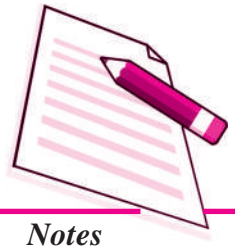


Notes

38

DATABASE MANAGEMENT SYSTEM

So far you have studied in the previous lessons as how Tally can be used as an Accounting software in present scenerio. You also learnt the steps in installation of computerised accounting system, and how a computer software can be used to create company. Together with this, once a company is created and entries are made, one is able to classify accounts in different groups & finally prepare the Trading & Profit and Loss A/c along with Balance Sheet. As you are well aware that the conventionally used paper filing system, text documents, and even spread sheets may not enough for the growing needs of tracking this data and critical information. A simple solution to this situation is available in the form of a Database management System (DBMS).

OBJECTIVES

After studying this lesson you will be able to :

- understand how to structure database as per requirement;
- design and create database tables;
- make use of Microsoft Access for simple database applications involving creation of back-end database and the front end forms for capturing, processing and
- retrieval of data

38.1 DEFINING DATABASE

A database is a collection of data for generating useful and decision worthy information. It consists of an organized collection of interrelated data for one or more users, in a digital form. We find several examples of databases in our daily life like a database for school or a bank, library, bus/railway reservation system etc. Database Management System offers a logical way of storing data in a systematic manner which overcomes

the several limitations such as data redundancy and inconsistency, data duplicity, difficulty in accessing data, data isolation, and data security problems. These difficulties, among others, prompted the development of database systems which represents data into the relational tables for the logical view of the database.

In order to understand how data is stored in a database to produce reliable and meaningful information, let us take an hypothetical case of an accounting database for maintaining data relating to accounting transactions of a business firm named Unique Electronics. The process of structuring a database comprises following elements:

38.1.1 Requirement Analysis

Requirements Analysis is the first and most important stage while designing a database. This stage involves assessing the informational needs of an organization, also referred to as Reality. The data requirements are used as a source for database design such as:

1. Data to be stored in the database.
2. Frequency of the data to be modified.
3. Users types of database.
4. Level of hardware and operating system available.
5. Will the database (back end) be used by any other front end application?

In our hypothetical case i.e., Unique Electronics, accounting transactions needs to be represented conceptually with full description i.e., accounting transactions are documented via vouchers. Voucher exhibits the date of transaction, amount of transaction, account name and account code (both for debit and credit entry) and the narration with respect to the transaction happened. Then the support documents are attached to the accounting voucher. The transactions are documented with respect to the category of accounts affected. These accounts are then classified into the categories (account types): Expenditure, Income, Assets, Liabilities and Capital.

38.1.2 Conceptual Design

After collecting and analyzing all requirements of an organization, a Conceptual diagram is developed for the database known as Entity-Relationship (ER) diagram. ER diagram consists of entities, the attributes related to these entities and their relationships. *Entity* is a real-world object, distinguishable from other objects. An entity is described using a set of *attributes*. An attribute is a property that describes an entity. *Relationships* are used to tie together different entities (two or more entities). Relationships can also have their own attributes.

38.1.3 Logical Design

It is representational data model through which ER design is transformed into inter-related data tables. Accordingly, there emerge five tables in our hypothetical case of Unique Electronics:

1. Employee Table
2. Vouchers Table
3. Support Table
4. Accounts Table
5. AccountType Table

38.2 IDENTIFICATION OF DATA TO BE STORED IN TABLES

Consider the following accounting transactions. Voucher number is coded sequentially.

1. Recall the journal entries recorded in case of manual system.

Date	*Voucher No*	*Transactions*	*Amount ₹*
April, 2014			
Commenced business with cash:			
01	A1	Sanjana	5,00,000
01	A2	Naveen	4,00,000
01	A3	Cash deposited into Bank	4,00,000
02	A4	Goods purchased from Jain and payment made by Cheque No. : 765421	1,50,000
02	A5	Paid for Carriage to M/s Sonu Transports	200
04	A6	Goods sold to Kripa & Co.	1,75,000
05	A7	Goods purchased from M/s Jyoti Bros.	2,50,000
06	A8	Sold goods for cash to M/s Kansakar & Co.	45,000
08	A9	Paid for advertisement by Cheque No.: 765424 to m/s Cosmo cables	2,500
09	A10	Received Bill of Exchange from Kripa & Co. Payable after 3 months	1,75,000
17	A11	Paid for insurance of godown Cheque No.: 765425	5,500
18	A12	Paid for Fuel, Power and Electricity	1,000

23	A13	Cash withdrawn by Sanjana for household expenses	20,000
27	A14	Goods taken from stock for personal use by Sanjana	5,000
28	A15	Furniture purchased from M/s S.N. Furniture by Cheque No.: 765428	45,000
30	A16	Salary for the month paid by cheque to Ramaiya	9,000
30	A17	Payment of Telephone bill by Cheque No.: 765433	1,500
30	A18	Paid for wages by cash	7,000

2. The individual accounts affected by these transactions are grouped under five categories :

   Capital ……...…….... 5

   Liabilities ……....…..... 4

   Assets……..... 3

   Revenue …….....2

   Expenditure…….....1

3. Based upon these account groups, the transactions are to be analysed. Later, the chart of accounts is subjected to the scheme of codification. In this case, the individual accounts are grouped as follows:

Account Name	*Acc_Type*
Sanjana's Capital Account	5
Naveen's Capital Account	5
Jyoti Bros.	4
Sanjana's Drawings	4
Naveen's Drawings	4
Furniture	3
Office Fittings	3
Plant and Machinery	3
Kripa & Co.	3

Cash	3
Bank	3
Bills Receivable	3
Sales	2
Purchases	1
Carriage Inwards	1
Fuel, Power and Electricity	1
Wages	1
General Expenses	1
Rent	1
Salaries	1
Discount Allowed	1
Advertisement	1
Insurance	1

4. The coding scheme of accounts, in this case, is as follows.

First Digit of Account_code	
Categories	
05	Capital
04	Liabilities
03	Assets
02	Revenue
01	Expenditure
Second Digit of Account_code	
Under Capital (5)	
01	Sanjana's Capital
02	Naveen's Capital
Under Liabilities (4)	

Second Digit of Account_code	
Long term Liabilities (41)	
Third Digit of Account_code	
01	—
02	—
03	—
Current Liabilities (43)	
Third Digit of Account_code	
01	Jyoti Bros.
10*	Sanjana's Drawings
This gap in code is provided for flexibility, based on the accounting concept that the business will survive and expand for the years to come.	
11	Naveen's Drawings
13	—
15	—
20	—
Under Assets (3)	
Second Digit of Account_code	
Fixed Assets (31)	
Third Digit of Account_code	
01	Furniture
02	Office Fittings
03	Plant and Machinery
04	—
05	—
06	—
Current Assets (32)	

Third Digit of Account_code	
11	Kripa & Co.
15*	Cash
16	Bank
17	Bills Receivable

This gap in code is provided for flexibility, based on the accounting concept that the business will survive and expand for the years to come.

Under Revenue (2)	
Second Digit of Account_code	
01	Sales

Under Expenses (1)	
Second Digit of Account_code	
Capital Expenditure (11)	
Third Digit of Account_code	
01	—
02	—
03	—
Revenue Expenditure (12)	
Third Digit of Account_code	
01	Purchases
02	Carriage Inwards
03	Fuel, Power and Electricity
04	Wages
10	General Expenses
16	Rent
19	Salaries
24	Discount Allowed
27	Advertisement
29	Insurance

Notes

5. The above codification scheme utilizes the hierarchy used in grouping of accounts. Let us, for example, assume that our hypothetical case adopts a code range of 4 digits. In such a case, the codes will be assigned to the account heads in the following manner. (This may also be noted that we are using these 4 digit account codes for our data base design).

