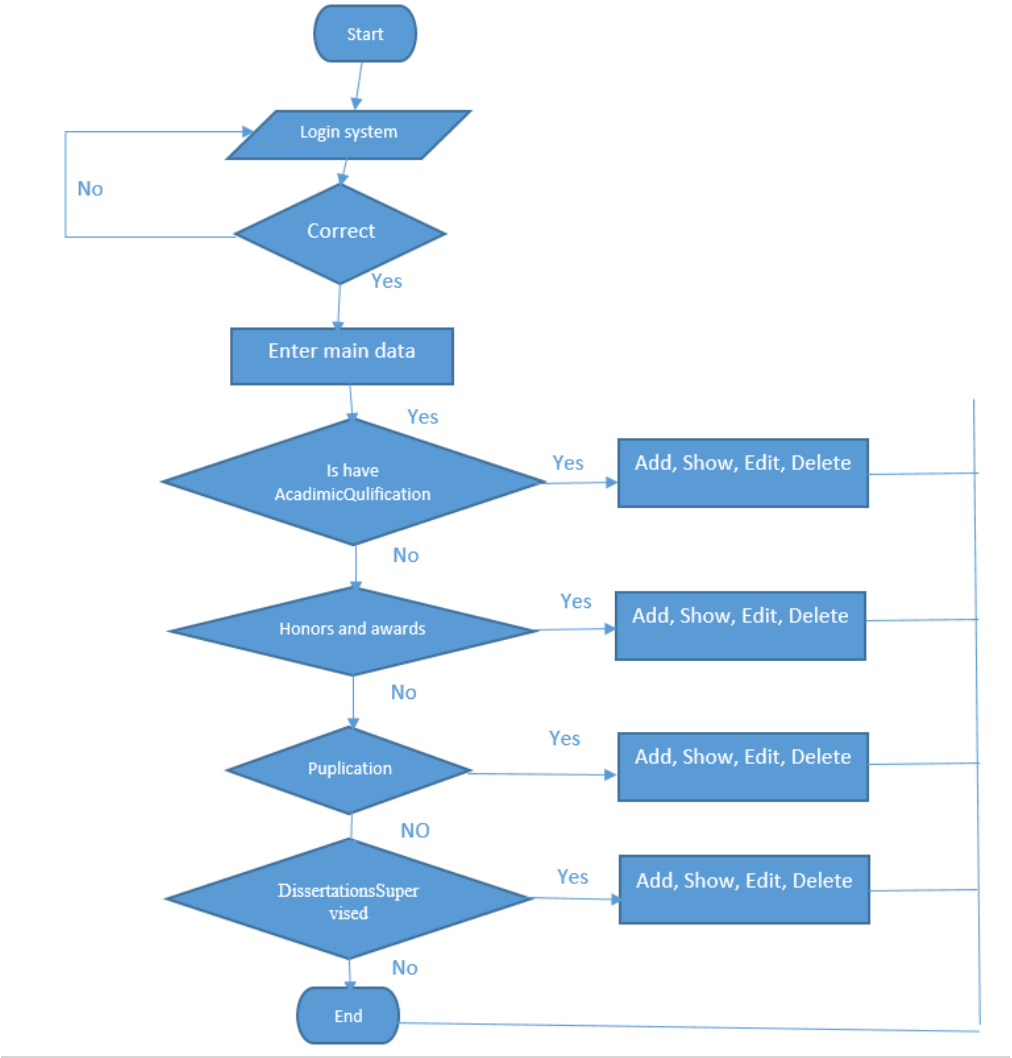

Figure 3.24 : Flow Chart Diagram 2

After the login process, present the main screen of the program, and this screen have element (Add data), the user should add main data after this if have any of this data (Academic Qualification, Honors and Awards, Publications, Dissertations Supervise) can add it into the system.

