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Department of computer science



CONTINUING EDUCATION SYSTEM

A project

*Submitted to the department of computer science, college of
science, university of al-qadisiyah in partial fulfillment of the
requirement for the degree of B.Sc. in computer science*

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وزارة التعليم العالي والبحث العلمي

جامعة القادسية

كلية علوم الحاسوب والرياضيات

قسم علوم الحاسوب

CONTINUING EDUCATION SYSTEM

بحث مقدم

الى مجلس قسم الحاسوب في كلية علوم الحاسوب وتكنولوجيا المعلومات / جامعة
القادسية وهو جزء من متطلبات نيل درجة البكالوريوس في علوم الحاسوب

الاعضاء

غيداء فاهم

ضحى عطية

زهراء طاغوت

الاشراف

م.م. الاء عبد مسلم

٢٠١٧

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

((أَفَمَنْ كَانَ مُؤْمِنًا كَمَنْ كَانَ فَاسِقًا لَا
يَسْتَوُونَ ﴿١٨﴾ أَمَّا الَّذِينَ آمَنُوا وَعَمِلُوا
الصَّالِحَاتِ فَلَهُمْ جَنَّاتُ الْمَأْوَىٰ نُزُلًا
بِمَا كَانُوا يَعْمَلُونَ ﴿١٩﴾))

(سورة السجدة - الآية ١٨، ١٩)

شكر وتقدير

الحمد لله رب العالمين والصلاة والسلام على رسول الله (صلى الله عليه
واله وسلم) وبعد . . . فإن اللسان ليعجز عن أن يلهج بالشكر
والعرفان والامتنان إلى أصحاب الأيادي البيضاء الذين أسدوا لنا العون
والتوجيه والنصح والإرشاد والتعليم ، فيا مرسل العلم ودعاة الخلق
الرفيع لكم منا الوفاء إجلالاً وهيبَةً ، فإذا نطقنا ففي القلب لكم
إكبار وثناء ، وإذا كتبنا في السطور لكم دعاء وشكر
فإلى كل من أبدع وعلم ونصح ووهب حياته لرفعة العلم ومكن
له في النفوس إليكم أيها الإجلاء مشرفاً (الست الاء عبد مسلم)
وأساتذة ومزملاء وعاملين ومخلصين تقدم لكم كل تقدير وثناء .

الاهداء

إلى من هو مخرجي في شدتي ويجيني عند دعوتي ربي

إلى من هو قدوتي في ديني وأملي ومرجائي نبي محمد

إلى من هو معتقدي وشفيعي في آخرتي أميري علي

إلى من جعل حياته لي شمعاً وأذاب سنين عمره لينسبها دربي أبي

إلى من سهرت الليالي وأسبلت مدامعها فوق وجنتي أمي

إلى من كان لي رمز الطموح والتفوق أساتذتي

إلى من هم ذخيري وسندي في شدتي إخوتي

إلى رفيق حياتي الدائم نروحي

إلى من حفظوا أسرارتي وكانوا أقرب لي من قلبي أصدقائي

وأخيراً إلى من لهم الفضل علينا من أبطال قواتنا الأمنية وحشدنا الشعبي المقدس .

ABSTRACT

Our project is to design and implement a system of continuing education of the consultative office of information systems and computers of computer center at the university of AL-Qadisiyah,

The project aims to solve the problem of sorting all the information related to the system of continuing education ,which includes details of each training course like,name of training course ,cost ,period, the beginning data ,and also details of the participants in these courses ,staff training, as well as print reports which include forms the presence of the participants in each course and the result show with the top three students in each course.

SUPERVSIOR CERTIFICATION

We certify that thesis " CONTINUING EDUCATIONSYSTEM" was prepared under my supervision at the to computer science department to science college as a partial fulfillment of the requirement for the degree of B.S.C of science in computer science.

Signature:

Name:M.s.c.Alaa Abid Muslam Abid Ali.

Data: 17 /5 / 2017

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CHAPTER ONE

DATABASE

1. Introduction

In the recent past, a manager of almost any small organization was able to keep track of necessary data by using a manual file system. Such a file system was traditionally composed of a collection of file folders; each properly tagged and kept in a filing cabinet [1].

Organization of the data within the file folders was determined by the data's expected use [1].

Ideally, the content of each file folders where logically related. For example ,a file folder in a doctor's office might contain patient data, one folder for each patient. All the data in that file older described only that particular patient's medical history [1].

As long as a data collection relatively small and an organization's managers had few reporting requirements, the manual system served its role well as a data repository. However, as organizations grew and as reporting requirements became more complex, keeping track of data in a manual file system became more difficult. In fact, finding and using data in growing collection of file folders became such a time-consuming and cumbersome task that it became less and less likely that such data would ever generate useful information [1].

Unfortunately, report generation from a manual file system can be slow and cumbersome. In fact, some business managers faced government-imposed reporting requirements that require weeks of intensive effort each quarter, even when a well-designed manual system was used. Consequently, the pressure built design a computer based system that would track and produce required reports [1].

The problems inherent in file systems make using a database system very desirably. Unlikely the file system, with its many separate an unrelated files, the database consists of logically related data stored in a single data repository. Therefore; the database represents a change in the way end user data are stored, accessed, and managed. The database management system (DBMS) provides numerous advantages over file system management, by making it possible to eliminate most of the file system's data inconsistency, data dependency, and structural dependency problems[1].