Account_code	*Account Name*
5001	Sanjana's Capital Account
5002	Naveen's Capital Account
4301	Jyoti Bros.
4310	Sanjana's Drawings
4311	Naveen's Drawings
3101	Furniture
3102	Office Fittings
3103	Plant and Machinery
3211	Kripa & Co.
3215	Cash
3216	Bank
3217	Bills Receivable
2001	Sales
1201	Purchases
1202	Carriage Inwards
1203	Fuel, Power and Electricity
1204	Wages
1210	General Expenses
1216	Rent
1219	Salaries
1224	Discount Allowed
1227	Advertisement
1229	Insurance

STRUCTURING OF DATA IN DATABASE

Accounts Table

Code	*Account Name*	*Acc_Type*
5001	Sanjana's Capital Account	5
5002	Naveen's Capital Account	5
4301	Jyoti Bros.	4
4310	Sanjana's Drawings	4
4311	Naveen's Drawings	4
3101	Furniture	3
3102	Office Fittings	3
3103	Plant and Machinery	3
3211	Kripa & Co.	3
3215	Cash	3
3216	Bank	3
3217	Bills Receivable	3
2001	Sales	2
1201	Purchases	1
1202	Carriage Inwards	1
1203	Fuel, Power and Electricity	1
1204	Wages	1
1210	General Expenses	1
1216	Rent	1
1219	Salaries	1
1224	Discount Allowed	1
1227	Advertisement	1
1229	Insurance	1

AccounttypeTable

Cat_Id	*Category*
5.	Capital
4.	Liabilities
3.	Assets

Notes

2.	Income
1.	Expenses

Vouchers Table

V_no	*Debit*	*Amount*	*Vdate (MM/DD)*	*Credit*	*Narration*
A1	3215	5,00,000	04/01	5001	Sanjana commenced business with cash
A2	3215	4,00,000	04/01	5002	Naveen commenced business with cash
A3	3216	4,00,000	04/01	3215	Deposited into bank
A4	1201	1,50,000	04/02	3216	Purchased goods through bank
A5	1202	200	04/02	3215	Carriage inward paid
A6	3211	1,75,000	04/04	2001	Sold goods to Kripa & Co.
A7	1201	2,50,000	04/05	4301	Purchased goods from Jyoti Bros. On credit
A8	3215	45,000	04/06	2001	Sold goods for cash
A9	1227	2,500	04/08	3216	Advertisement expenses paid through bank
A10	3217	1,75,000	04/09	3211	B/R received
A11	1229	5,500	04/17	3216	Insurance paid through bank
A12	1203	1,000	04/18	3215	Electricity charges paid in cash
A13	4310	20,000	04/23	3215	Sanjana's drawings
A14	4310	5,000	04/27	1201	Goods taken for personal use by Sanjana
A15	3101	45,000	04/28	3216	Furniture purchased through bank
A16	1219	9,000	04/30	3216	Salary paid through bank
A17	1210	1,500	04/30	3216	Telephone bill paid through bank
A18	1204	7,000	04/30	3215	Wages paid in cash

Note : The employees table and support table omitted.

INTEXT QUESTIONS 38.1

Fill in the blanks with appropriate words :

i. _____ is the first and most inportant stage while designing database.

ii. _____ are used to be together different entities.

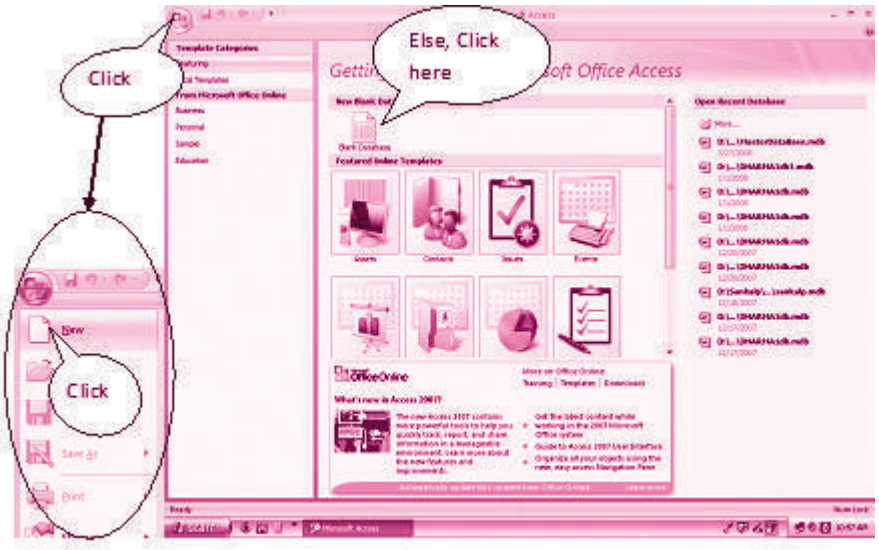
iii. All the accounts can be grouped in _____ categories.

38.3 MICROSOFT ACCESS - INTRODUCTION

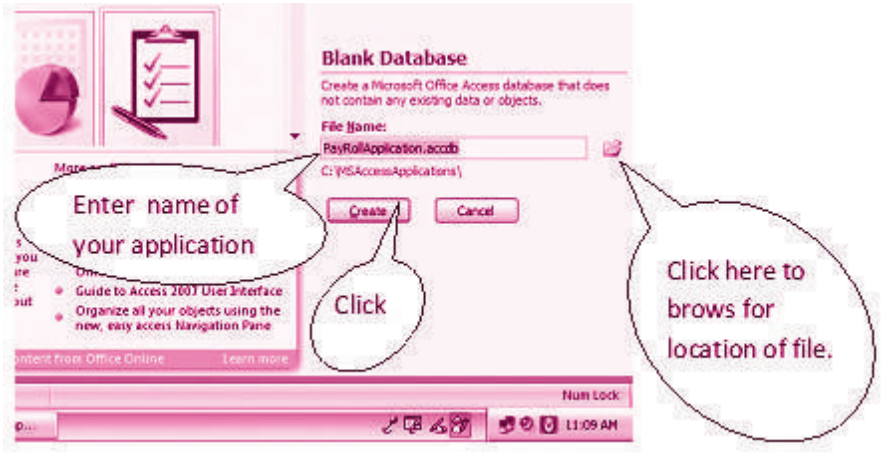
MS Access is one of the popularly used Data Base Management System to create, store and manage database. Access has certain capabilities, which bring it closer to an ideal Data Base Management System (DBMS). Before we take up the task of database design using Access, we will have to first start up the Microsoft Access Application:

Start > All Programs > Microsoft Office > Microsoft Access 2007

Tables, Queries, Forms and Reports are main components of MS Access. Others being Pages, Macros and Modules. The *Table object* enables the designer to create data tables with their respective fieldnames, data types and properties. *Queries* are meant to create the SQL compatible query statement, store data and retrieve both data and information. *Forms object* creates an appropriate user interface to formally interact with the back end database, defined by tables and queries. *Report object* is used to create various reports as per the requirement of the end user. The following pages take you through the graphics on how to start and work on MS Access-2007.



