

Microsoft Access



VEIS

Computer Education

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Database Introduction

Objective :

- u Explaining the Concept of Databases*
- u Discussing the different Datamodels*
- u Overview to the Concept of Normalization*

Contents :

- 1.1 Introduction**
- 1.2 Need of Database**
- 1.3 Advantages of a Database**
- 1.4 Functions of a Database**
- 1.5 Features of Database**
- 1.6 Applications of Microsoft Access**
- 1.7 Basic Steps for Database Designing**
- 1.8 Database Models**
- 1.9 Relational Database.**
- 1.10 Elements of Relational Database.**
- 1.11 Normalization**
- 1.12 Invoking MS-Access**

1.1 Introduction

In today's changing technological environment, the role of data and information is immensely felt. Data and information are valued and maintained as an invaluable resource. **The data that are structured and organized for a quick access and easier management is known as a database** or in simpler terms **a systematic organisation of data is called a database**. Example- One of the simplest forms of database (non-computerized) is your address diary that contains addresses of your friends and relatives. It stores their names, addresses, cities, pin codes, and telephone numbers. In a non-computerized database, as the amount of data increases, creating, storing, and changing it becomes difficult. For example, in a library that does not have a computerized database, three sets of cards will have to be maintained one arranged alphabetically by the title of the book, second arranged by the authors name, and the third arranged by the subject name. The information in all the three sets is the same. Computerized databases allow us to have a single set of information and give us access in all the three ways. This is the reason that more and more databases are being stored and manipulated on computers. A computerized database allows easy, efficient storage, retrieval and modification of data. This has been accomplished through the inception of the database management systems. In this book, we will discuss the fundamentals of database, **Database Management System (DBMS) and the practical use of a Relational Database Management System (RDBMS) using Microsoft Access.**

'A Data base is collection of data and a Relational Database is a collection of related data.'

1.2 Need of database

Without database it is difficult to manage the record, such as home telephone diary is maintained in which important telephone numbers are stored. Let's see some advantages of a database

1. Database reduces duplication of data.
2. Database control data inconsistency to a larger extent.

3. Database helps us sharing of data
4. Database can ensure data security. Only authorized person can assess data.
5. Database checks validity of data
6. Database maintains certain standards, which must be applied to data.

1.3 Advantage of database

Database should be organized and easy to understand. It should give definite knowledge. The advantage to use databases by people for business and personal are:

1. Retrieving desired information
2. Taking meaningful decision
3. Reorganizing information
4. Processing information

1.4 Functions of database

1. Create tables to store data item
2. Edit data record
3. Retrieve data selectively from stored records to provide specific information
4. Prepare printed information retrieval reports
5. Perform calculation.
6. Create screens that can interact with user. (Eg.- In Access & FoxPro)
7. Reports with graphs and quality fonts.

Features of a database management system (DBMS)

The various features, which make a DBMS a powerful tool to design or create database, are listed here.

1. **Easy to learn:** Most of the database management systems are easy to learn and use. No specialized training is required to work on a DBMS.
2. **Reduces data redundancy:** Redundancy implies duplication (or repetition) of the same data in different files. For example, in the traditional record keeping system, the administration department of a school maintains the contact details including the addresses of the students in a file. In addition, their addresses are stored with the result in a separate file. This leads to redundant storage of the address. The database management systems, on the other hand, maintain all the data in a single repository (centralized location).
3. **Reduces data inconsistency:** When there are two files containing the same data and one file is updated while the other file contains the old data, it leads to inconsistency records maintained by the administration department but not in the file storing the results. By storing the data in a single place, database management systems avoid data inconsistency.
4. **Facilitates data sharing:** Most of the database management systems allow sharing of data among multiple users and applications. For this, the data is created or stored in one repository and can be made available to different users according to their requirements. For example, in an airline cancellation system, a database is maintained and stored (centrally) for the reservation and the cancellation of air tickets. Data can be accessed and shared by two different reservation offices at two different places according to their requirements.
5. **Enforces data standards:** Storing data in standardized form.
6. **Password protected:** It allows users to provide a password to their database which provides security to data from unauthorized access.

7. **Extensive help:** It has a built-in-help which can be used when a user faces some problem while using any database management application.

1.6 Applications of Microsoft Access

1. In schools, to keep a record of students, their addresses, results, etc.
2. In organization, to keep record of the employees salary, attendance, expenses etc.
3. In banks, to maintain customer records, account details, etc
4. In hospitals, to keep a record of patient details.
5. In libraries, to keep a record of books of different subjects according to their author name, date of issue, etc.

1.7 Basic Steps for Designing Database.

1. Determine the purpose of your database.
2. Determine the fields you need in the database
3. Determine the tables you need in the database
4. Determine which table each field belongs to
5. Identify the field or fields with unique values in each records
6. Determine the relationships between tables
7. Refine your design
8. Enter data and create other database objects

1.8 Database Models

The objective of a database model is to organize the data logically and physically. It also establishes and identifies the relationships between different records in the database.

The various database models are given here.

Hierarchical Model :

In this model, the data is arranged in a 'hierarchical' structure which describes the relationship of the records of the table in a 'tree-like' or 'parent-child' structure. In the hierarchical database model, every record has a single owner/parent.

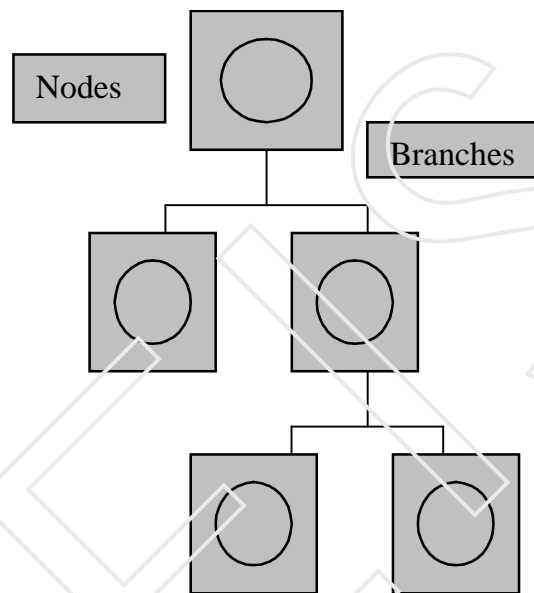


Figure 1.1 Hierarchical Model

Network Model:

The records in this model can be linked with many records. In other words, in this model a record can have multiple parents and child records.

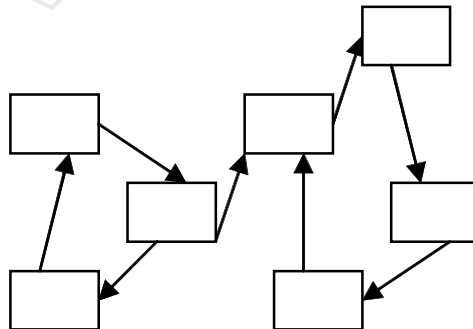


Figure 1.2 Network Model

Relation model :

In this model the data is organized in the form of rows and columns to form a table and the tables can be related to each other for sharing the data.

The DBMS design based on a relation database model is known as the relational database management system (RDBMS).