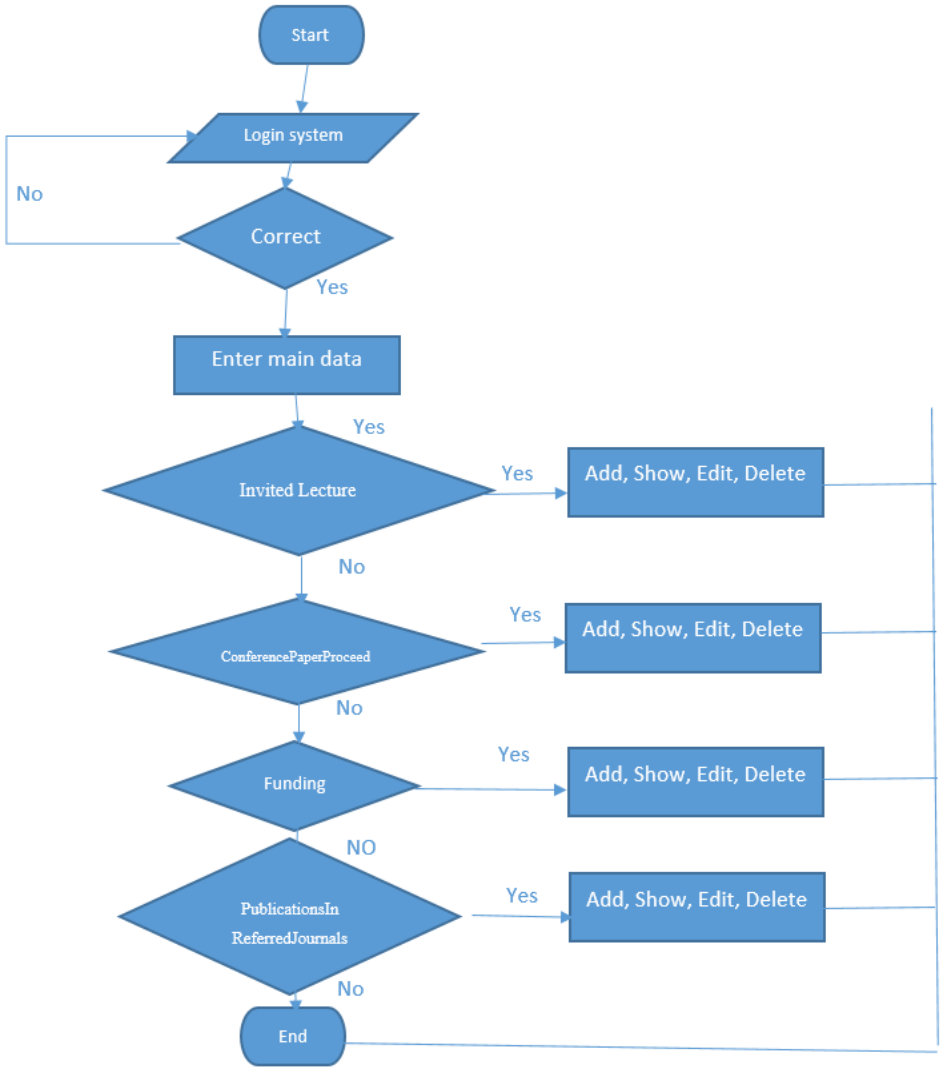

Figure 3.25 : Flow Chart Diagram 3

After add main data if have any of this data (Funding, Publications in Referred Journals, Conference Paper Proceedings Invited Lecture) you can add it.

