



Computer Applications II

San Pedro Junior College

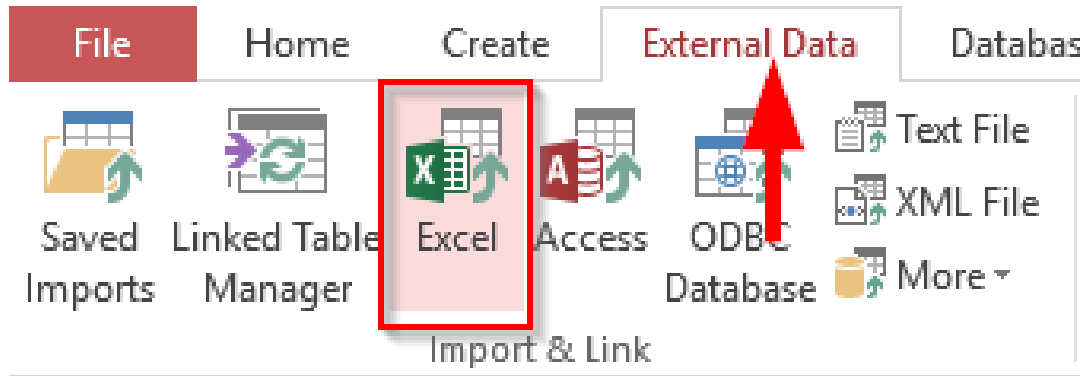
Lecturer: Martin Santos



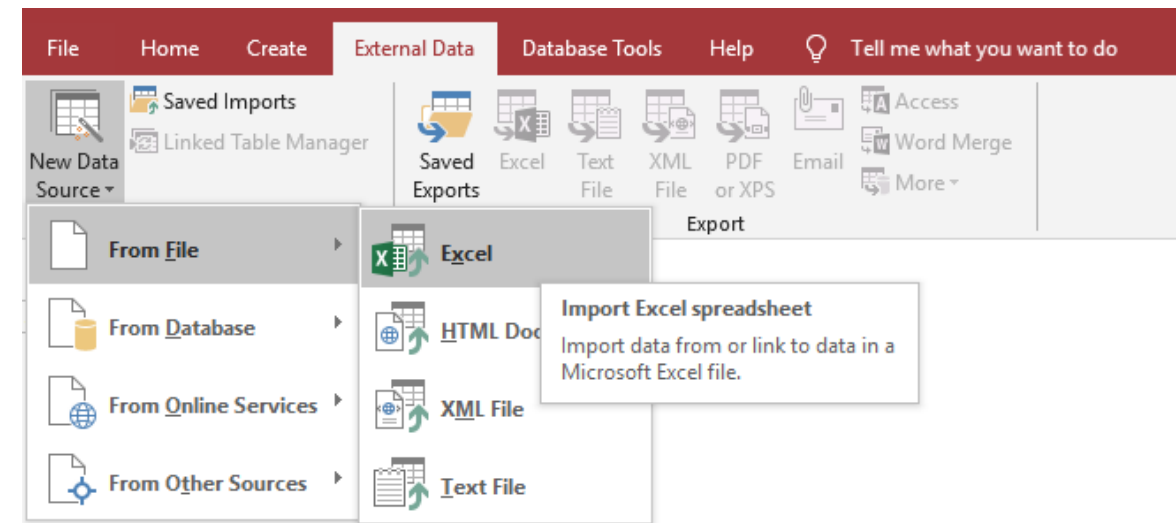
Import Excel Into Access 2016

- Open Access 2016/2019 database, click on the **external data** in the ribbon and select **Excel** in the **import & link** command.

ACCESS 2016



ACCESS 2019



Import Excel Into Access 2016

- In the file name, **browse** to the excel file which has to be imported into the table.



- There are **three** ways in to specify how and where we need to **store the data in the current database**.
- If we want to create a **table** and insert the imported Excel data into it, check on **import the source data into a new table in the current database** and click **OK**.

Import Excel Into Access 2016

Specify the source of the definition of the objects.

File name:

Specify how and where you want to store the data in the current database.

☒ **Import the source data into a new table in the current database.**
If the specified table does not exist, Access will create it. If the specified table already exists, Access might overwrite its contents with the imported data. Changes made to the source data will not be reflected in the database.

☐ **Append a copy of the records to the table:**
If the specified table exists, Access will add the records to the table. If the table does not exist, Access will create it. Changes made to the source data will not be reflected in the database.

☐ **Link to the data source by creating a linked table.**
Access will create a table that will maintain a link to the source data in Excel. Changes made to the source data in Excel will be reflected in the linked table. However, the source data cannot be changed from within Access.

Import Excel Into Access 2016

- If your Excel spreadsheet has column headings mark the **First Row Contains..** check box; then hit **Next**.