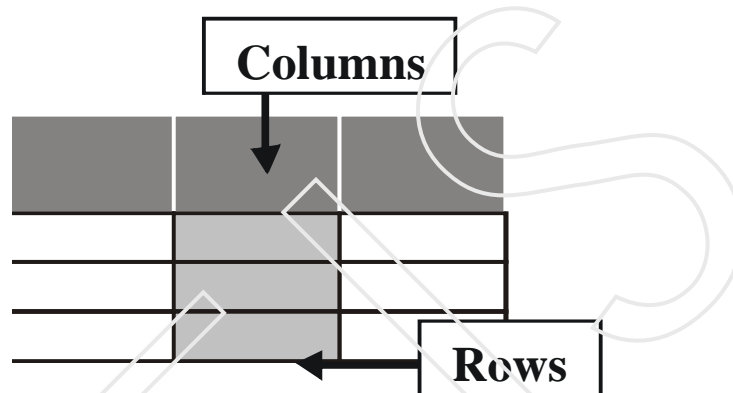


Figure 1.3 Relational Model

1.9 Relational Database

For a successful business, fast access to information is critical.

You extract information from the existing data. Important decisions are based on the information available at any point in time. In order to get the right information at the right time, you store business-related data, in the form of text, numbers, pictures and sound, on a computer system. This aids in fast and easy access to information. Besides data access, organizing, adding, modifying and deleting data.

A Relational Database Management System (RDBMS) is a Database Management System that is based on the relational model as introduced by **Dr. Edgar F.Codd**. Strictly speaking it should also satisfy **Codd's 12 rules**, but in practice there is no DBMS that satisfies all these rules. Even, most successful DBMS that are considered to be relational model in several important ways, including the **Structure Query Language(SQL)**, do not satisfy Codd's 12 rules.

Relational Database Management Systems stores data in the form of related tables, RDBMS are powerful because they require few assumptions about how data is related or how it will be extracted from the database. As a result, the same database can be viewed in many different ways.

An important feature of relational systems is that a **single database can be spread across several tables. This differs from flat- file databases, in which each database is self contained in a single table.**

Rule 1:

The information Rule

Rule 2 :

Guaranteed Access Rule

Rule 3 :

Systematic Treatment of Null Values

Rule 4 :

Dynamic On-Line catalog based on the relational Model

Rule 5 :

Comprehensive data sublanguage Rule

Rule 6 :

View updating Rule

Rule 7:

High-level insert, up date and delete

Rule 8:

Physical Data independence

Rule 9:

Logical data independence

Rule 10 :

Distribution independence

Rule 11:

Integrity independence

Rule 12 :

Non subversion Rule.

Difference between DBMS and RDBMS

DBMS	RDBMS
In DBMS relationship between two tables or files are maintained programmatically	In RDBMS, relationship between two tables or files can be specified at the time of table creation
DBMS does not support client/server architecture	Most of the RDBMS supports client/server architecture
DBMS does not support distributed database	Most of the RDBMS supports distributed databases
In DBMS there is no security of data	In RDBMS there are multiple levels of security. <ol style="list-style-type: none"> 1. Logging in at o/s level 2. Command level (i.e. at RDBMS level).
Each table is given an extension in DBMS	Many tables are grouped in one database in RDBMS
DBMS may satisfy less than 7 to 8 of Dr. E F Codd's rules.	RDBMS usually satisfy more than 7 to 8 rules of Dr. E F codd
NAMING CONVENTIONS	
DBMS	RDBMS
Field	Column, Attributes
Record	Row, Tuple, Entity
File	Table, Relation, Entity Class

Microsoft Access is the most popular and powerful Windows based software introduced by Microsoft Corporation. It is known as Relation Database management System. It is used to store large quantities of information. The database gives you the flexibility to obtain this data in multiple formats. Using MS-Access you can manage all your information from a single database in which you can add, update, delete, view and manipulate table data using online forms, find and retrieve data in a desired way using queries and print data in specific layout using reports. The database will have extension .MDS in MS-Access. Some other popular RDBMS are Sybase, sql (STRUCTURE QUERY LANGUAGE) In a Relation Database Management system like Microsoft Access, instead of

storing all the information in one large table, different types of information can be stored in smaller tables. The tables are linked on common fields.

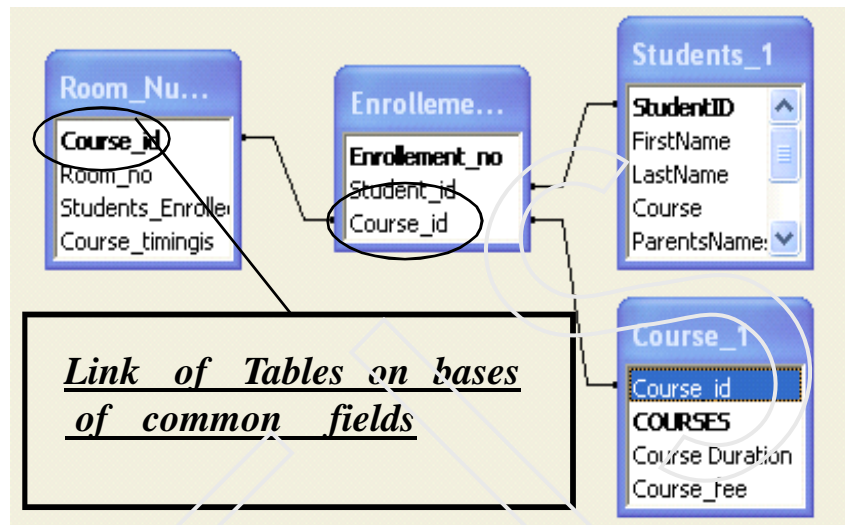


Figure 1.4 Linked tables in Relational Data Model

This is unlike flat file management program where data can be manipulated one table at a time only. The advantage of a relational database management system is that you can easily combine or extract data from several tables to get exactly the data that you need.

1.10 Elements of Relational Database

A table is a collection of data about a specific topic, such as business contacts or a book collection. The table is the basic element of the database. Tables organize data into rows, called records, and columns, called fields. Records and fields, combined, make up the table.

Each record (row) contains information about one item or entity and is a complete record of the item. For example in a table called student all the information about one student is in one row.

Each field (column) contains information of a certain type for all records. A field consists of a name or category such as First Name, Last Name Enrollment number etc.

Enrollement_no	Student_id	Course_id
011	123	14
022	124	14
033	125	15

Figure 1.5 Table Showing Records and fields

Many of the database will be small, with one or two tables. But as the database become braver, tackling bigger projects, it will be noticed that the design of the tables is proving problematic. This is done by database normalization, or the optimization of tables.

1.11 Normalization

Normalization is a process that helps analyst or database designers to design table structures for an application. The focus of normalization is to attempt to reduce data redundancy Through the normalization process, the collection of data in a single table is replaced, by the same data being distributed over multiple tables with a specific relationship being setup between the tables. By this process RDBMS schema designers try their best to reduce table data to the very minimum.

Normalization is carried out for the following reasons:

1. To structure the data between tables so that data maintenance is simplified.
2. To allow data retrieval at optimal speed.
3. To simplify data maintenance through updates, inserts and deletes.
4. To reduce the need to restructure tables as new application requirements arise.
5. To improve the quality of design for an application by rationalization.

Normalization is a technique that:

1. Decomposes data into two-dimensional tables
2. Eliminates any relationship in which table data does fully depend upon the primary key of a record
3. Eliminates any relationship that contains transitive dependencies.

A table is said to be in the 1NF when each field of the table contains precisely one value

Consider the following table **Course**

Faculty	Course id	Department	Hour
025	12	Computers	10
	15		20
	18		15
029	16	English	25
	18		30
	17		15
031	12	Economics	5
	15		25
	16		20

Table 1.1 Denormalized Table

The data in the table is not normalized because a cell in **Course_id** and **Hours** has more than one value.