Remember that the DBMS is just one of several crucial components of a database system [1].

Perhaps it is even appropriate to refer to the DBMS as the database system's heart. However, just as it takes more than a heart alone to make a human being function, it takes more than a DBMS to make a database system function [1].

Database is a collection of data or information that can be stored, sorted, organized and retrieved. Your local telephone book, your Rolodex file, and the card catalog at your local library are all examples of a database. Traditionally databases are organized by fields, records, and files tables[1].

A is single piece of information; a record is a one complete set of fields; a file is a collection of records. For example, a telephone book is analogous to a file. It contains a list of records, each of which consists of three fields: name, address, and telephone number [1].

To access information form a database, you need a database management system (DBMS). This is a collection of programs that enables you to enter, organize, and select data in a database [1].

1.2 Database management system (DBMS):

DBMS is a collection of programs that manages the database structure a controls access to the data stored in the database. The DBMS makes its possible to share the data in the database among multiple application or users. Because the data are the crucial raw material from which information is derived, there are many reasons why DBMSs are important in our information-based [1].

The goal of a DBMS is to provide an environment that is both convenient and efficient to use in [1]:

- Retrieving information from the database.
- Storing information into database.

In effect, the DBMS serves as the intermediary between the user and the database by translating user requests into the complex code required to fulfill those requests. The DBMS hides much of the database's internal complexity from the application

programs that use the database. The application program might be written by a programmer, using a programming language such as COBOL, Microsoft Access, and Oracle or it might be created through a DBMS utility program [1].

1.3 DBMS Functions:

A DBMS perform several important functions guarantee the integrity consistency of the data in the database. Most of these functions are transparent to end users. These functions include [1]:

- **Data Dictionary Management:** the DBMS requires that definitions of the data elements and their relationship (metadata: data about data) be stored in a data dictionary.
- **Data Storage Management:** the DBMS creates the complex structure required for the data storage.
- **Data Transformation and presentation:** the DBMS transforms entered to conform the data structures are required to store the data.
- **Security Management:** the DBMS creates a security system that enforces user security and data privacy within the database. Security rules determine which users can access the database, which data item each user may access, and which data operations that user may perform.
- **Multi-User Access Control:** the DBMS creates the complex structure that allows multi-user access to the data. In order to provide data integrity and data consistency, the DBMS uses sophisticated algorithms to ensure that multiple user can access to the database concurrently and still guarantee the integrity of the database.
- **Back and Recovery Management:** the DBMS provides backup and data recovery procedures to ensure data and integrity.
- **Data Integrate Management:** the DBMS prompts and enforce integrity rules to eliminate data integrate problems, thus minimizing data redundancy and maximizing data consistency.

- **Database Access Language (DDL and DML) and application programming interface:** the DBMS provides data access via a query language. A query language is a nonprocedural language; which contains two components: a Data Definition Language and a Data Manipulation Language (DML).

- **Database Communication Interfaces:** Current-generation DBMSs provide special communications routines designed to allow the database to accept end user request within a computer network environment.

1.4 Database Models:

A **database model** is a collection of logical construct used to represent the data structure and the data relationships found within the database. Database models can be grouped into two categories: **Conceptual Models** and **implementation models** [1].

1.4.1 Conceptual Models:

Use three types of relationship to describe association among data: 1: M, M: N, and 1:1 for them, respectively. (Although the M: N notation is a standard label for the many-to-many relationship, the label M: M may also be used.). The following examples illustrate the distinction among the three [1]:

- **One-to-many relationship:** Each record in a table is related to many records in another table. For example: a painter paints many different

painting, but each one of them is painted by only that painter. Thus the painter (the “one”) is related to the paintings (the “many”).

therefore; database designers label the relationship “PIANTER paints PAINTING” as 1: M. similarly, a costumer account (the “one”) might contain many invoices, but those invoices (the “many”) are related to only a single costumer account. The “CUSTOMER generates INVOICE” relationship would also label 1: M.

- **Many-to-many relationship:** many records in table are related to many records in another table. for example, Student can take many Course, and each course can be taken by many student, thus yielding the M:N relationship label for the relationship expressedBy “STUDENT takes COURSE.”

- **One-to-one relationship:** each record in a table is related to one record in another table. Dean of the collage is related with collage, each collage has one Dean and each Dean is managed one Collage.