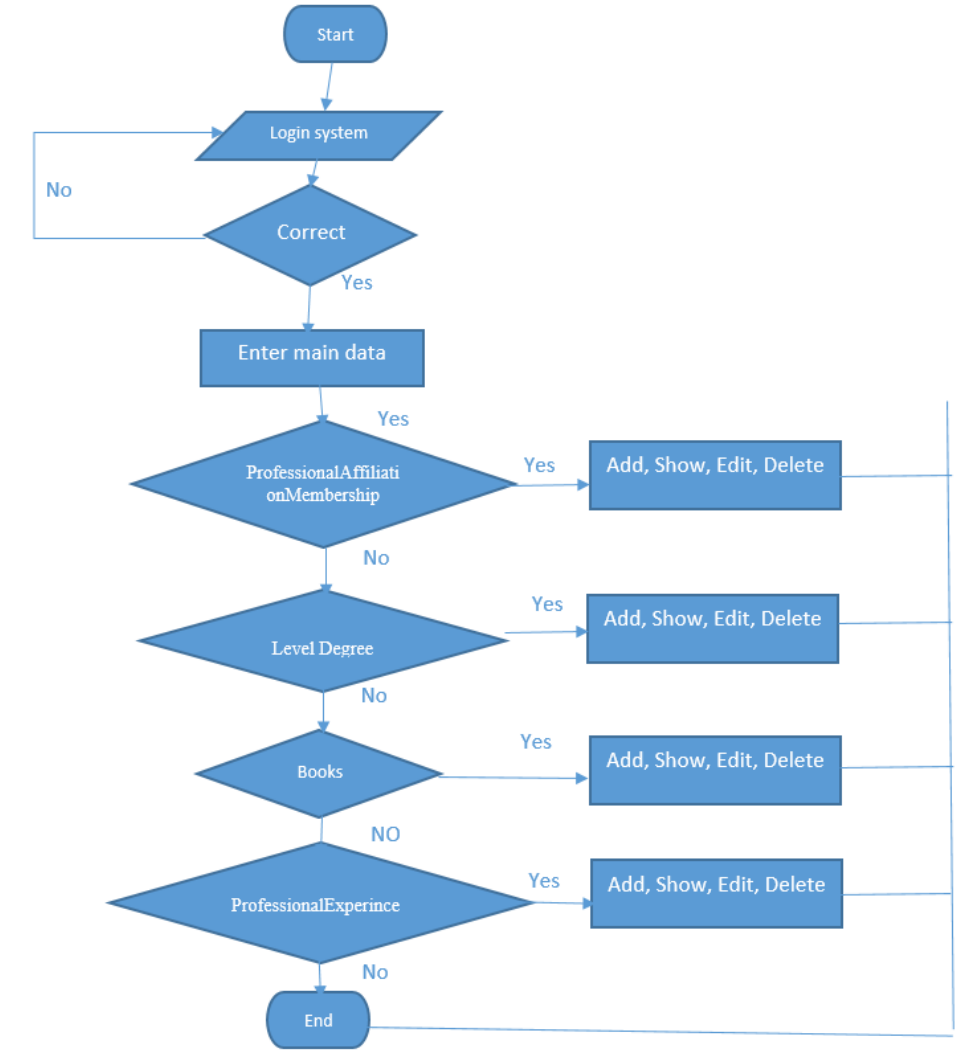

Figure 3.26 : Flow Chart Diagram 4

After add main data if have any of this data (Books, Professional Affiliation Membership, Professional Experience , Level Degree) you can add it.