By applying the 1NF definition to **Course** table, you arrive at the following table

Faculty	Department	Course id	Hour
025	Computer	12	10
025	Computer	15	20
025	Computer	18	15
029	English	16	25
029	English	18	30
029	English	17	15
031	Economics	12	5
031	Economics	15	25
031	Economics	16	20

Table 1.2 Table in 1NF

Second Normal Form

The table is said to be 2NF when it is in 1NF and every attribute in the rows is functionally dependent upon the whole key. In the table for each value of **Faculty** there is more than one value of **Hours** hence **Hours** is not functionally dependent on **Faculty** similarly for each value of **Course_id** there are different values of **Hours**. However for a combination of **Faculty** and **Course_id** values there is exactly one value of **Hours** hence **Hours** is functionally dependent on whole key **Faculty** and **Course_id**. To convert the table **course** in 2NF, you must remove attributes that are not fully functionally dependent on the whole key and place them in different table along with the attribute that it is functionally dependent on. In the above example since the **Department** is not fully functionally dependent on the whole key **Faculty** and **Course_id**, you place **Department** along with **Faculty** in a separate table **Department**:

Faculty id	Department
025	Computer
029	English
031	Economic

Table 1.3 Department

Faculty	Course id	Hour
025	12	10
025	15	20
025	18	15
029	16	25
029	18	30
029	17	15
031	12	5
031	15	25
031	16	20

Table 1.4 Table in 2NF

Third Normal Form (3NF)

A relation is said to be in 3NF when it is in 2NF and every non-key attribute is functionally dependent only on primary key.

Consider the table **Faculty**:

Faculty	Department	DepHead
025	Computer	045
029	English	034
031	Economics	071
026	Economics	071
032	Computer	045
038	English	034

Table 1.5 Table in 2NF

The primary key in the **Faculty** table is **Faculty**. For each value of **Faculty** there is exactly one value of **Department** and exactly one value of **DepHead** hence both the attributes are functionally dependent on the primary key Faculty and all the attributes are functionally dependent on the whole key **Faculty** hence the table is in 2NF.

To convert the table Employee into 3NF, you must remove the column **DepHead** since it is not functionally dependent on only the primary Key Faculty and place it in another table **Head** along with the attribute **Department** which it is functionally dependent on.

Department	Dephead
Computer	045
English	34
Economics	071

Table 1.8 Table in 3NF

Faculty	Department
025	Computer
029	English
031	Economics
026	Economics
032	Computer
038	English

Table 1.7 Head

Disadvantage of Normalization

However the numbers and complexity of joints increases the increase in normalization. If the number of joints between the table increases, the performance of database decreases.

Denormalization

The end product of normalization is a set of related tables, which comprise the data. In such cases, it is wiser to introduce a degree of redundancy in tables either by introducing extra columns or extra tables.

The intentional of redundancy in a table is in order to improve performance and is called denormalization. This table structure has simplified the query add speed up the processing of the query. By storing extra columns you are introducing redundancy in the table but improving the performance of queries.

The decision to denormalize will obviously result in a trade –off between performance and data integrity .Denormalization also increase disk space utilization.

1.12 Invoking MS-Access

1. Click the **Start** Button on **Task Bar**
2. Select **Programs** option from **Start Menu**
3. Click on **Microsoft Access**.

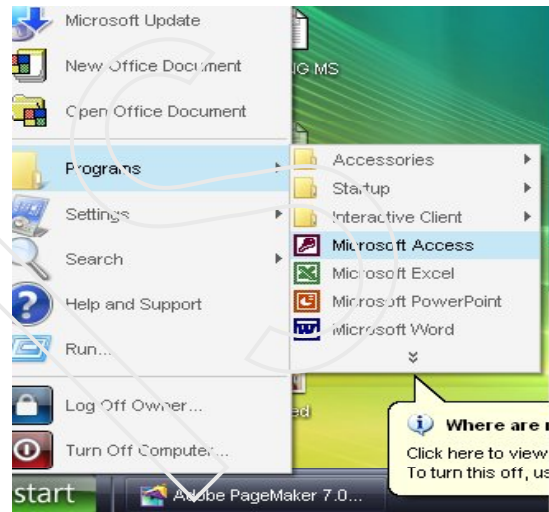
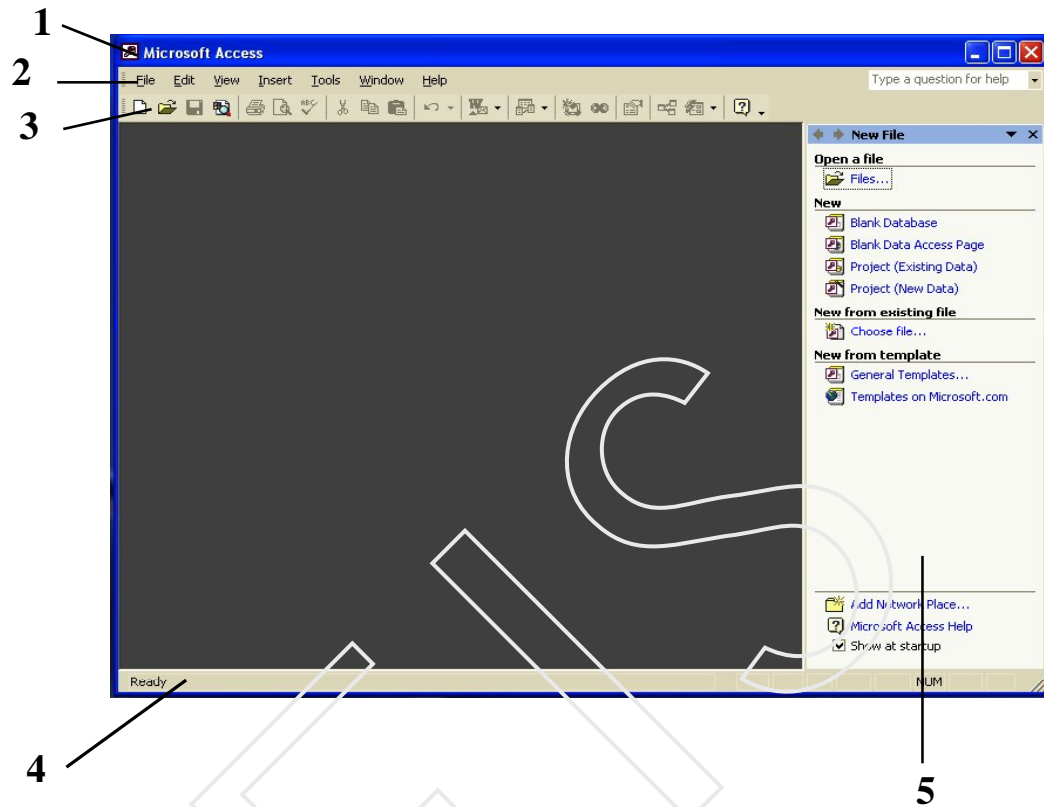


Figure 1.7 Access Main Window

- 1 **Title Bar-** It shows the title of **.mdb** file followed by the name of the program
- 2 **Menu Bar** – It displays the name of the main menu.
- 3 **DataBase Toolbar** - It has buttons that allow you to accomplish some selected task of frequent use.
- 4 **Status Bar-**It gives the information about the task presently going on..