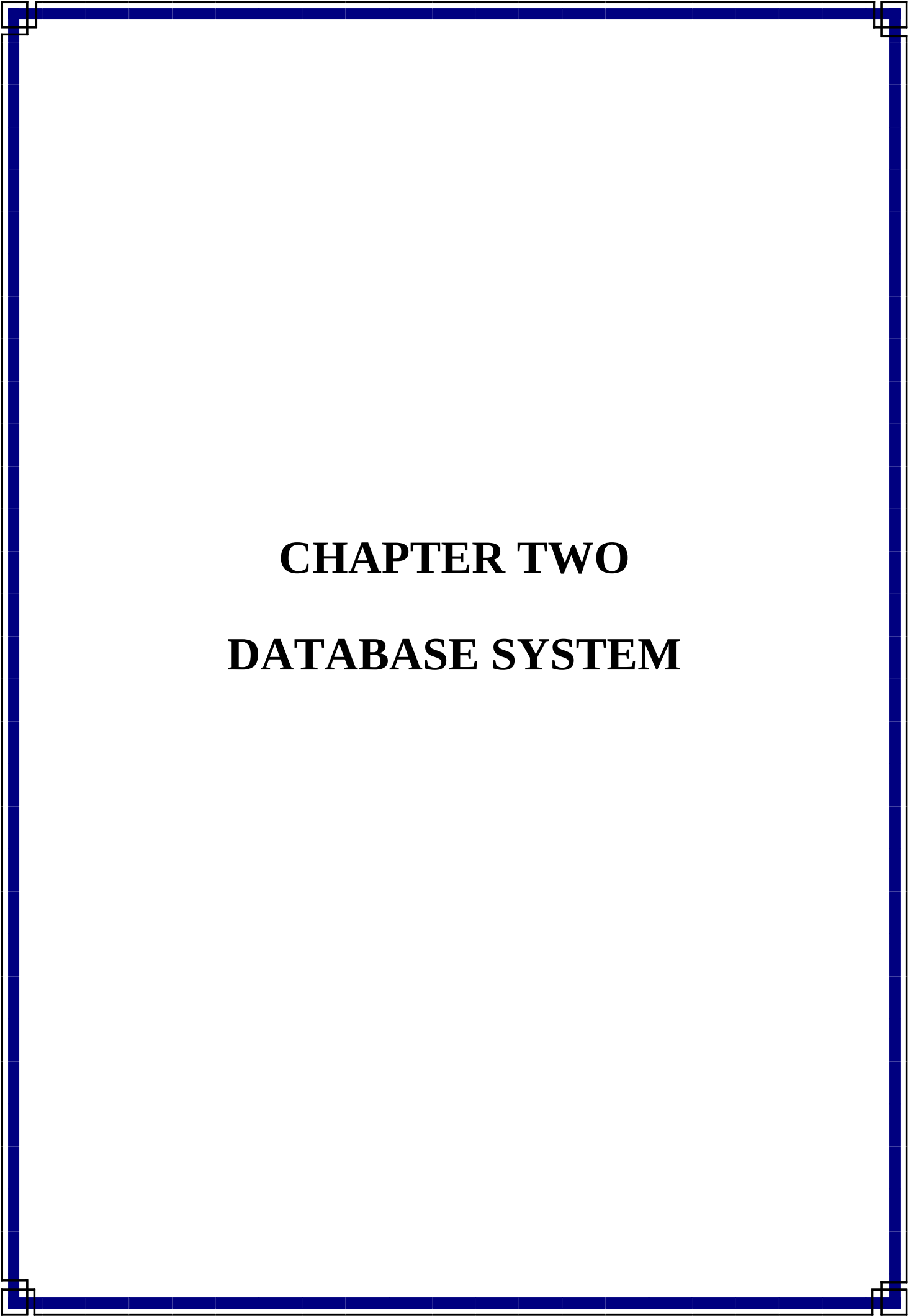
As seen this relation benefits, but in this project found that making this relationship between tables will add overhead to the system. Therefore; this relationship is not used in this project.

1.4.2 implementation module:

Places the emphasis on how the data are represented in the database or on how the data structures are implemented to represent what is modeled. Implementation models include the hierarchical database model, the network database model, the relational database model, and the object-oriented database model [1].

In this project the module used is the relational database model, because this model provides the following basic structure [1]:

- The relational database model is implemented through a very sophisticated relational database management system (RDBMS). The RDBMS performs the same basic function provided by the hierarchical and network DBMS system plus a host of other functions that make the relational database module easier to understand and implement.
- The data and relationship are represented by a collection of tables.
- Relational model does not use pointer or links but relates records by the value that contains (P.K., F.K.)
- Each table in matrix consisting of a series of row/column intersection. Tables, also called relations, are related to each other by sharing a common entry characteristic.
- Although the tables are completely independent of one another, we can easily connect the data between tables. The relational model thus provides a minimum level of controlled redundancy to eliminate most of the redundancies commonly found in file systems.