Getting Started with Microsoft Office Access



Dialogue Box for Creating New Database File

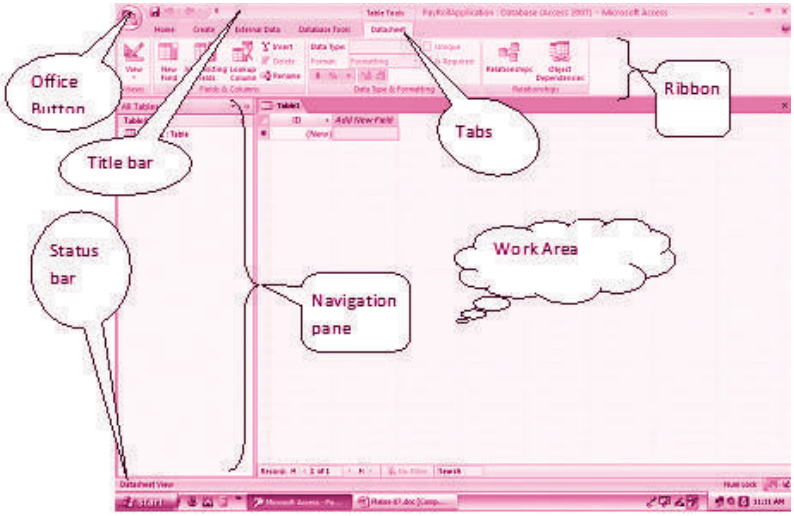
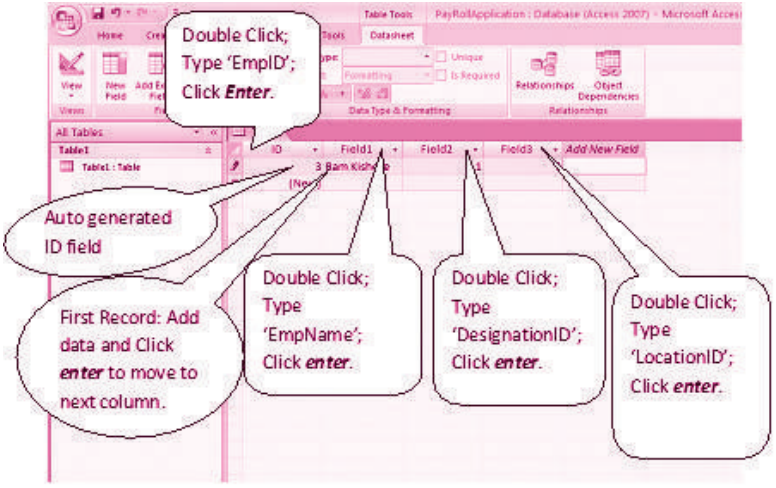
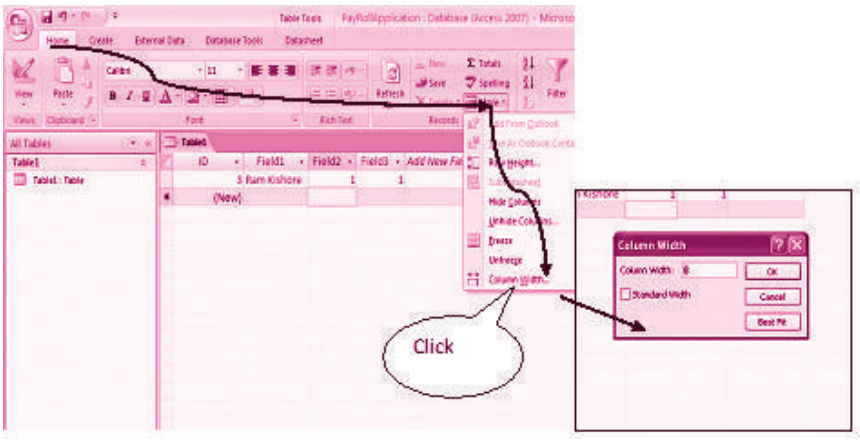


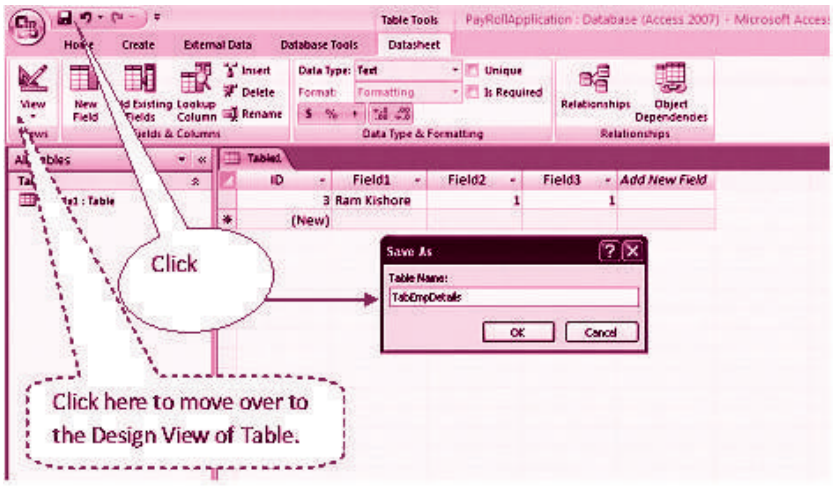
Illustration of the Active Database Window