Figure 1.6 Start Menu Options



5 Task Pane – The task pane is a small window in Ms-Access that provides a list of frequently used commands. The location and size of the task pane makes it convenient to use these commands. There are several task panes in MS-Access when MS-Access application is started, the **New Task** pane appears.

Self Assessment Questions

1. Define database in the light of its uses and advantages.
2. Explain in Detail RDBMS.
3. Mention the difference between DBMS & RDBMS
4. Explain the process of Normalization

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2**Creating Databases**

Objective :

- u Discussing different ways Creating Database*
- u Explaining the Objects and Data Types used in MS-Access*

Contents :

- 2.1 Introduction**
- 2.2 Creating a Database Using MS-Access**
- 2.3 Open an Access Database**
- 2.4 Close an Access database**
- 2.5 Creating Data Base Using Blank Database**
- 2.6 Objects of a Database**
- 2.7 Data Types in MS-Access**

2.1 Introduction

MS -Access provides two different ways of creating a database :- (1) using MS-Access Wizard and (2) Creating a database using Scratch, (Blank atabase).

2.2 Creating a Data Base using MS-Access Wizard

Microsoft Access provides two methods to create an Access database. You can use a Database Wizard to create in one operation the required tables, forms, and reports for the type of database you choose- this is the easiest way to start creating your database. Or you can create a blank database and then add the tables,forms, reports, and other objects later – this is the most flexible method, but it requires you to define each database element separately. Either way, you can modify and extend your database at any time after it has been created.

1. In the **New File** task pane, click **General Templates** in the **New Form Template** section
2. The **Template Dialog** box appears as in **Fig 2.2.**

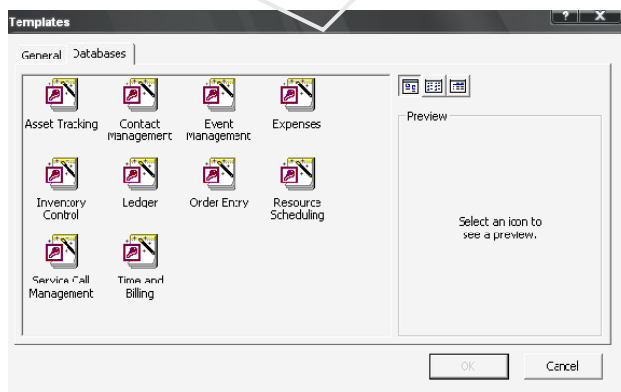


Figure2.2 Template Dialog Box

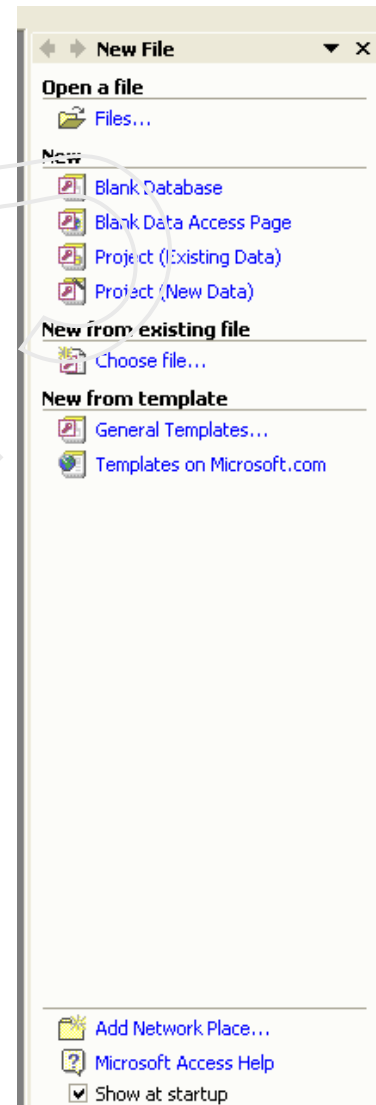


Figure 2.1 Task Pane

3. Click the **Database tab**.
4. Click **Expenses**, and then click **OK**.

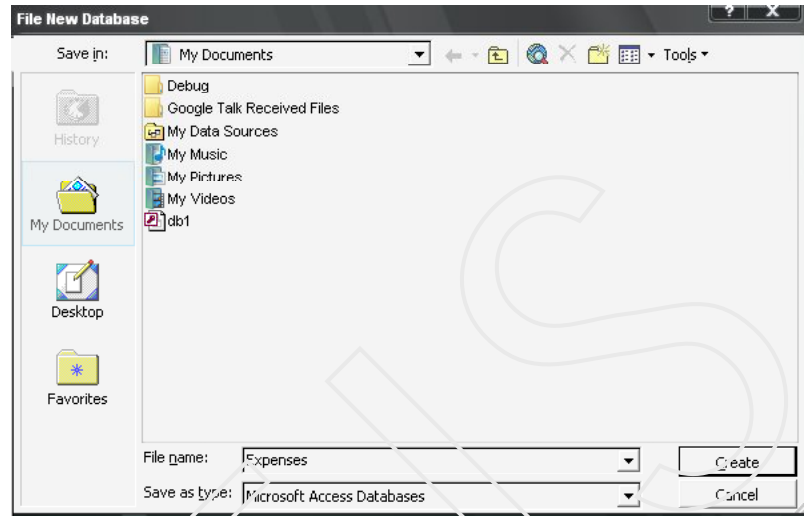


Figure 2.3 Save as dialog box

5. After giving name, say Expenses in this case, click **Create**. The database wizard appears with a list of tables created under the Expenses.
6. Click **Next**.

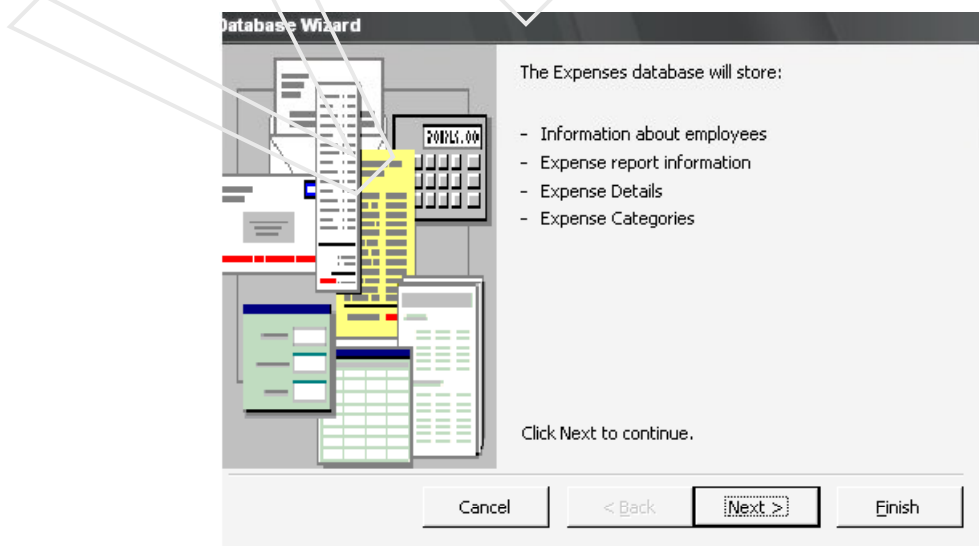


Figure 2.4 Database Wizard

7. The **List of Tables** along with corresponding fields appears in the database wizard.
8. Click the required table from the tables in the database box.
9. Click the fields to be added from the fields in the table box then click **Next**.