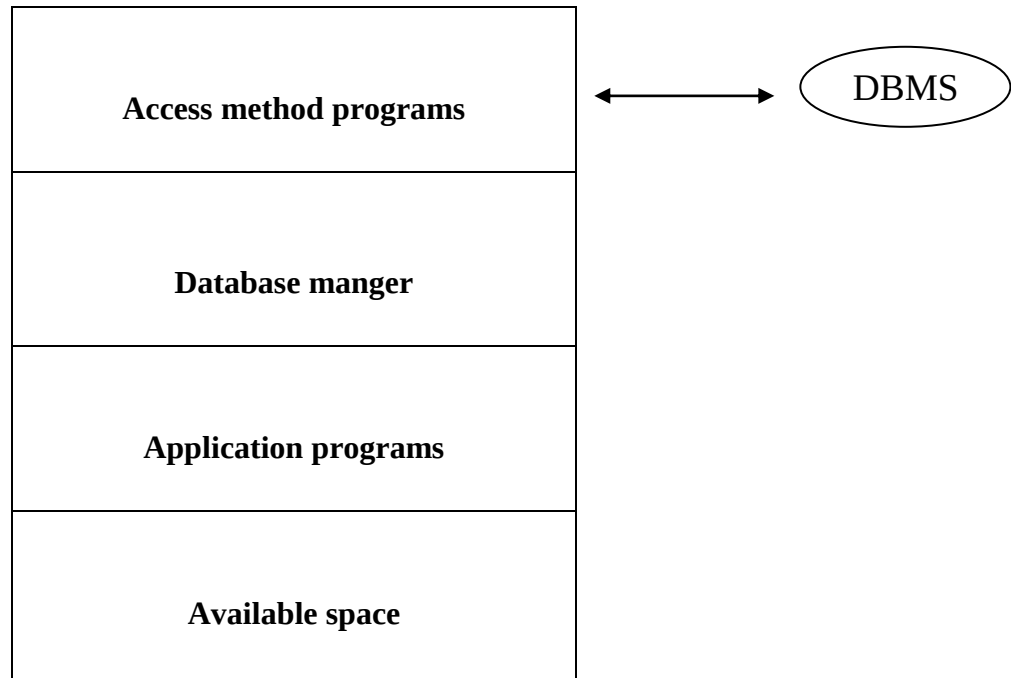


CHAPTER TWO

DATABASE SYSTEM

2.1 Database system:

Is basically a communized record keeping system that is a system whose overall purpose is to maintain information and to take that information available on demand



FIG(1):SIMPLIFIED STRUCTURE OF DATABASE

The benefit of the database system manger (DBMS) appear when multitask processing exist [2].

2.2 Features of DBMS :-

- Store, retrieve, and update data.
- Provide integrity services to enforce database control.
- Provide a user accessible catalog of data description.
- Control concurrent processing.
- Support logical transaction.
- Recover from failure.
- Provide security facilities.
- Interface with communication control programs.
- Provide utility service.

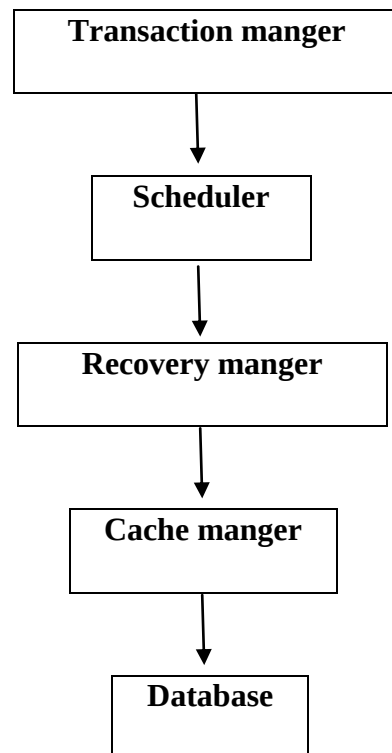


FIG (2):SHOWS THE INTERNAL STRUCTURE OFA DBS.

in order to study a concurrent control and recovery, we need to suggest model of the internal structure of database system as shown above. Our model, a database system DBS consist of modules [2]:

- Transaction manager(TM): it receives transaction operations and forwards them to the scheduler. The TM may also perform other functions, easily for a distributed database system.

- Scheduler: it is a program or a collection of programs that controls a current execution of transactions.

- Recovery manager: it is responsible of detecting failures and restore to the database to a state that existed prior to the occurrence of the failure.

- Cache manager: it operates directly on the database and manages the portion of the database that is kept in volatile storage.

- Transactions: is a program UNIT that access and possibly updates various database items. The execution of a transaction preserves the consistency of the database.