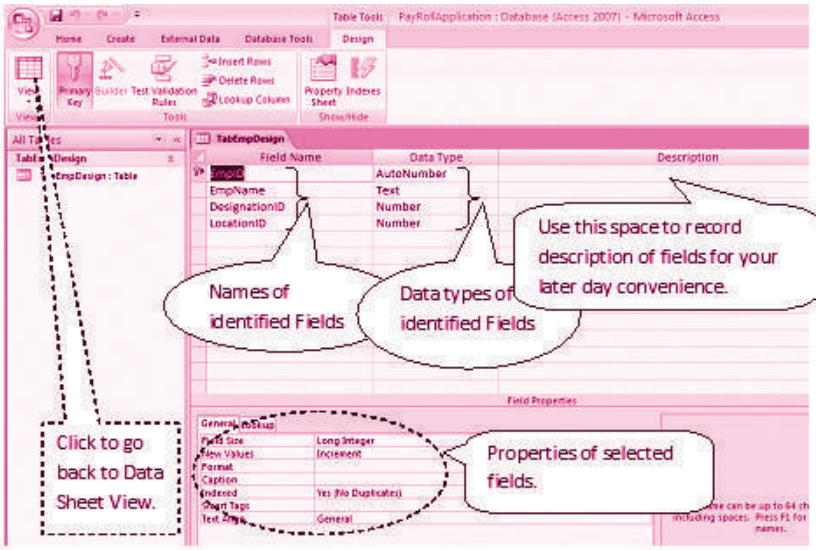
Creating a Table by Adding Records



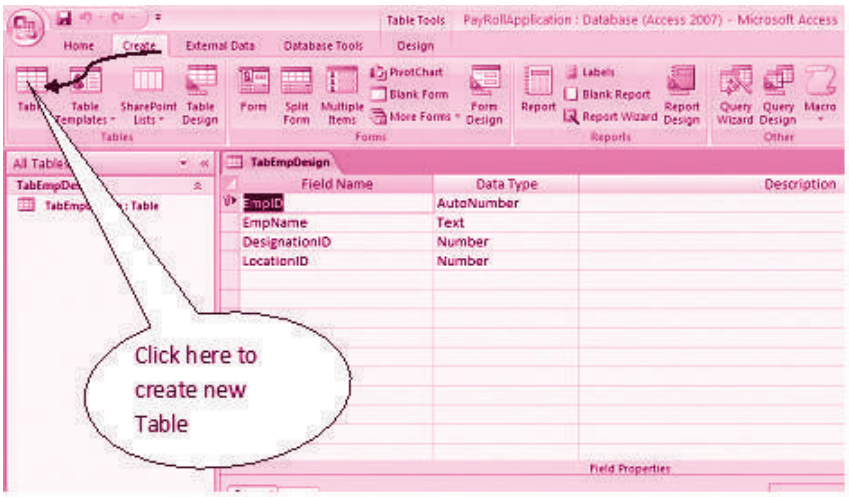
Column width Adjustment



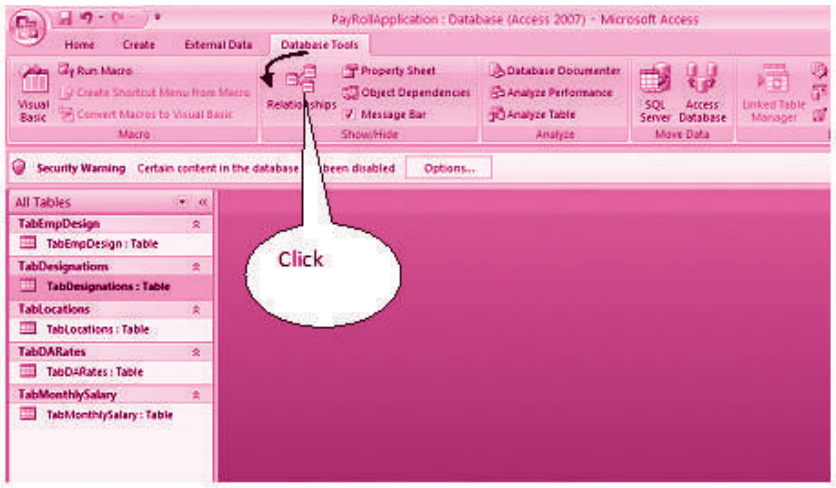
Saving of the Table with intended Name



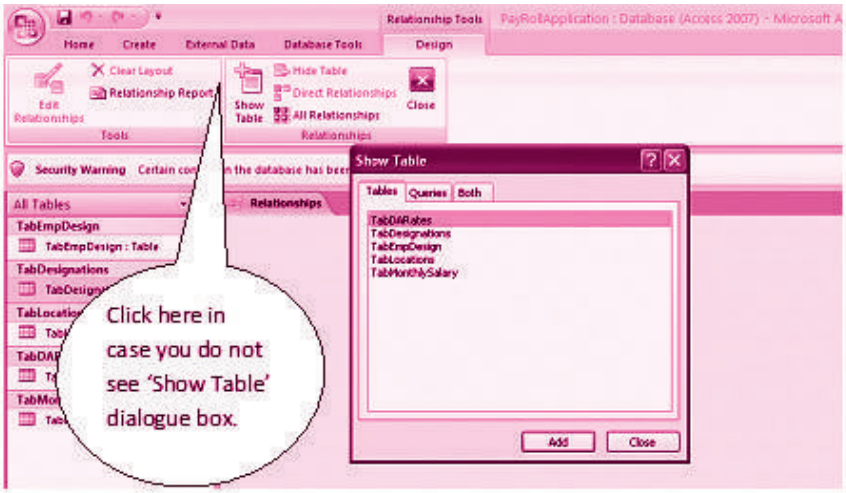
Design View of the Table



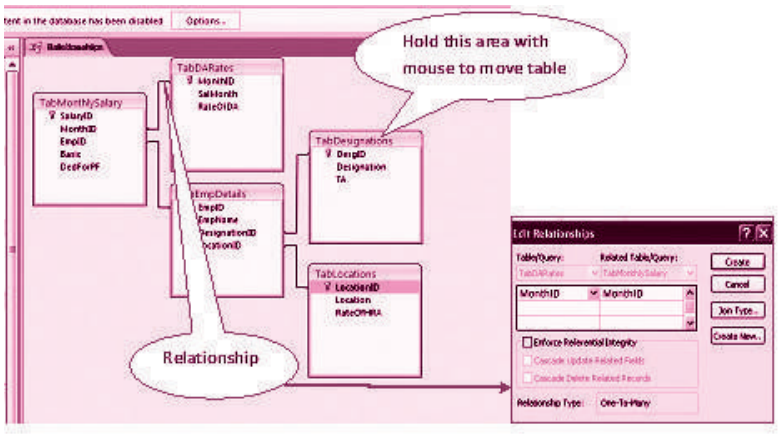
Creating New Table



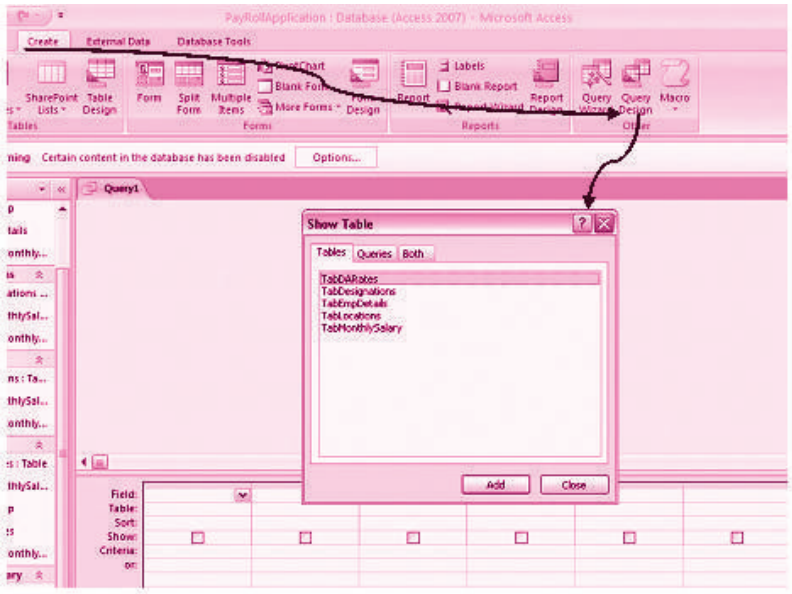
Creating Relationship between Tables



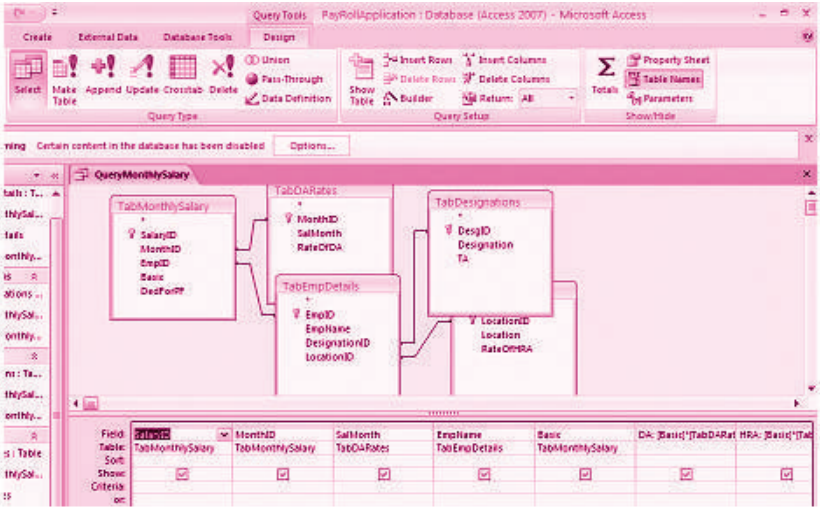
Adding of Tables for establishing relationship between them



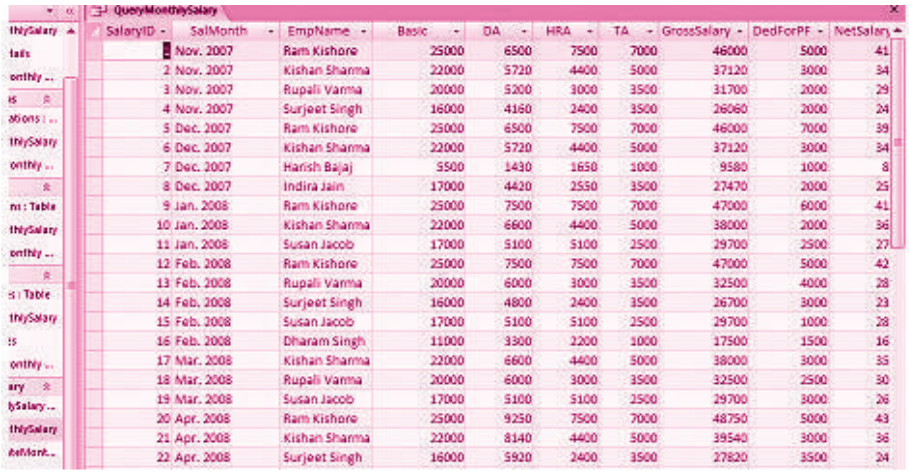
Relationship between different Tables



Creation of Query



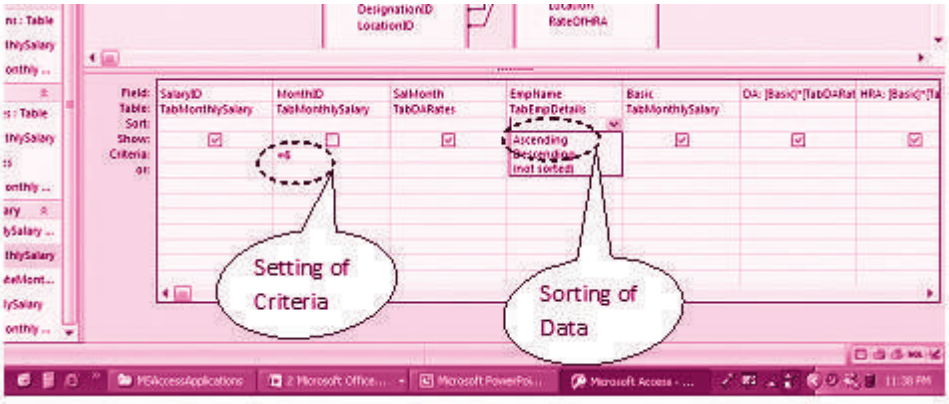
Creation of different Fields in the Query Table