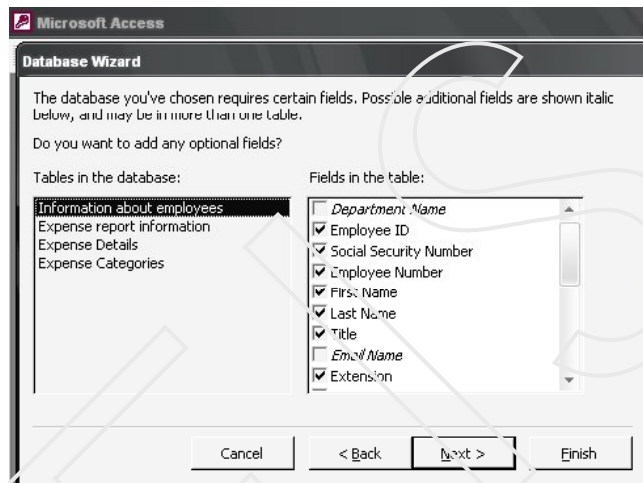


Figure 2.5 Database Wizard

10. A list of styles appears and click the style from the **what style would you like for screen Display? List**. Select the style and click **Next**
11. A list of **Styles for printing reports** appears select one of these and click **Next**.

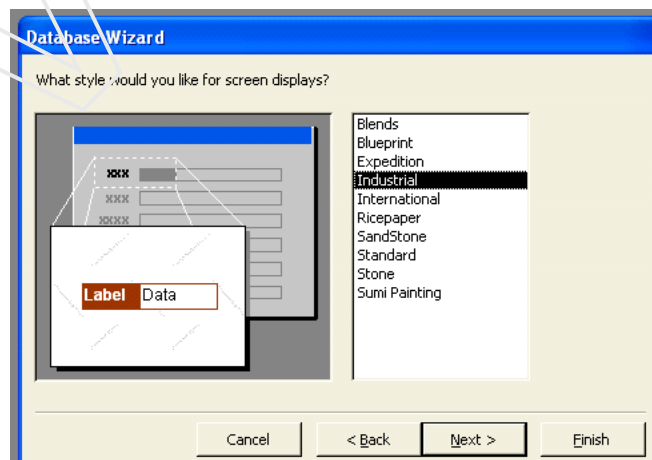


Figure 2.6 Database Wizard

12. Click a style from **what style would you like for printing reports list**.
13. Click next the **database wizard** asks the **name of the database**.

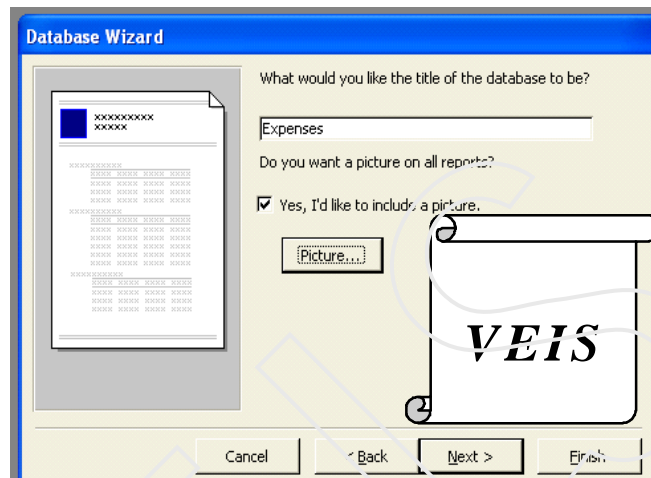


Figure 2.7 Database Wizard

14. Give the title, say **Expenses** in this case, and click next.
15. The next screen of the Wizard appears. Click **Yes**, start database. This makes sure that the new database created is opened after you Finish all the steps to create the database. Then click **Finish**.

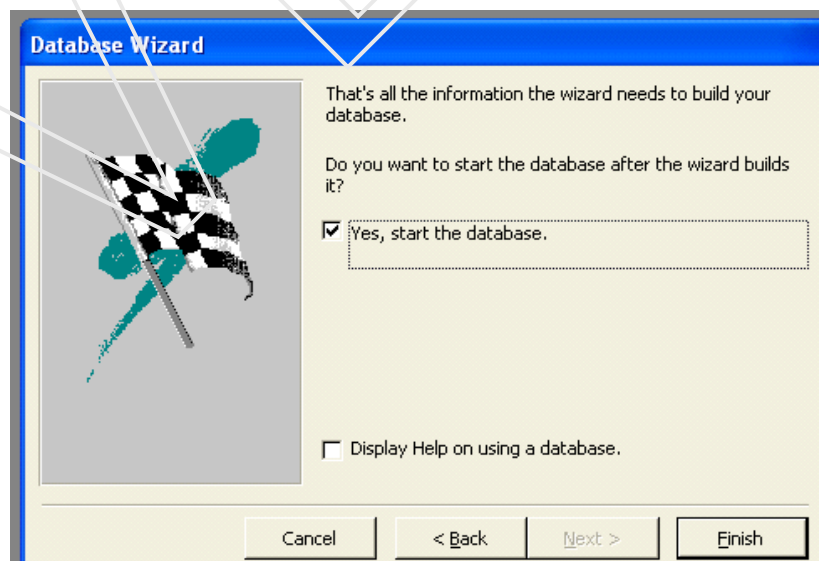


Figure 2.8 Database Wizard

15. As soon as you finish, the expenses database is created with all the required tables forms, reports corresponding to the database. **The Main Switchboard appears.**
16. The expenses database so created appears in the minimize state. Click maximize button to maximize it.
17. Now click the **Main Switchboard** and click on any option and see the various outputs.

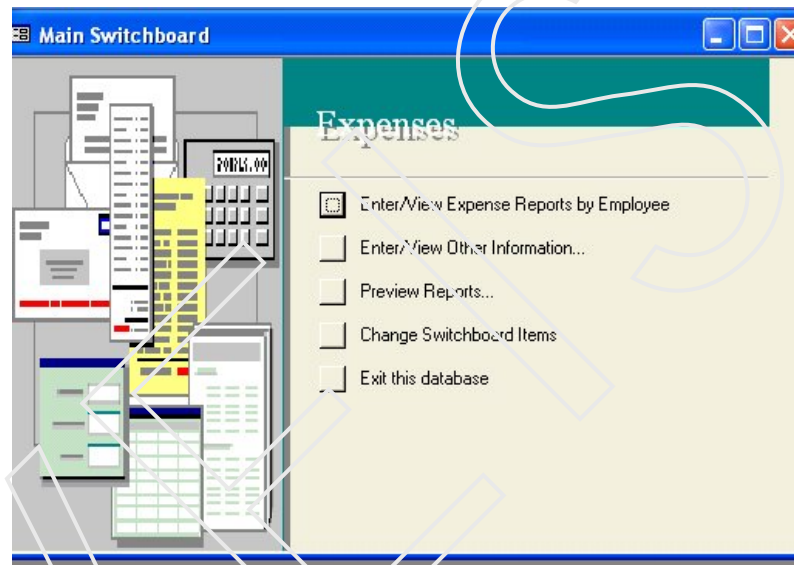


Figure 2.9 Database Wizard

Figure 2.10 Expense Report by Employee (Form)

First Name	Ravi	Title	Junior Assiatant
Last Name	Mehera	Employee #	076
Address	Vishal Nagar	Social Security #	123-46-5879
City	Kota	Work Phone	04123768
State/Province	Rajasthan		
Postal Code	305001		
Country/Region	India		

Exp Rpt Name	Date Submitted	Advance	Total Expenses	Amount Due

Record: 1 of 1

Figure 2.11 Expense Report by Employee (Form)

18. Click on the **Enter /View Expense Report Employee** option on the **Main Switch Board**.The following form will appear. This is the **First Form** through which data is entered in the database tables.
19. Enter the data and click on the **Expense Report Form**.This the **Second Form** to enter data into the data base.