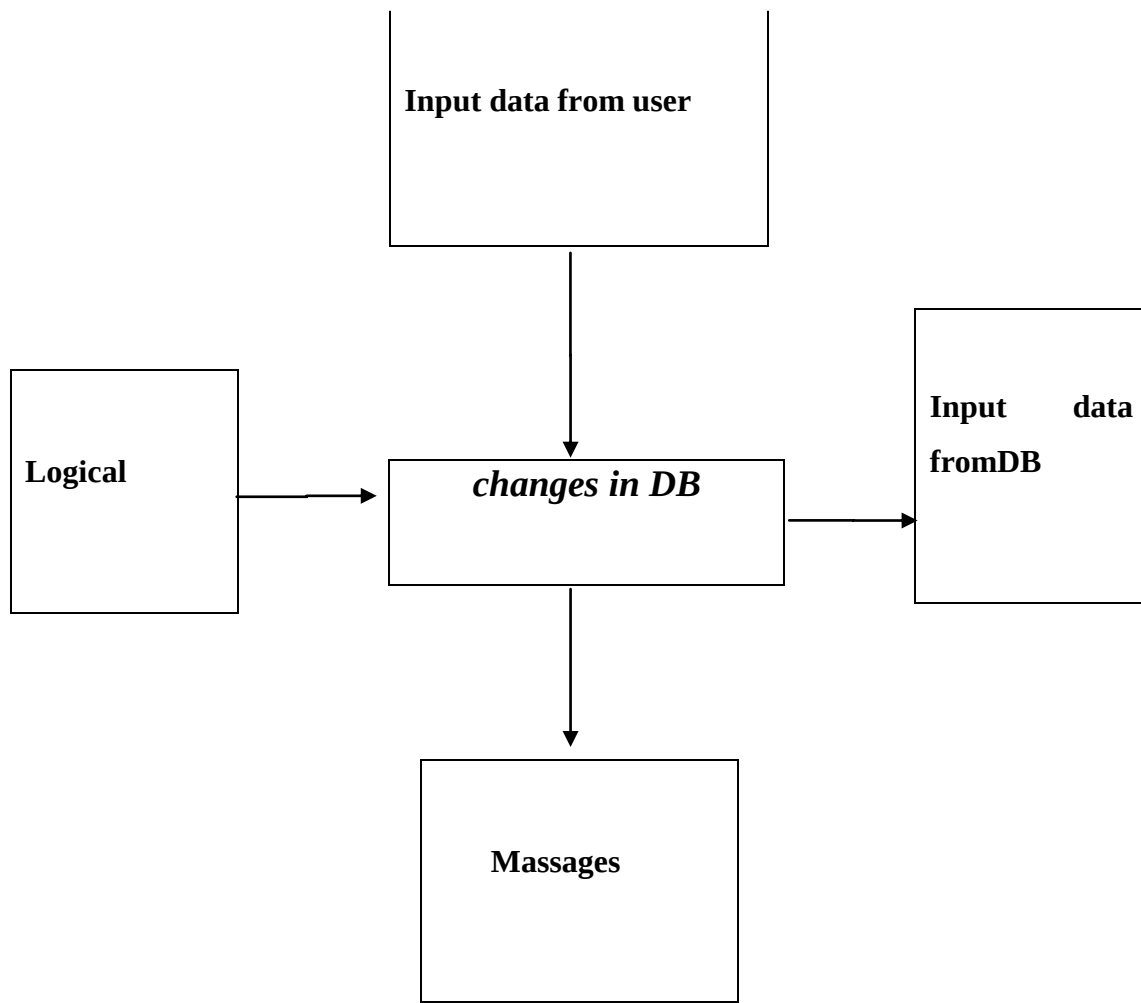
In order to preserve the consistency, a transaction must be atomic. Therefore the goal of concurrency control and recovery is to ensure that transactions execute atomically, which means that [2]:

- Each transaction access a shared data without interfering with other transactions.

- If a transaction terminates normally then all of its effects are made permanent, otherwise, it has no effect at all, therefore; there are two types of transaction:

- aborted transaction: its effects on RAM only.

- committed: the changes are saved in DB (on hard disc).



FIG(3):SHOWS STRUCTURE OF DBMS

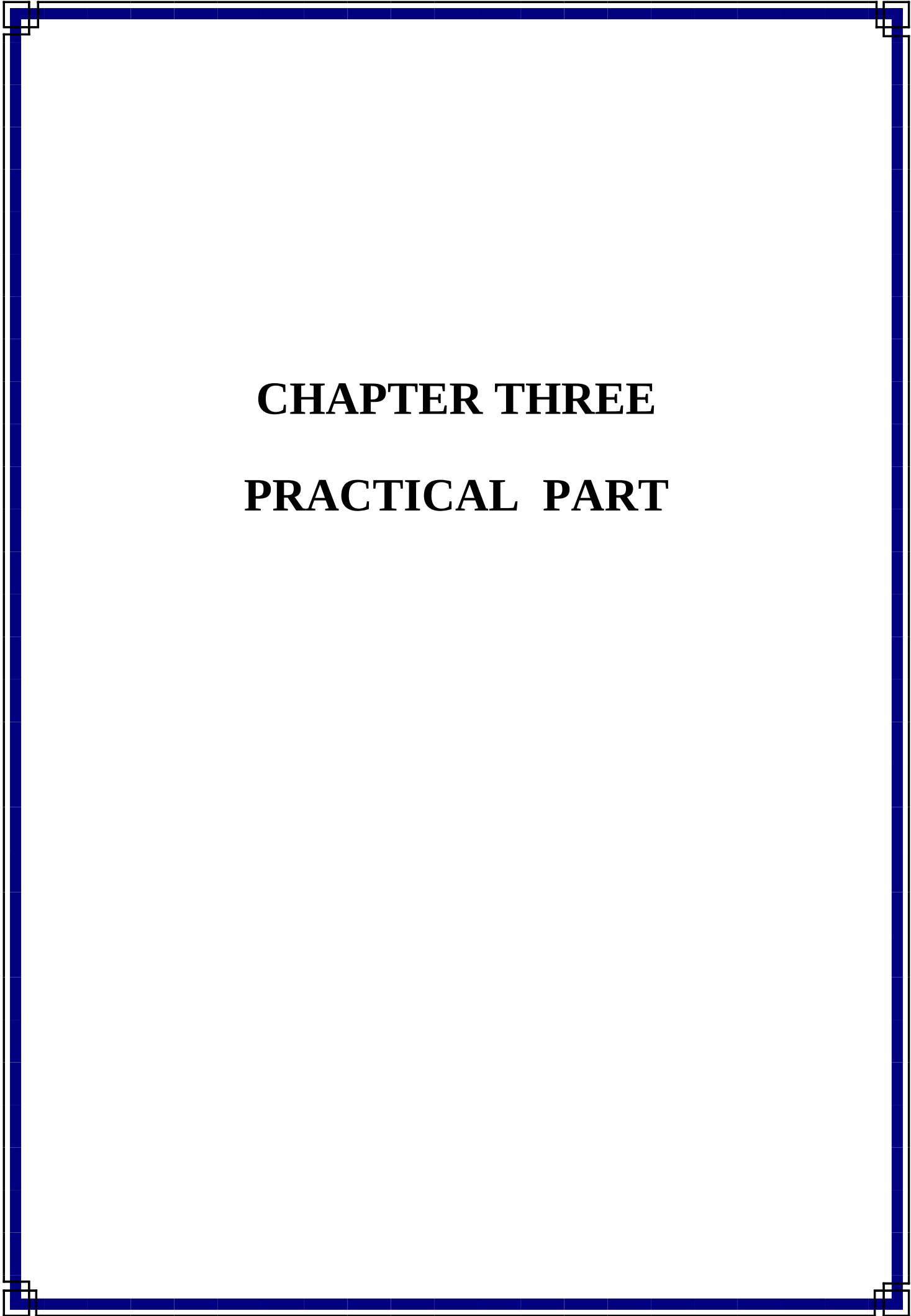
2.3 Properties of transaction :