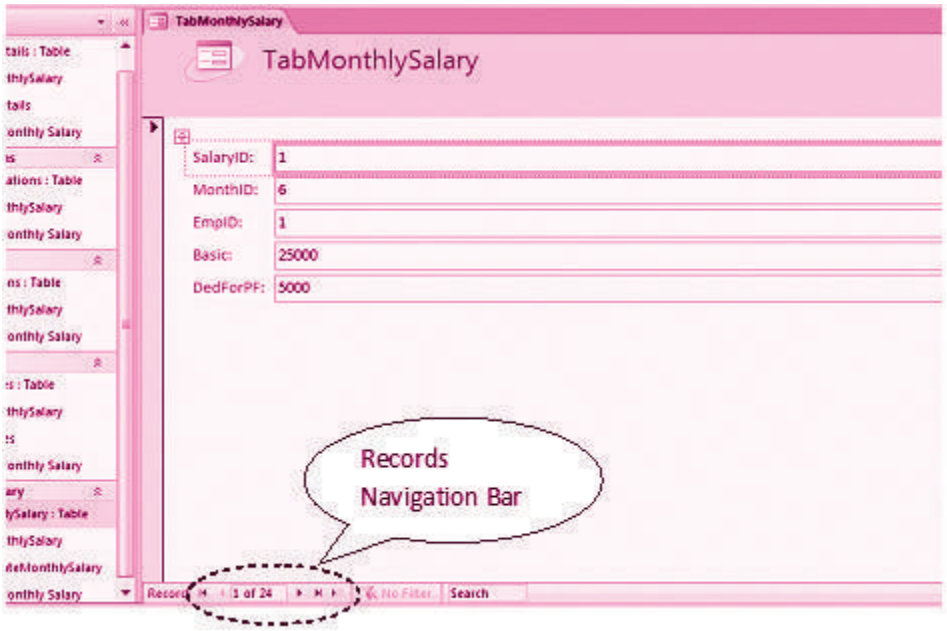
QueryMonthlySalary

SalaryID	SalMonth	EmpName	Basic	DA	HRA	TA	GrossSalary	DedForPF	NetSalary
1	Nov. 2007	Ram Kishore	25000	6500	7500	7000	46000	5000	41
2	Nov. 2007	Kishan Sharma	22000	5720	4400	5000	37120	3000	34
3	Nov. 2007	Rupali Varma	20000	5200	3000	3500	31700	2000	29
4	Nov. 2007	Surjeet Singh	16000	4160	2400	3500	26060	2000	24
5	Dec. 2007	Ram Kishore	25000	6500	7500	7000	46000	7000	39
6	Dec. 2007	Kishan Sharma	22000	5720	4400	5000	37120	3000	34
7	Dec. 2007	Harish Bajaj	5500	1430	1650	1000	9580	1000	8
8	Dec. 2007	Indira Jain	17000	4420	2550	3500	27470	2000	25
9	Jan. 2008	Ram Kishore	25000	7500	7500	7000	47000	6000	41
10	Jan. 2008	Kishan Sharma	22000	6600	4400	5000	38000	2000	36
11	Jan. 2008	Susan Jacob	17000	5100	5100	2500	29700	2500	27
12	Feb. 2008	Ram Kishore	25000	7500	7500	7000	47000	5000	42
13	Feb. 2008	Rupali Varma	20000	6000	3000	3500	32500	4000	28
14	Feb. 2008	Surjeet Singh	16000	4800	2400	3500	26700	3000	23
15	Feb. 2008	Susan Jacob	17000	5100	5100	2500	29700	1000	28
16	Feb. 2008	Dharam Singh	11000	3300	2200	1000	17500	1500	16
17	Mar. 2008	Kishan Sharma	22000	6600	4400	5000	38000	3000	35
18	Mar. 2008	Rupali Varma	20000	6000	3000	3500	32500	2500	30
19	Mar. 2008	Susan Jacob	17000	5100	5100	2500	29700	3000	26
20	Apr. 2008	Ram Kishore	25000	9250	7500	7000	48750	5000	43
21	Apr. 2008	Kishan Sharma	22000	8140	4400	5000	39540	3000	36
22	Apr. 2008	Surjeet Singh	16000	5920	2400	3500	27820	3500	24

Datasheet View of the Query



Seeting of Criteria and Sorting of Data in a Query



Creation of Form

INTEXT QUESTIONS 38.2

Fill in the blanks :

i. _____ are meant to create the SQL compatibel query statement, store data and retrieve both data and information.

ii. _____ is used to create various reports as per the requirement of the end user.

iii. _____ has certain capabilities, which bring it closer to an ideal Database Management System.

38.4 CREATING TABLES IN ACCESS

Follow the following steps to create Tables in Access

1. Click at *Tables* object of Access followed by double click at create *table by design view*. A table window appears which has three columns: Field Name (*refers to the column name of the table being created.*), Data Type (*attribute of each defined column, refer figure 2*) and Description (*It is optional and the designer can provide description of the column for clarity.)*. Here you define the structure of the Table.

Text	It is used for a string of characters i.e., words or numbers not subjected to any kind of arithmetical calculations. The maximum length for a text field is 255 characters.
Memo	Used for storing comments and accommodates 65,536 characters.
Number	*Stores numbers and are subjected to arithmetical calculations.*
Date/Time	Stores dates, times or a combination of both.
AutoNumber	*It is a numeric data automatically entered by Access.*
Currency	Stores numbers in terms of Dollars, Rupees or other currencies.
Yes/No	Declares a logical field which may have only one of the two opposite values alternatively given as Yes or No.
OLE object	Stands for Object Linking and Embedding, Refers to object such as photograph, bar code, image or any other document created in another application.
Hyperlink	This data type stores Universal Resource Locator (URL) and email addresses.

2. Once the data types is specified, Access allows designer to define properties of each column. In the context of text data type, the general properties relate to:

Field size	Refers to the maximum number of characters allowed in each column. In case of numbers, it refers to the type of numbers being stored as per the requirements.
Format	Indicates as to how the field's contents are displayed.
Decimal places	Applies to single, double or decimal types of numbers.
Input mask	Formats data entry that includes punctuation. It works only for text and date type fields.
Caption	It is a label used for the field in datasheet and on forms and reports.
Default value	It is used for specifying a value for new entries of data records.
Validation rule and text	Checks data to eliminate incorrect entries. Validation criteria is specified for this property. If the entered data does not satisfy the validation criteria, the validation message is displayed.
Required and Indexed	Required property must be provided value Yes/ No. Indexing a field results in speeding up sorting, searching and filtering of records on that field.
Allow zero length	This property is available only for text fields. Setting it to Yes/No determines whether a text string with zero length is a valid entry or not.

INTEXT QUESTIONS 38.3

Fill in the blanks :

i. Memo is used for storing comments and accommodates _____ characters.

ii. OLE object stands for _____.

iii. _____ formats data entry that includes punctuation. It works only for text and date type fields.

iv. _____ is a label used for field in datasheet vie and on forms and reports.