Expense Report ID	(AutoNumber)	Advance	
Employee Name	Ravi Mehera	Expense Totals	
Exp Rpt Name		Balance Due	\$0.00
Exp Rpt Descr		Paid	
Dept. Charged			
Date Submitted	4/14/2008		

Expense Date	Expense Category	Description	Amount

Record: 1 of 1

Figure 2.12 Expense Report (Form)

The screenshot shows two overlapping forms in an Access application. The background form is titled 'Expense Report' and contains several fields: 'Expense Report ID', 'Employee Name', 'Exp Rpt Name', 'Exp Rpt Descr', 'Dept. Charged', 'Date Submitted' (4/14/2008), and a table with columns 'Expense Date', 'Expense Category', 'Description', and 'Amount'. The table has one row with '4/8/2013' in the 'Expense Date' field. Below the table is a 'Preview Report...' button, which is circled in red. The foreground form is titled 'Expense Categories' and has three fields: 'Exp. Category ID' (1), 'Expense Category' (Perks), and 'Expense Account#' (678). Both forms have record navigation controls at the bottom.

Figure 2.13 Expense Category (Form)

20. Enter data in the **Expense Report Form**. (Below the form their fill the table fields after filling all the entries of the **Expense Report Form**.)
21. Enter the data in the **Date Field** and then double click on the **Expense Categories Field**. The **Expense Categories Form** is displayed .This is the **Third Form** to enter the data.
22. After entering the data in the **Expense Category Form** and ----
Table,click on the Preview Report button.
23. The **Report** for the **First Entered Record** is displayed with the picture on the top left hand corner which you inserted at the time of creating the forms through data base wizard.

Note:

The data for all the records related to the expense has to be entered in the same manner and the reports for the following can be generated in the similar fashion.

2.1.1 Adding a Item to Switch Board Items

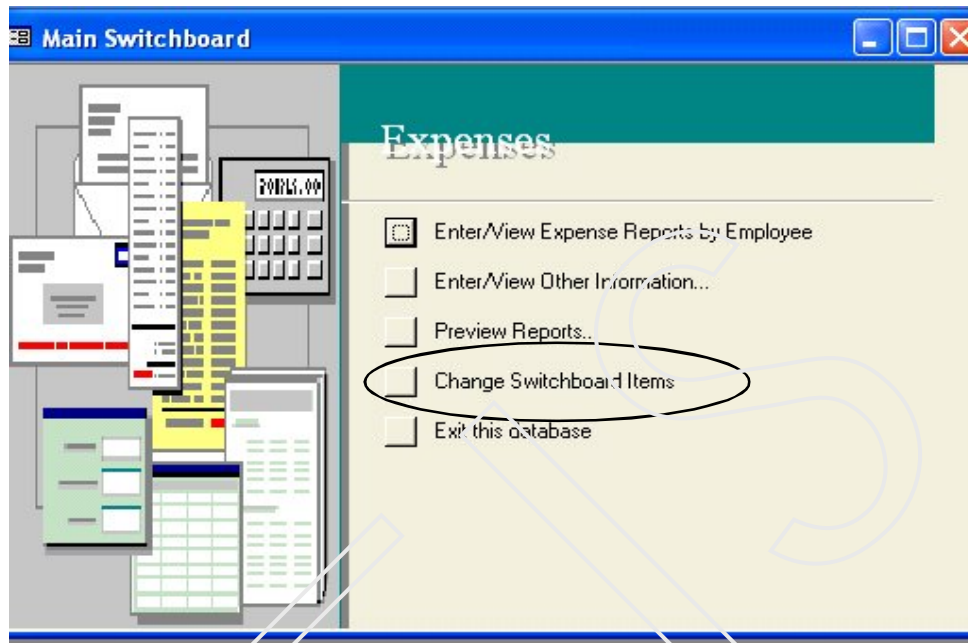


Figure 2.15 Main Switch Board

1. Select the option **Change Switch Board Items** from the **Main Switch Board**.

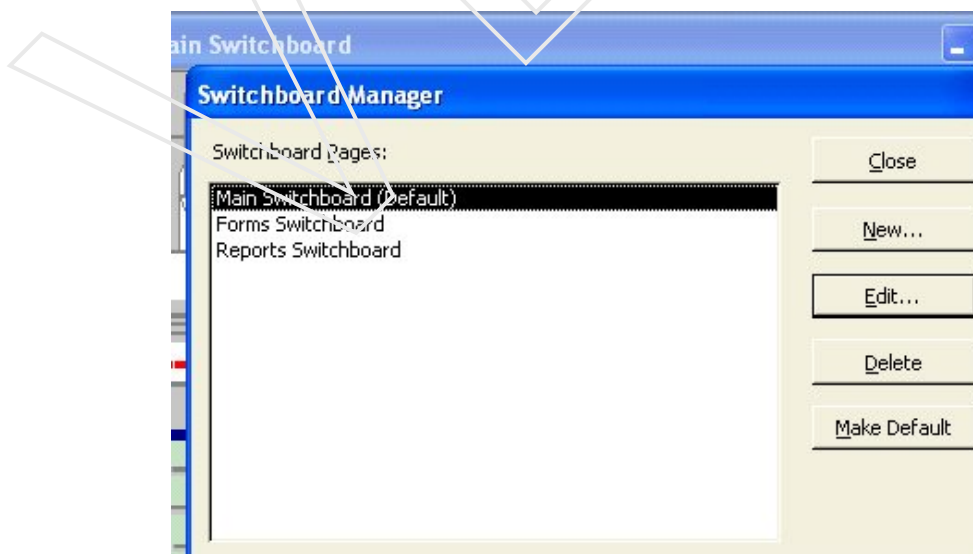


Figure 2.16 Switch Board Manager

Main Switch Board - Fig 2.15

Forms Switch Board - The form gets open by clicking on the **Enter / View Other Information** on the **Main Switch Board**.

Report Switch Board - The form gets open by clicking on the **Preview Reports** on the **Main Switch Board**

2. Select the **Main SwitchBoard(Default)** option.(Fig 2.16)
3. Click on **Edit** option.(Fig 2.16)
4. The **Edit Switch Board Page** Dialog Box appears (Fig 2.17)