- Atomicity: the end result of running transaction must be the same as when each transaction is an atomic action. An action is said to be atomic if it is either done completely or not at all. Thus if a transaction consists of several steps, the end result must be as if either all or none of these steps are carried out[2].
- Consistency: the transaction transforms the database from one consistency state to another. A consistency state is one that results from the execution of some given sequence of transactions[2]

- Isolation: the actions of a transaction are not visible to any other transaction until and unless that transaction has committed.

- Durability: the actions of a transaction on database (upon committed) are permanent.

Collectively, these are called the ACID properties.

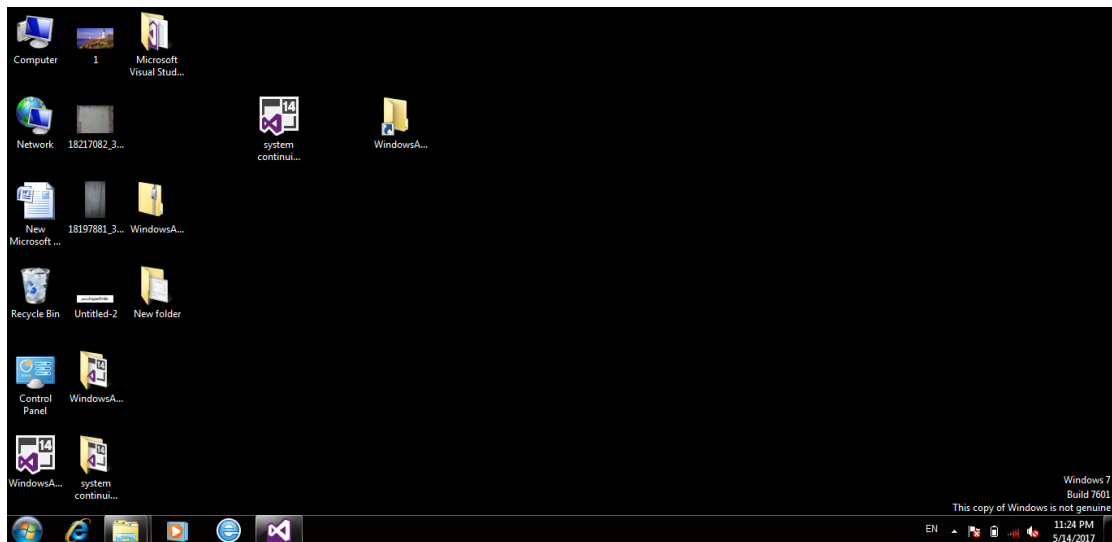


CHAPTER THREE

PRACTICAL PART

In this chapter, we review the composition and the introduction of interfaces. A specific information table was created using (visual studio 2015) as shown in the figures below.