Skill Review 1

1. Adjusting Column Widths; Finding and Editing Records; Adding and Deleting Records

a) Start Access and open the Employee1.accdb database.

b) Create Employees table.

c) Adjust all columns to Best fit.

d) Fill in the table with data.

e) Use FIND command to locate the records. Edit Salary, Date of Birth, Hire Date.

f) DELETE record.

g) Add new records to the table.

2. Sorting and Filtering

a) With Employee1.accbd file, open the employees table.

b) Sort the table in ascending order by Last_Name.

c) Sort the table in descending order by Annual_Salary.

d) Sort the table in ascending order first by Department and then by Last_Name.

e) Preview the table in the Print preview window.

f) Filter table to display only those employees who work in the European distribution department.

g) Close the database.

3. Mr. Jai Prakash, instructor in the Theatre Arts Division, has been called out of town to attend a family matter. The grades for Middle semester II have to be entered into the database by the end of the today. Jai has provided you with the following grades:

Seema	A+	Kavita	C
Meena	C	Asha	A
Sarika	B+	Babita	B+
Aashita	D	Jaya	A
Tannu	C	Mamta	B
Susan	A+	Richa	C+

To Do:

a) Open Grades 1.accdb database.

b) Create Middle semester II table

c) Adjust column widths to *Best fit*.

d) Enter the grades provided in Step1 in the appropriate columns.

e) Preview table.

f) Close the table.

g) Close the database.

4. Creating the Job Search Company Database

a) You are starting to plan for your job search after graduation. You decide to maintain a database of company information in Access.

b) Search the Internet for at least eight companies in your field of study. Include company name, address, telephone and fax numbers and a contact person in their human resource department, if possible.

c) Open jobsearchcompanyinfo.accdb database.

d) Open the companyinformation table.

e) Enter at least eight records for the companies you researched on the internet.

f) Adjust column widths as necessary.

g) Sort the records in ascending order by the company name field.

h) Preview the table.

i) Format all records to a smaller font size.

j) Change the page layout to fit the table on one page.

k) Save the file.

l) Close the database.

5. Create Employee2.accdb database and enable content.

a. Create a table .Enter the following details:

Field Name	Data Type
Employee_No	Text
Supervisor_LastName	Text
Supervisor_FirstName	Text
Annual_Review_Date	Date/Time
Salary_Increment_Date	Date/Time
No_Teaching_Periods	Number

b. Define Employee_No as the primary key field.

c. Save the table and name it Annual_Review

d. Switch to Datasheet view and then enter the following two records:

Field Name	Data Value1	Data Value 2
Employee_No	1015	1030
Supervisor_LastName	Sharma	Gupta
Supervisor_FirstName	Anand	Dipankar
Annual_Review_Date	5/20/09	1/23/09
Salary_Increment_Date	7/01/09	3/02/09
No_Teaching_Periods	2	10

1. Adjust all columns to Best fit.
2. Save changes to the datasheet layout.
3. Switch to design view and then make the following changes to the field properties:
   a. Change the field size for the *Employee_No* to 4.
   b. Create a validation rule for the *No_Teaching_Periods* field to ensure that no number is greater than 10 is entered into the field. Enter an appropriate validation text error message.
   c. Save the table, click yes at each message that indicates same data may be lost, and test data with new validation rule.
   d. Save the table. Switch to data sheet view and add the following two records.

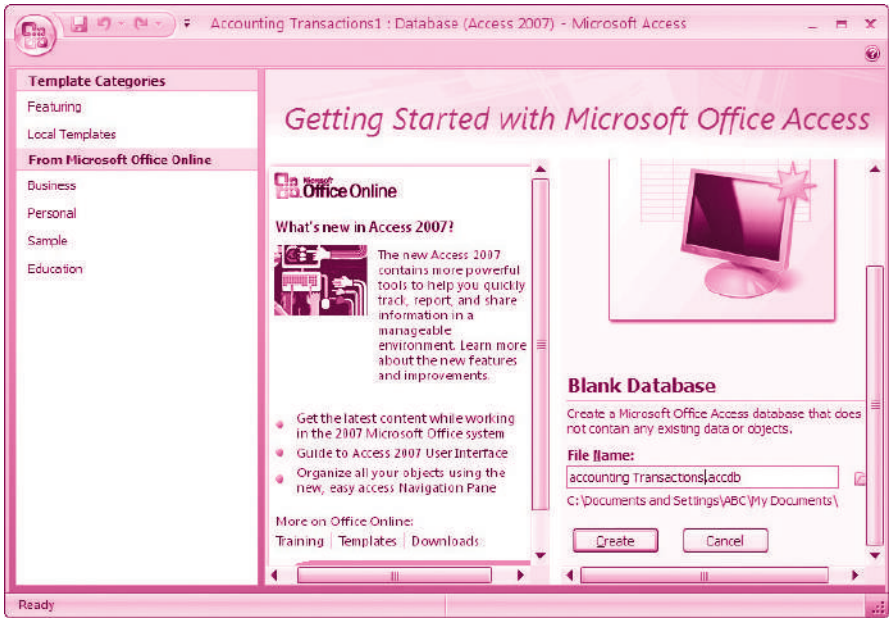
Field Name	Data Value1	Data Value 2
Employee_No	1035	1040
Supervisor_LastName	Faroqui	Jacob
Supervisor_FirstName	Samaira	Ann
Annual_Review_Date	14- March-09	10-March-09
Salary_Increment_Date	01-May-09	01-May-09
No_Teaching_Periods	8	6

4. Display the datasheet in print preview.
5. Change page orientation to landscape.
6. Close print preview and close Annual _Review table.

38.5 CREATING ACCOUNTING DATABASE FOR UNIQUE ELECTRONICS (USING MS ACCESS- 2007)

Using our conceptual design for Unique Electronics, we will now design a database for recording accounting transactions.

1. Create file Accounting Transaction



2. Create Table1, Table 2 and Table 3 and save as Account type, Accounts and Vouchers respectively.

3. In the design view, define the data fields as shown below:

Table: Accounts

Field 1: code	[Primary key, Text]
Field 2: acc_name	[Text]
Field 3: acc_type	[Number]

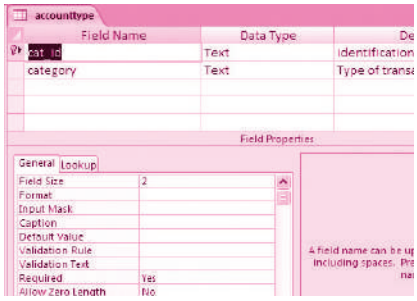


Table: Account type

Field 1: cat_id	[Number]
Field 2: category	[Text]

Table: Vouchers

Field 1: v_no	[primary key, Text]
Field 2: v_date	[Text]
Field 3: dr_code	[Number]
Field 4: cr_code	[Date/Time]
Field 5: dr_acc_name	[Text]
Field 6: cr_acc_name	[Text]
Field 6: Narration	[Text]
Field 7: Amount	[Number]

4. Fill in the data in the tables.

Vouchers | Accounts | AccountType

Code	Acc_Name	Acc_Type
1201	Purchases	1
1202	Carriage Inwards	1
1203	Fuel, Power and Electricity	1
1204	Wages	1
1210	General Expenses	1
1216	Rent	1

Vouchers | Accounts

Cat_Id	Category
1	Expenses
2	Income
3	Assets
4	Liabilities
5	Capital

Vouchers | Accounts | AccountType

Vno	Debit	Amount	Date	Credit	
A1	3215	500,000	01-Apr-12	5001	Sar
A10	3217	175,000	09-Feb-12	3211	B/F
A11	1229	5,500	17-Feb-12	3216	Ins

Access basics for creating Forms

A Form in Access is designed for data entry, display of data stored in database, editing existing data and adding new data records.