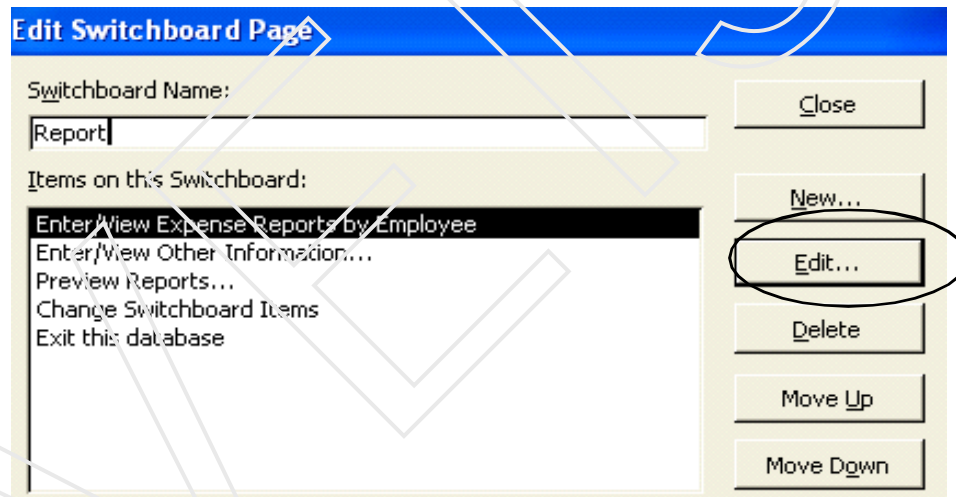


Figure 2.17 Edit Switch Board Page

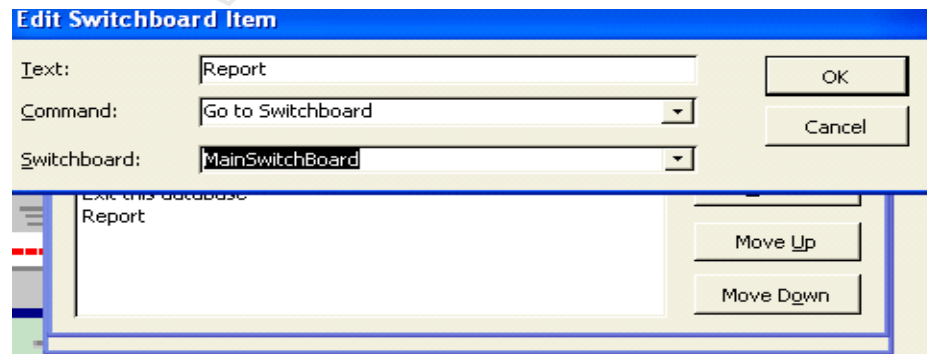


Figure 2.18 Edit Switch Board Item

- 3 . Click on **New** option.
- 4 . **Edit Switch Board** dialog box appears. (Fig 2.18)
5. Enter the **Text** as **Expenses** (Fig 2.18)
- 6 Enter the command as **Open form in add Mode.** (Fig 2.18)
- 7 Enter Form as **Expense Report SubForm.** (Fig 2.18)
8. Click on **ok** button.(Fig 2.18)
- 9 The new switch board page (**Expenses**) is added to the list(Fig 2.18)
10. From the **Edit Switch Board Item and Switchboard Manager** dialog box click on **Close Button.** (Fig 2.18)

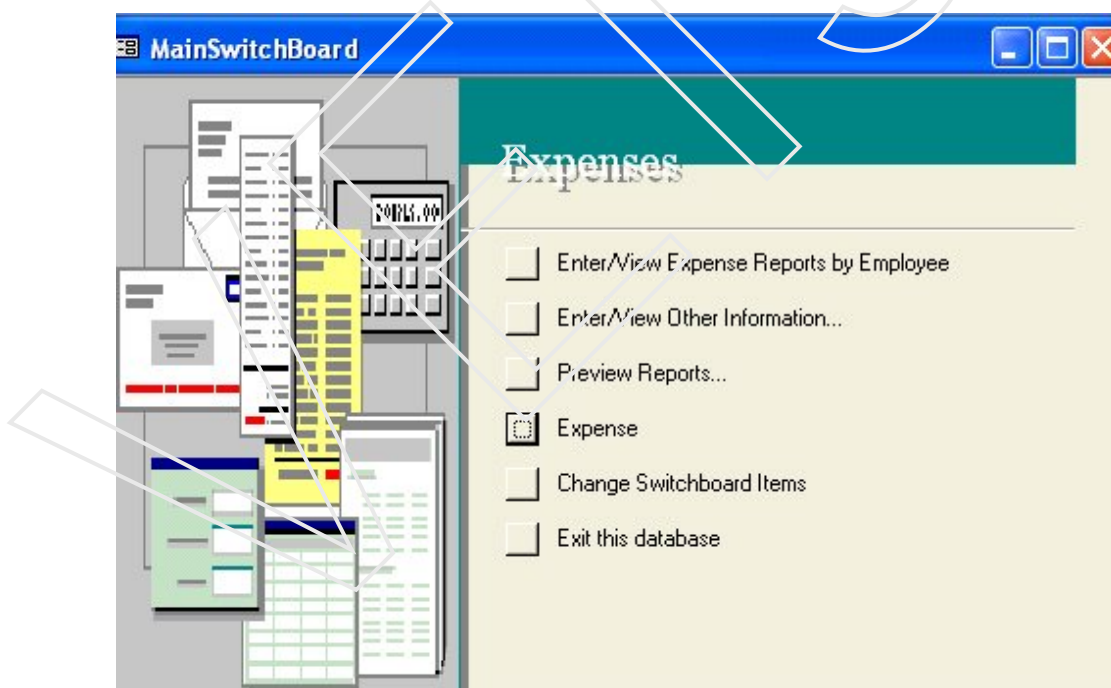



Figure 2.19 Main Switch Board

11. Now by clicking on the Expense option on the **Switch Board** the following form will open. (Fig 2.20)



Expense Date	
Expense Category	
Description	
Amount	
Expense Totals	

Figure 2.20 Expense Report Form

2.3 Open an access database

1. On the **File menu**, click on the **open** option.
2. Click a shortcut in the left side of the open dialog box, or in the look-in box, click the drive or folder that contains the Microsoft Access database that you want.
3. In the folder list, double-click folders until you open the folder that contains the database. If you can't find the database that you want to open, click Tools on the toolbar in the open dialog box, and then click search. In the search dialog box, enter additional search criteria.
4. Do one of the following:
 - Double-click the database.
 - To open the database for shared access in a multi-user environment, so that you and other users can read and write to the database, click open.
 - To open the database for read-only access so that you can view it but cannot edit, click the arrow next to the open button, and then click open read-only.

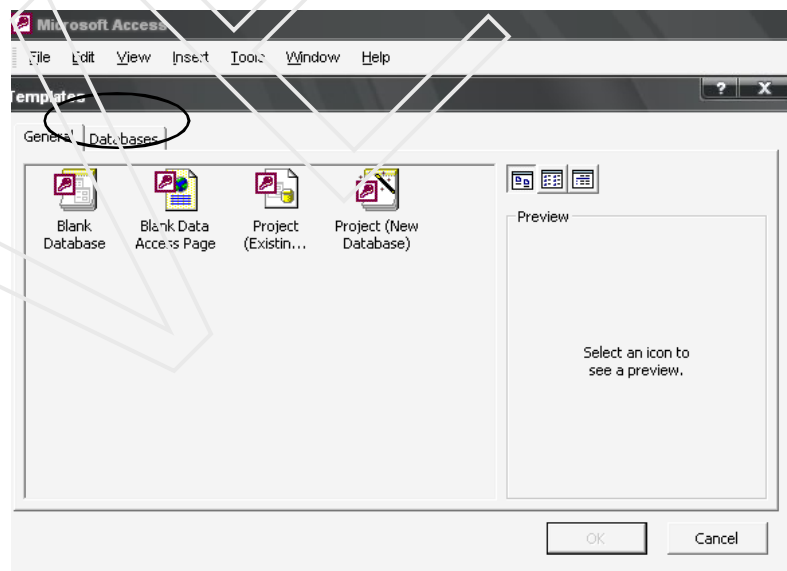
- To open the database with exclusive access, click the arrow next to the open button, and then click open exclusive .
- To open the database for read-only access and also prevent other users from opening it, click the arrow next to the open button, and then click open Exclusive Read-only.