1-DESKTOP INTERFACE



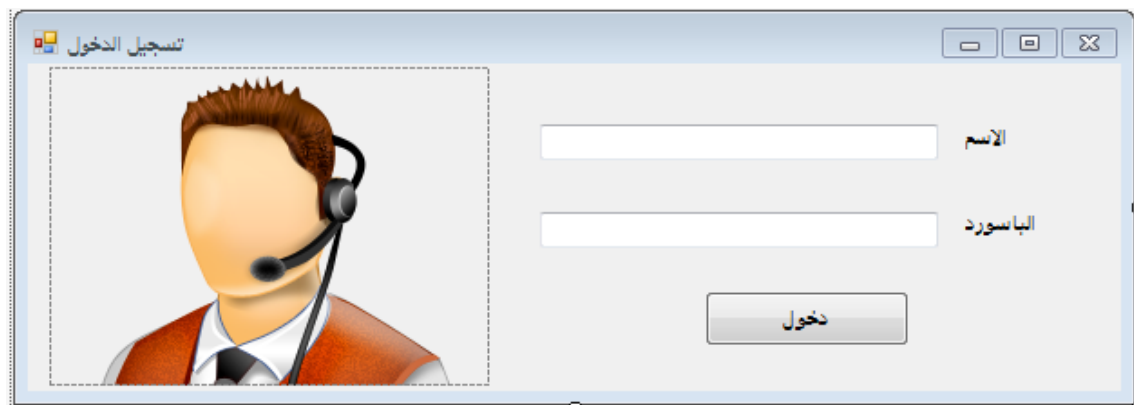
FIG(4):SHOWS THE DESKTOP INTERFACE

2- LOGIN INTERFACE



FIG(5):SHOWS THE INTERFACE FORM

3-USER NAME AND PASSWORD INTERFACE



FIG(6):SHOWS THE INTERFACE ENTER USER NAME AND PASSWORD

4-MAIN INTERFACE



FIG (7):SHOWS THE MAIN INTERFACE OF THE SYSTEM

5- SEMINARS INTERFACE

id	اسم الندوة	عنوان الندوة	تاريخ انعقادها	المشاركون
*				

رجوع

id

اسم الندوة

عنوان الندوة

تاريخ انعقادها: Monday , March 06, 2017

المشاركون

مسح حفظ اضافة جديد

بحث

FIG(8):SHOWS THE SEMINARS INTERFACE

6-CUSTOMIZE COURSE INTERFACE

مسح حفظ اضافة جديد

بحث

رجوع

معرف

اسم الدورة

تاريخ الدورة

مدة الدورة

اجور الدورة

المحاضر

رقم القاعة

وقت الدورة

Monday . March 13, 2017

طباعة

المعرف	اسم الدورة	تاريخ الدورة	مدة الدورة	اجور الدورة	المحاضر	رقم القاعة	وقت الدورة
*							

FIG(9):SHOWS THE CUSTOMIZE TRAINING COURSE INTERFACE

7-WORK SHOP INTERFACE

The screenshot shows a software interface titled "ورشة العمل" (Workshop). It features a table with the following columns: "المعرف" (ID), "اسم الورشة" (Workshop Name), "تاريخها" (Date), "مشاركون" (Participants), and "مشاركون" (Participants). The first row has the value "-1" in the "المعرف" column. Below the table is a "طباعة" (Print) button. To the right of the table is a form for adding new workshops, with fields for "المعرف" (ID), "اسم الورشة" (Workshop Name), "تاريخها" (Date), "مشاركون" (Participants), and "مشاركون" (Participants). The form includes buttons for "رجوع" (Back), "مسح" (Delete), "حفظ" (Save), "اضف جديد" (Add New), and "بحث" (Search).

FIG(10):SHOWS THE WORK SHOP INTERFACE

8-LECTURES INTERFACE

The screenshot shows a software interface titled "الاساتذ" (Lecturers). It features a table with the following columns: "المعرف" (ID), "اسم الاساتذ" (Lecturer Name), "الشهادة" (Degree), "التخصص" (Specialization), "رقم الهاتف" (Phone Number), "البريد الإلكتروني" (Email), and "الشهادات الأخرى" (Other Degrees). The first row has the value "-1" in the "المعرف" column. Below the table is a "طباعة" (Print) button. To the right of the table is a form for adding new lectures, with fields for "المعرف" (ID), "اسم الاساتذ" (Lecturer Name), "الشهادة" (Degree), "التخصص" (Specialization), "رقم الهاتف" (Phone Number), "البريد الإلكتروني" (Email), and "الشهادات الأخرى" (Other Degrees). The form includes buttons for "رجوع" (Back), "مسح" (Delete), "حفظ" (Save), "اضف جديد" (Add New), and "بحث" (Search).

FIG(11):SHOWS THE LECTURES INFORMATION INTERFACE

9-SUMMER TRAINING INTERFACE

المعرف	أسم الدائرة أو المؤسسة	أسم الطالب	المشرف
-1			

FIG(12):SHOWS THE SUMMER TRAINING INTERFACE

10-RESULTS INTERFACE

المعرف	اسم الدورة	تاريخها	أسم المشارك	النتيجة	التقدير	تسلسل النجاح
-1						

FIG(13):SHOWS THE RESULTS INTERFACE

11-TRANESS INTERFACE

The screenshot shows the TRANESS software interface. At the top, there is a menu bar with options: العنصرين, Project, Tools, Settings, Train, Tools, Authentication, Test, Analysis, Windows, Help. Below the menu bar, there is a toolbar with icons for navigation and editing. The main area contains a form for entering data, with fields for date, name, and other details. A table is displayed below the form, showing a list of trainees with columns for ID, Name, and other attributes. The table has a header row and one data row with the value -1.