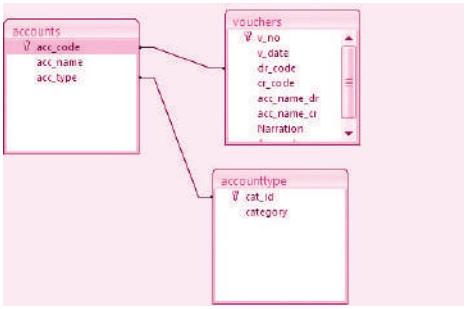
- Data Entry: Form is used for entering, editing and displaying data
- Application flow: Forms are used for navigating through an application.
- Printing information: It can be used for providing hard copies of data entry information.

5. Establish a relationship between tables.

Having completed the designs of all data tables, the relationships are established between different tables.

Click at: ***Database tools*** → ***Relationships*** → ***Show/Hide***

In the **Show Table** dialog box, select a table and click ***Add.*** Add all the tables in the relationship window and close the box by clicking ***Close*** button. In the working area, all the tables will be shown along with their defined field names.



6. Create query and Generate Reports

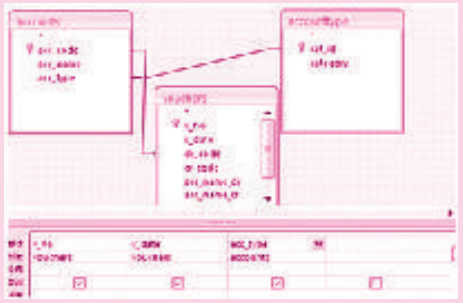
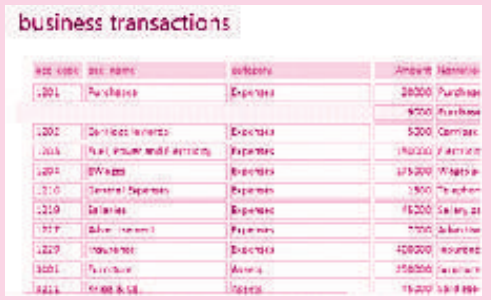
Query provide real power to a database in terms of its capabilities to respond to user requests. In case of Access, Queries combines data from multiple tables and placing specific conditions for the retrieval of data.

Click on : ***Create*** → ***Query Design***

A ***Show Table*** dialog box appears with a ***Query Table*** in the back ground. In the Show Table dialog box, select a table and click ***Add*** button to add it in the relationship window. Close the show Table dialog box by clicking ***Close*** button. In the working above ***the Query Table*** you will notice the table objects with complete list of their fields along with the relationships established earlier. In the portion below the Table object, you will see the blank columns that represent columns in the query results datasheet, also called ***Design Grid***. Carefully fill different fields from Table object into the design grid in the same order in which we want to display in our query results.

Click : ***Run*** button under ***Results*** group of ***Design*** Tab to see the query results.

An accounting system without reporting capability is incomplete. Reporting is one of the main objectives for which an accounting system is designed, implemented and operated. There are two formats of presenting information through reports: Columnar and Tabular. Columnar and tabular format displays the caption of each field on a separate line in a single column down the page. A tabular format displays the caption of fields on the same line so that respective information contents appear in the next line.

Creation of queries	*Accounting reports*
	

Skill Review 2

Accounting Tasks for preparing Purchase Journal for an organisation

I Preparation of purchase journal: conceptual design

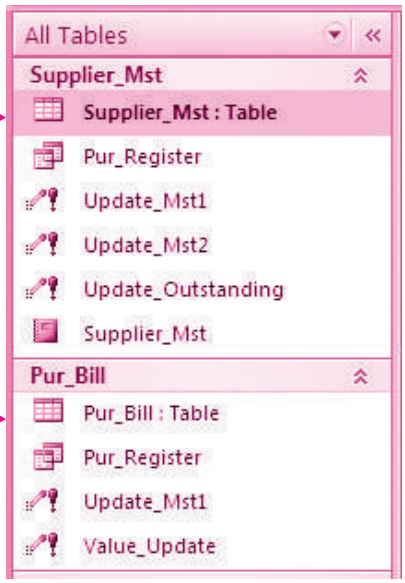
Step 1: Create Tables

Table 1: Supplier_Mst

Sup_code [Primary Key]	Number	
Sup_nameText	25	
Tot_Pur_Amt	Number	Decimal
Tot_Amt_Paid	Number	Decimal
Outstanding_Amt	Number	Decimal

Table 2: Pur_Bill

Pur_vr_no [Primary Key]	Number	Long Integer
Pur_vr_Date	Date/Time	Short date
Sup_code Number	Long Integer	
Qty	Number	Decimal
Rate	Number	Decimal



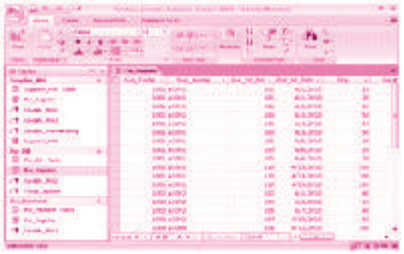
Bill_Amt	Number	Decimal
Updated	Yes/No	

Table 3: Pur_Payment

Pay_vr_no [Primary Key]	Number	Long Integer
Pay_vr_Date	Date/Time	Short date
Sup_code Number	Long Integer	
Amt_paid Number	Decimal	
Updated	Yes/No	

Step 2 : Maintain updated Purchase Register

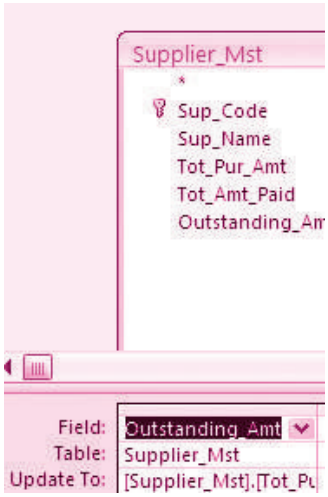
1. Since the purpose is to prepare the updated purchase register for the day, the **Table Supplier_Mst** has to be updated automatically with the occurrence of the every new transaction.



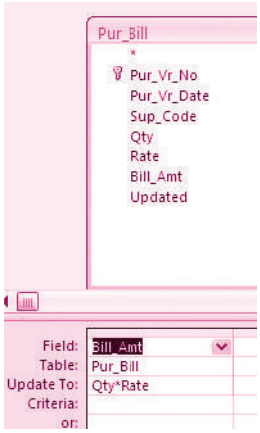
2. Every new transaction is recorded through the Table Pur_bill and has to be updated accordingly for the updation of Supplier_Mst Table. For this, we will be using the query type: UPDATE for the calculation of

   i. bill_amt *(save the query as 'Value_update'; refer figure-)*

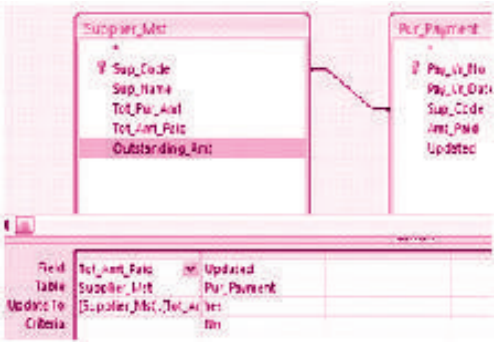
   ii. Outstanding_Amt (*save the query as ' update outstanding'; refer figure)*



3. [Supplier_Mst].[Tot_Pur_Amt]-[Supplier_Mst].[Tot_Amt_Paid]



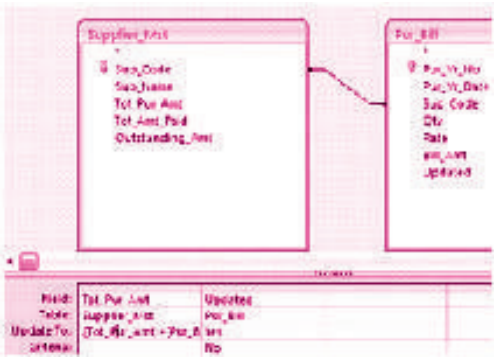
4. Similarly, the Table Pur_payment also updates the Table Supplier_Mst for the outstanding amount due to the suppliers. For this, we will be using the query type: UPDATE as shown in figure—— for the calculation of outstanding amount. The formula used will be:



[Supplier_Mst].[Tot_Amt_Paid] + [Pur_Payment].[Amt_Paid]

(Save the query as Update_Mst2)

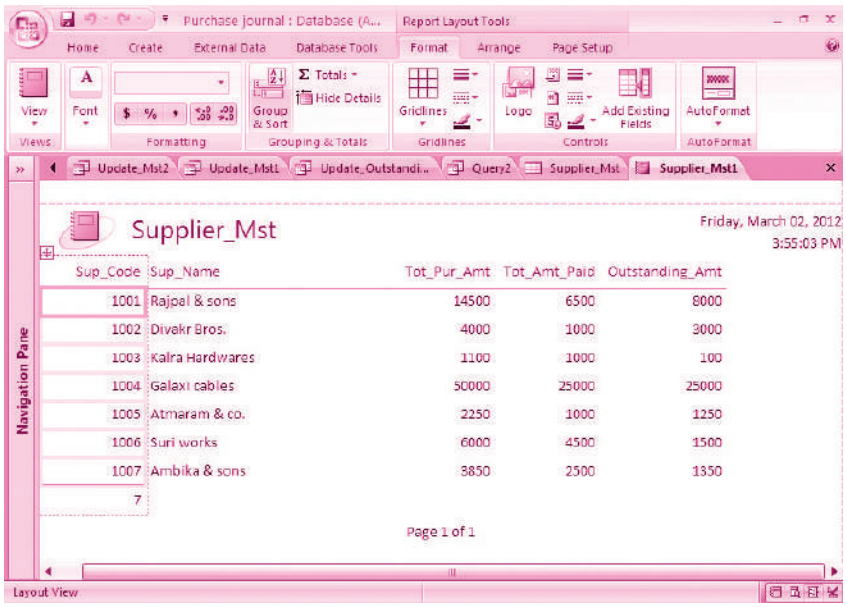
5. Since the Master Table should contain the information of total purchases made by a specific supplier, which in our case is Table Supplier_Mst , we will now create a UPDATE query. The formula used will be:



[Supplier_Mst].[Tot_Pur_Amt] + [Pur_Bill].[Bill_Amt]

(Save the query as Update_Mst1)

In this manner, the purchase book can be generated for a business organisation as shown below:



Supplier_Mst

Friday, March 02, 2012
3:55:03 PM

Sup_Code	Sup_Name	Tot_Pur_Amt	Tot_Amt_Paid	Outstanding_Amt
1001	Rajpal & sons	14500	6500	8000
1002	Divakr Bros.	4000	1000	3000
1003	Kalra Hardwares	1100	1000	100
1004	Galaxi cables	50000	25000	25000
1005	Atmaram & co.	2250	1000	1250
1006	Suri works	6000	4500	1500
1007	Ambika & sons	3850	2500	1350
7				

Page 1 of 1

Notes

Skill Review 3

Preparing Sales Register for an organisation

1. Open the database file sales.acdb in the attached CD and enable the content
2. Create the following tables and define fields (as shown in figure—)
3. Generate the Sales Register

Table 1:		
Sup_code [Primary Key]	Number	
Cus_name	Text	25
Tot_sales_Amt	Number	Decimal
Tot_Amt_Recd	Number	Decimal
Outstanding_Amt	Number	Decimal
Table 2: sales_Bill		
sales_vr_no [Primary Key]	Number	Long Integer
sales_vr_Date	Date/Time	Short date
cus_code	Number	Long Integer
Qty	Number	Decimal
Rate	Number	Decimal
Bill_Amt	Number	Decimal
Updated	Yes/No	
Table 3: Sales_Receipt		
receipt_vr_no [Primary Key]	Number	Long Integer
receipt_vr_Date	Date/Time	Short date
cus_code	Number	Long Integer
Amt_recd	Number	Decimal
Updated	Yes/No	

INTEXT QUESTIONS 38.4

Multiple Choice Questions :

i. 'DBMS' stands for :

a) Drawing Board Management Software

b) Dividend Based Marking System

c) Data Base Management System

d) Data base Marking Software

ii. MS Access is a :

a) Word processing Software b) Presentation Software

c) Spread Sheet Software d) Data Base Management Software

iii. The term 'field' as applied to database table means :

a) Vertical column of the table b) Size of the table

c) Horizontal row of the table d) Name of the table

iv. SQL stands for :

a) Simple Questions Language b) Simple Que line up

c) Singular Quantity Loading d) Structured Query Language

v. The default extension of MS Access (2007) file is :

a) .accbd b) .exl c) .doc d) .exe

vi. In order to retrieve select data meeting a specified criteria from two different tables of Access database, we may make use of :

a) Table b) Query c) Form d) Report

vii. To expect a well formatted printable data from Access database, we may use :

a) Table b) Query c) Form d) Report

WHAT YOU HAVE LEARNT

- Database Management System (DBMS) provides a variety of software tools for organising, processing and querying data in a flexible manner.

Notes

- In DBMS, data is organised in tables (similar to a file). A table has a number of rows (or records) and columns (or fields or attribute). Each row contains a records of information, for example of an account head or a party or a transactions as per the need. The information in a row consists of a sequence of columns or attributes, such as transaction number, transaction date, etc, or it could be party's name, party's address, etc.
- One of the tasks in analysis of requirement is to identify and list out the information required including its elements. These elements of information become columns (attributes) in appropriate tables.
- Data (set of attributes) should be logically structured so as to put them in various tables. The goal of such structuring is to reduce data redundancy, to achieve data consistency as well as to enhance efficiency for adding, updating and querying operations on database. Data redundancy can be removed by normalisation process.
- Since the data stored in different tables may be related, such relationship is implemented by establishing links between tables. The database created on the basis of such relationships between different tables is called relational database.
- Relationship between tables is established with the help of primary key and foreign key. Primary key consists of minimum possible one or more than one attributes of a table, which uniquely identifies each row of that table. Foreign key consists of set of attributes, which from primary key in another (related) table.
- Most of Computerised Accounting Systems are multi-user systems. These systems use 'server database' unlike single-user (or desktop) systems using 'desktop database'. In a multi user system, a user interacts with the software though the user interface, which is also termed as 'front-end'. Database, which is kept on a server, is termed as a 'back-end'.
- MS-Access is an example of 'desktop database'. Oracle, SQL Server, IBM-DB2 is examples of 'server databases', Desktop databases may be satisfactory for SOHO (Small Office Home Office) organisations as they offer inexpensive and simple solutions to many of business data storage and processing requirements.
- In order to provide security and consistency of data, database is not directly accessible to users. Any addition or retrieval of information from database is done by user-friendly programs. Database is thus rightly referred to as 'back-end' while the interactive program, that includes user interface, is termed as 'front-end' of a database application.

TERMINAL EXERCISE

1. What do you understand by DBMS. Give names of two commonly available DBMS software?
2. With suitable example, illustrate the meaning of 'attributes' as applied to database?
3. Why do we seek to split up information into different tables rather than confine it to a single table?
4. What do you understand by terms 'key field', 'primary key' and 'secondary key' in a database?
5. List the conventions that you will follow, while naming different fields of a table?
6. What are the uses of 'query' object in Access program?
7. What do you understand by 'Form' object in Access and how are they useful?
8. What is the purpose of 'report' object in Access program?
9. What do you understand by database? What are the ways in which data is stored and queried in an Access database?
10. What are the advantages of Access over Excel?
11. Describe in brief the function of 'Table', 'Query', 'Form' and 'Report' object of Access program?

ANSWERS TO INTEXT QUESTIONS

38.1 i. requirement analysis ii. relationships iii. five

38.2 i. queries ii. report object iii. access

38.3 i. 65536 ii. object linking and embedding
iii. Input mask iv. caption

38.4 i. c ii. d iii. a iv. d v. a vi. b vii. d