Microsoft Access can use your column headings as field names for your table. Does the first row specified contain column headings?

☒ First Row Contains Column Headings

	Name	Marks	CGPA
1	John	65	6.5
2	Michel	74	7.4
3	Smith	51	5.1
4	Bailey	49	4.9

- Then select each column to modify the field name and data type if needed.
- Hit **Next**

Field Options

Field Name: Data Type:

Indexed: ☐ Do not import field (Skip)

	Name	Marks	CGPA
1	John	65	6.5
2	Michel	74	7.4
3	Smith	51	5.1
4	Bailey	49	4.9

Import Excel Into Access 2016

- Now select if we need **primary key** option in your table.
- Select the, check on **No primary key**.

Microsoft Access recommends that you define a primary key for your new uniquely identify each record in your table. It allows you to retrieve data

☒ Let Access add primary key.

☐ Choose my own primary key.

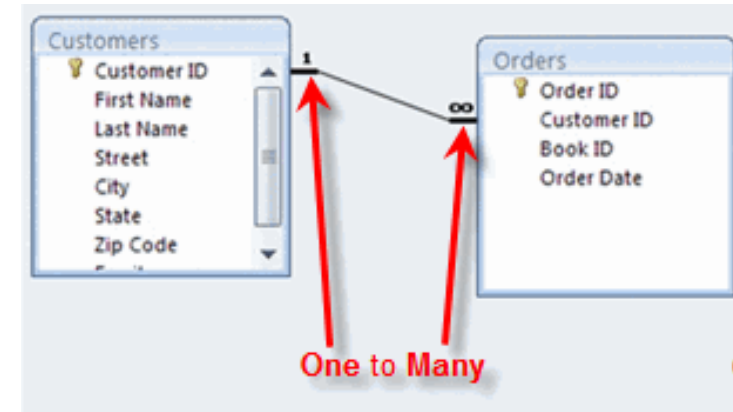
☐ No primary key.

ID	Name	Marks	CGPA
11	John	65	6.5
22	Michel	74	7.4
33	Smith	51	5.1
44	Bailey	49	4.9

- Click **Finish**

Relationships - Access 2016

- When you define a relationship in Access, you relate data from one table to another. By doing this, you are linking your tables together so you can perform queries and extract specific data from multiple tables all at once.
- There are three (3) types of relationships:
 1. A **one-to-many** relationship
 2. A **many-to-many** relationship
 3. A **one-to-one** relationship