Monday . May 08, 2017

رجوع

المعرف: -1

رقم المشترك:

اسم المشترك:

جهة الترشيح:

رقم كتاب الترشيح:

تاريخ كتاب الترشيح: Monday . May 08, 2017

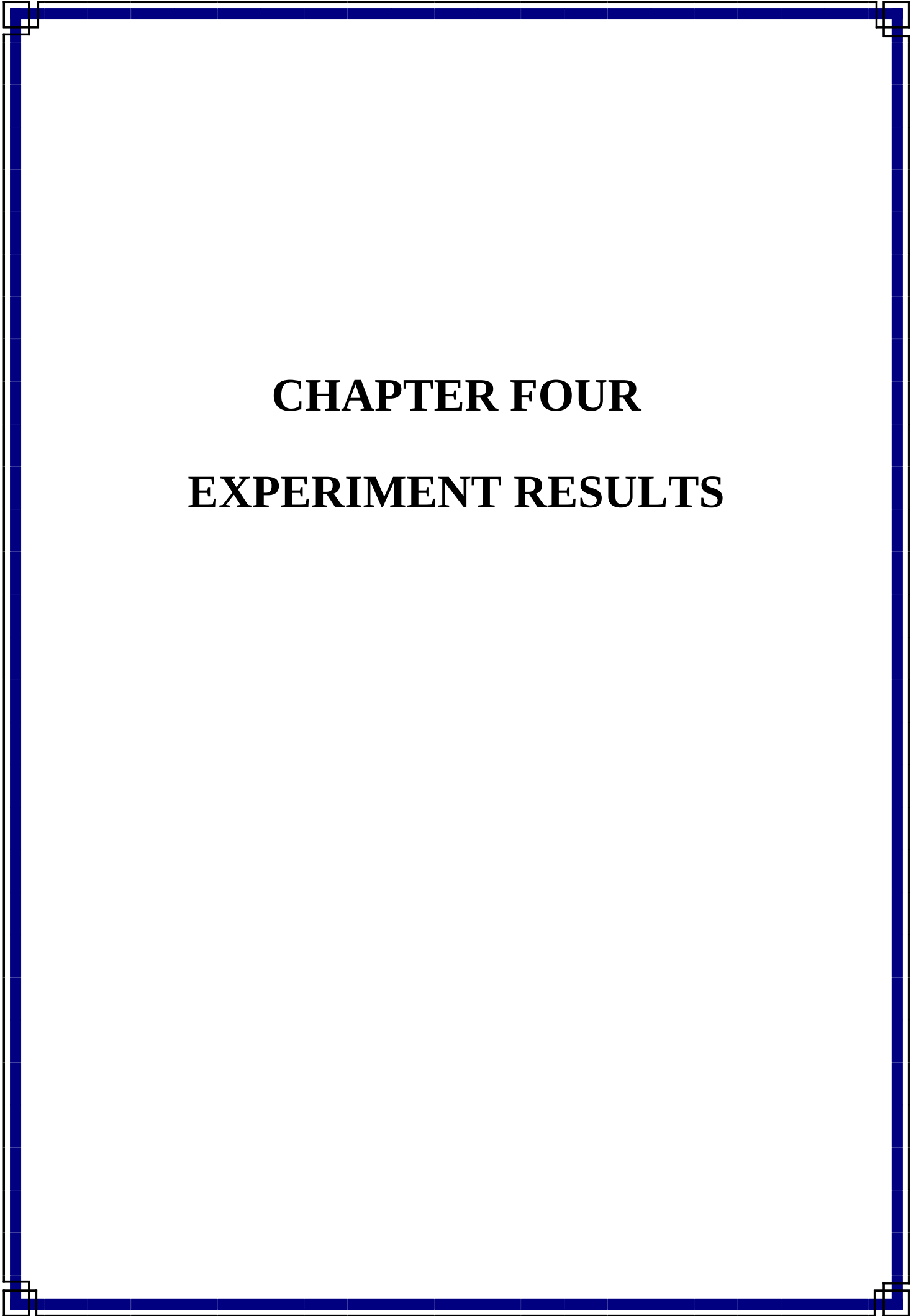
رقم كتاب المباشرة:

تاريخ كتاب المباشرة:

المعرف	رقم المشترك	اسم المشترك	جهة الترشيح	رقم كتاب الترشيح	تاريخ كتاب الترشيح	رقم كتاب المباشرة	تاريخ كتاب المباشرة	رقم كتاب الإنفكاك
-1								

طلب مساعدة

FIG(14):SHOWS THE TRAINEES INTERFACE



CHAPTER FOUR

EXPERIMENT RESULTS

In this chapter will reports for each training course ,which include :

1-report listing the presence of the participants in the training course, as shown in the figure

المعرف	اسم الدائرة او المؤسسة	اسم الطالب	المشرف
1	مركز الحاسوب	زهراء طاغوت	م.م.اثير هادي
2	مركز الحاسوب	سعاد جاسم	م.م.اثير هادي
3	مركز الحاسوب	نسرين محمد	م.م.اثير هادي

fig(15):shows table of the training course.

2-areport listing the names of the participants in the training course with results of their participation as shown in figure

المعرف	اسم الدورة	تاريخها	اسم المشارك	النتيجة	التقدير	تسلسل النجاح
١	دورة الاسعافات الاوليه للموظفين	٢٠١٧-٢-١	علا اسماعيل	ناجحه	جيد	السابع
٢	دورة الاسعافات الاوليه للموظفين	٢٠١٧-٢-١	سارة فالح	ناجحه	مقبول	الاخير
٣	دورة الاسعافات الاوليه للموظفين	٢٠١٧-٢-١	ونام نوري	ناجحه	جيد جدا	الثالث

fig(16):shows table of the training course with results