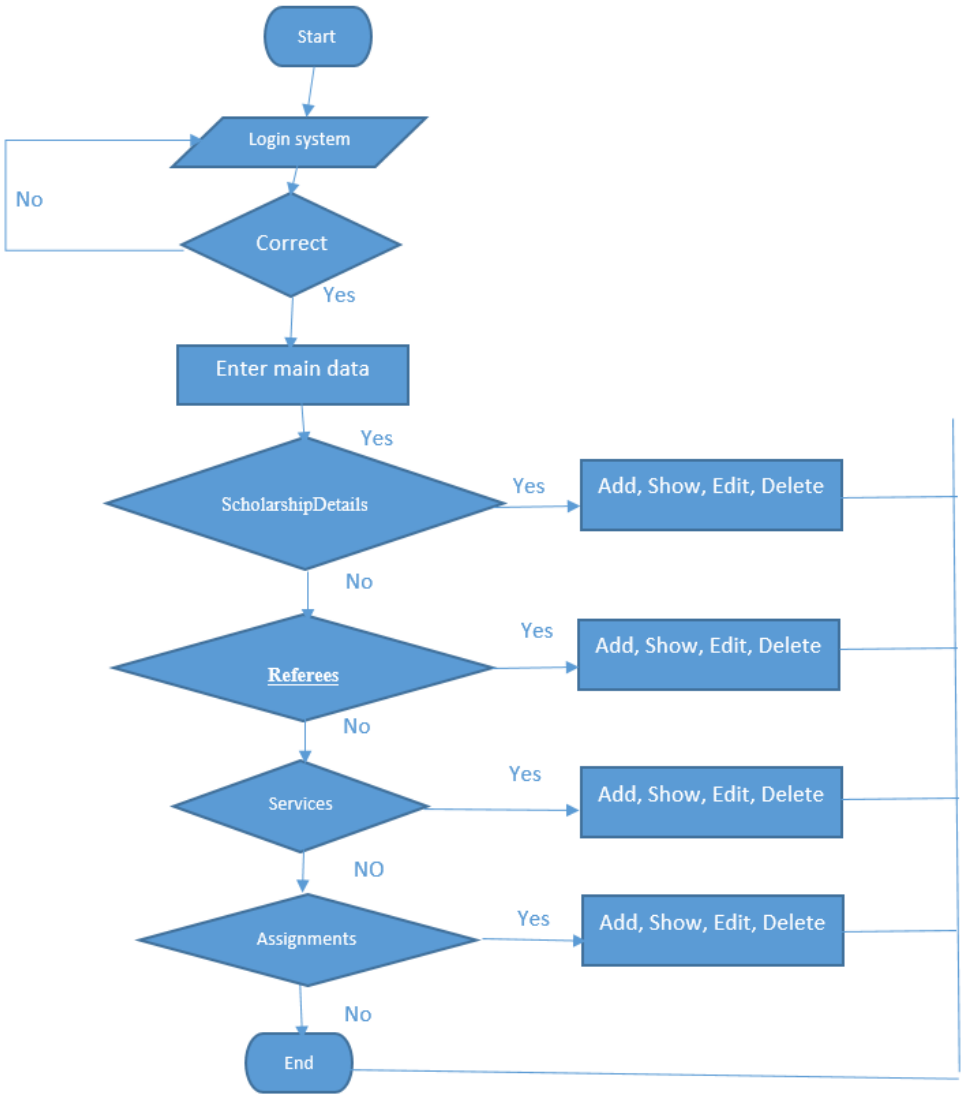

Figure 3.27 : Flow Chart Diagram 5

After add main data if have any of this data (scholarship details , referees services, assignments) you can add it.

Chapter 4

CONCLUSION

In this project, we have talked about the development that is taking place in the last period at the University of Tabuk and the College of Computers and Information Technology. We show the importance of the Statistics and Information Unit and its role in supporting decisions to top management. We presented the many problems facing the current system which is completely manual in collecting data and in generating reports and still use the traditional e-mail method, which consumes a lot of effort and waste of time. The Current system suffers from many problems, including the recording of data and it is possible to make a lot of errors, duplication of data. This increases the size of data, which makes it difficult to search for data and difficult to retrieve data.

The previous reasons encourage ~~prompted~~ us to think about finding a solution, which is to computeize that system into a web-based form that solves all these problems We hope that the process of recording data becomes easy and the process of data retrieval becomes also simple and does not consume time and effort.

Therefore, we analyze the project using Use Case Diagrams to show the relation between user and system and Entity Relationship Diagram (EDR) to show relation between entities. We will also show the data dictionary for all entities, Class Diagrams and the System Flowchart (SF). After we designed the ERD of the proposed system, we map the entities, attributes and relationships to tables with their attributes types and length. During the mapping we put what we know about normalization in database.

4.1 Future Work

In the future, we will develop the complete system to achieve the complete objectives of the project. This will help the staff members and the top management at the Faculty of Computers and Information Technology, University of Tabuk

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