2.4 Close an Access database

On the file menu, click the button in the database window or press CTRL+W.

2.5 Creating Data Base Using Blank Database

1. In the **New File** task pane, click **General Templates** in the **New Form Template** section
2. **The Template dialog box appears as**
3. Click the **General** tab.
4. **Choose Blank database option. Fig. 2.22 appeared.**



Fiigure 2.21 Templates Dialog Box

4. Now enter **Student_information** and click on **Create** button
5. The following window appears (**Fig 2.23**)

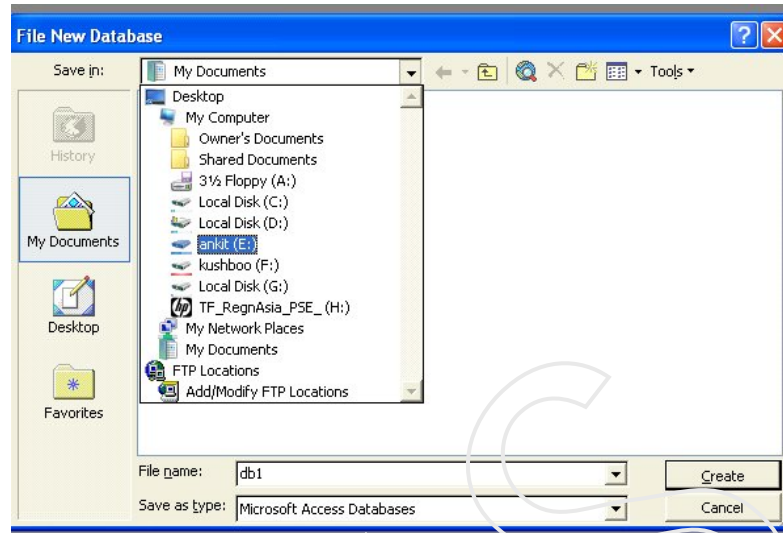


Figure 2.22 File New Dialog Box

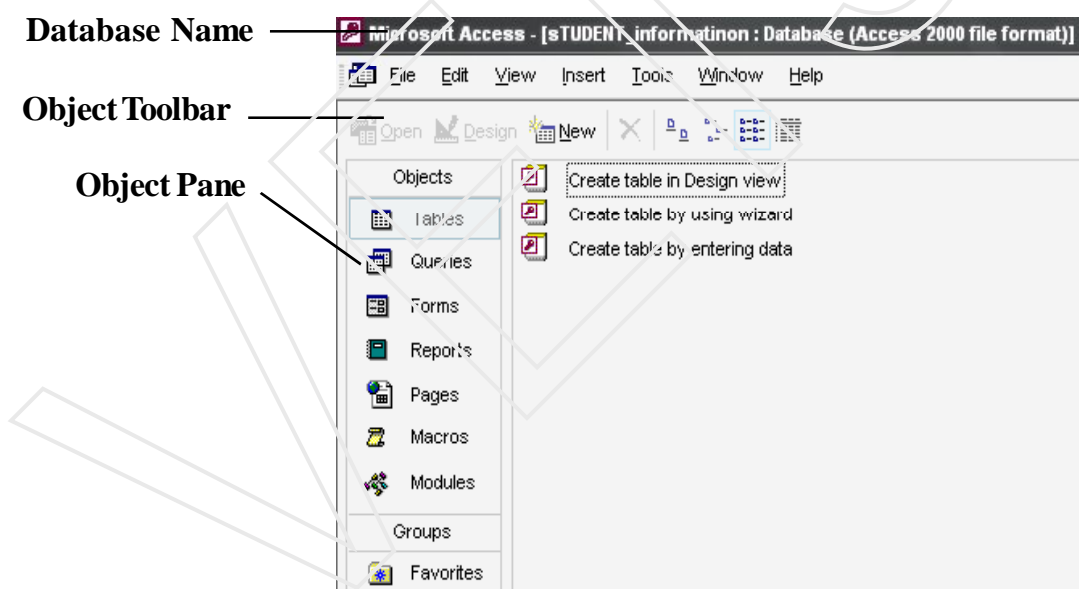


Figure 2.23 Database Access File Format

Object Toolbar : It has buttons to view existing database objects or create new ones.

Object Pane : Object pane has buttons to see various database object .For example if we want to see number of tables which have been created in a

data base we have to just click on the **Table Button**. In the similar way if we want to see how many forms have been designed in a particular database we have to click on **Forms** button.

2.6 Objects of a data base

Tables :

Tables are the building blocks of the database. Tables stores data .You can open the table in Datasheet View to enter data in it.Or, you can create a data entry form for the table.

Queries :

A query is either a question about the data stored in your tables or a request to perform an action on the data like **Appened , Edit ,Delete**.

Forms:

Forms help in easy entry of data. A single form can be used to enter and display data from multiple record source

Reports:

Report can be created for the different data base objects like queries and Tables.

Pages:

A data access page is a special type of web page designed for viewing and working with data from internet or an intranet - data that is stored in a MS- Access database or a MS- SQL Server database.

Macros :

Macros are small programs used to automate a repetitive task or set the database startup and exit code.

Modules :

Modules are the containers for any programming code written in an Access database.

2.6 Data Types in Ms-Access**Text :**

The field can contain combination of text, numbers and special character but no calculation can be performed on the numbers entered in the field having the data type text like address, phone no, student id which have the combination of numbers and text. But these numbers are of the type on which we do not want to perform any calculation. It can store up to 255 characters, or length set by user in the **Field Size property**, whichever is less. Microsoft Access does not reserve space for unused portions of a text field

Memo:

The field is used for such data entries where the data, to be entered is not a single word but at least of two line. It can store up to 65,536 characters e.g : if a publisher maintains his database he may desire to write book description in the database. It can store upto 65,535 characters.

Number :

This field is used to enter only numbers. The numbers entered in this field can be used for calculation. Its size is 1,2,4, or 8 bytes (16 bytes if the Field Size property is set to Replication ID)

Date/Time:

Field is used for entering date and time. This data type stores 8 bytes.

Currency :

Field is used for currency values and prevents rounding off during calculations. It stores 8 byte.

Auto Number :

Automatically generates (and fills itself with) a number every time a new record is created. It generally takes 4 bytes (16 bytes if Field Size property is set to Replication ID)

Yes/No :

For those situations when you need a simple yes/no answer (or true/false or on/off). size is 1 bit.

OLE Object:

An object (such as a Microsoft Excel spreadsheet, a Microsoft Word document, graphics, sounds, or other binary data) linked to or embedded in a Microsoft Access table. Up to 1 gigabyte (limited by available disk space)

Hyperlink :

Text or combinations of text and numbers stored as text and used as a hyperlink address. A hyperlink address can have up to three parts: text to display- the text that appears in a field or control; Address- the path to a file (UNC path) or page (URL); Sub address- a location within the file or page. Screen tip - the text displayed as a tool tip. The easiest way to insert a hyperlink address in a field or control is to click Hyperlink on the insert menu. Each part of the three parts of a Hyperlink data type can contain up to 2040 characters.

Lookup wizard:

Creates a field that allows you to choose a value from another table or from a list of values by using a list box or combo box. Clicking this option starts the lookup wizard, which creates a look up field. After you complete the wizard, Microsoft Access sets the data type based on the values selected in the wizard.

Self Assessment Questions

1. Write the different ways of creating a database.
2. Mention the various objects which are present in the database window.
3. Mention the different datatypes used in Access.