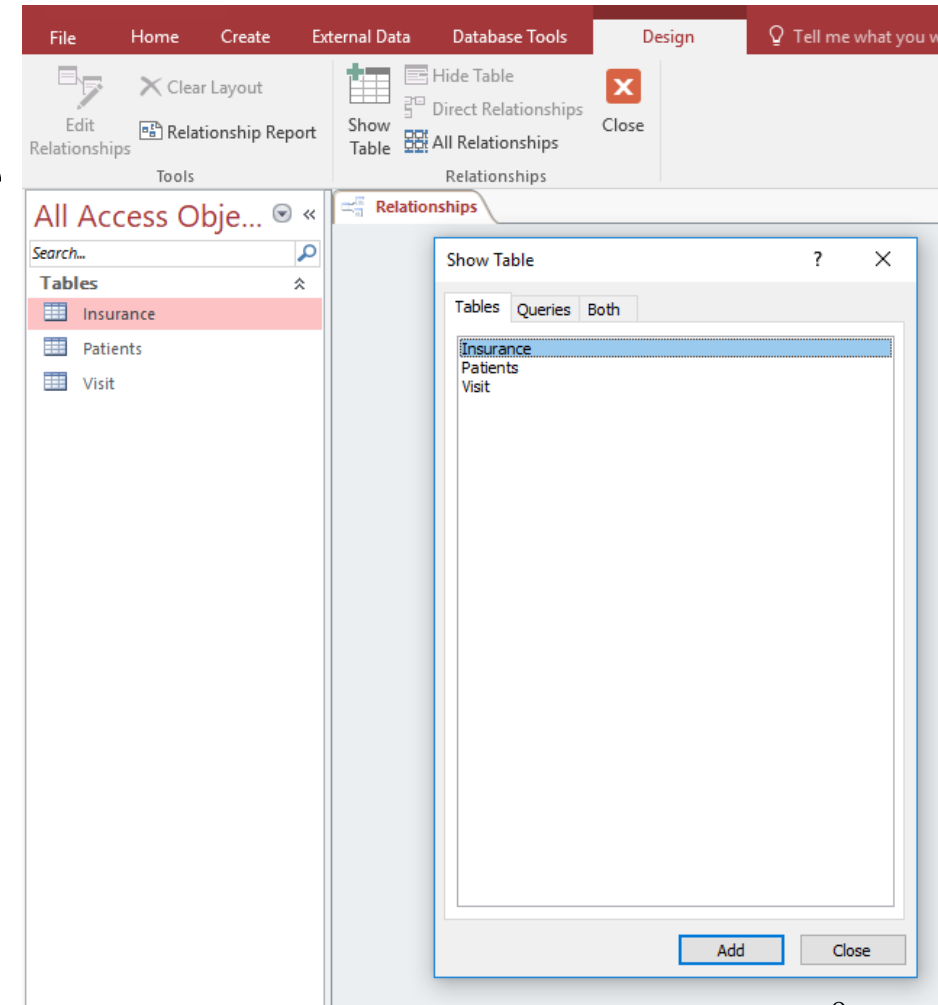


Relationships - Access 2016

- A **primary key-foreign key relationship** defines a **relationship between** two tables in a database. A **foreign key** is a field in one table that references the **primary key** in another table.
- To create a **primary key-foreign key relationship** one of the field must be **set as a primary key** and both fields must be the **same data type**.

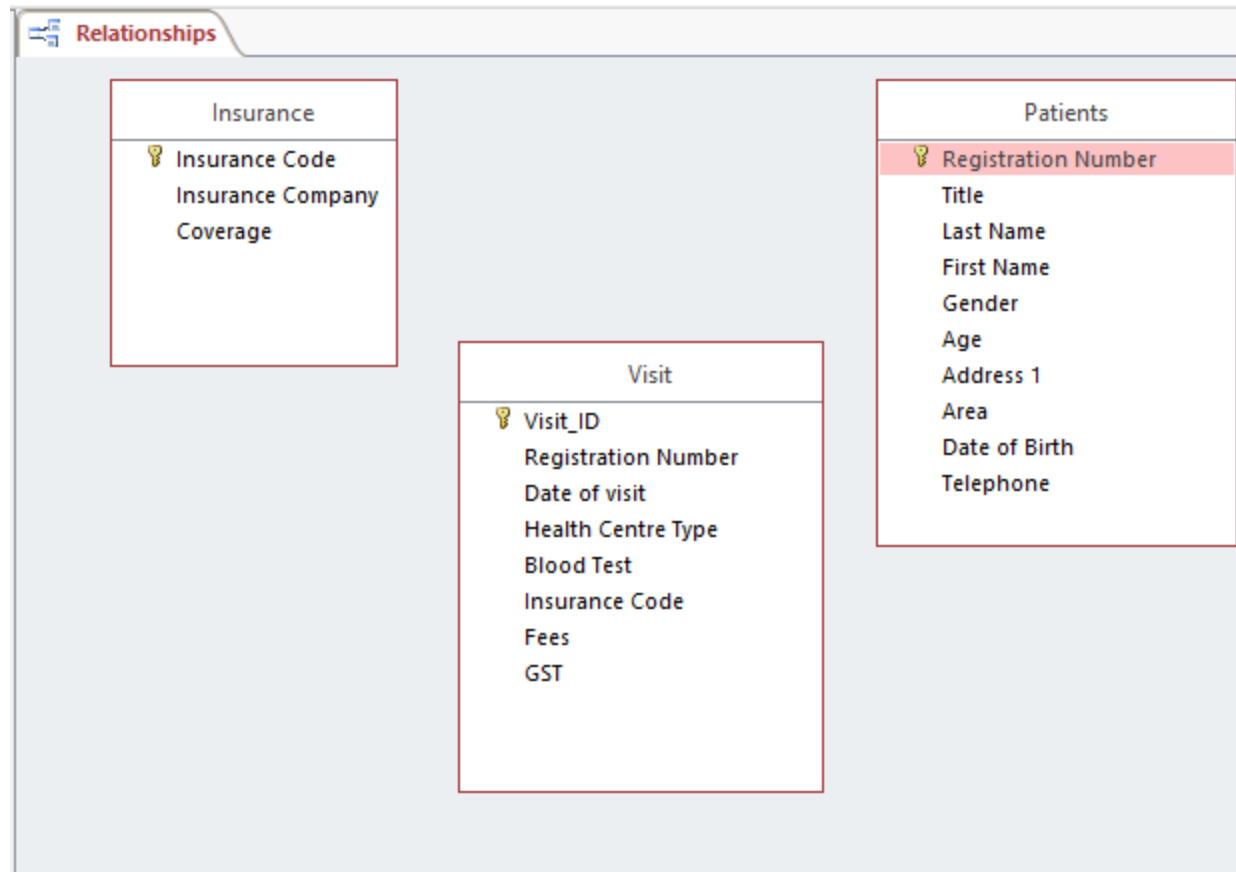
Creating a Relationship

- Click the Database Tools tab on the Ribbon
- From the Relationships group, click the Relationships icon.
- A Design tab will appear
- For each table you want in the relationship, click the table and then click Add.



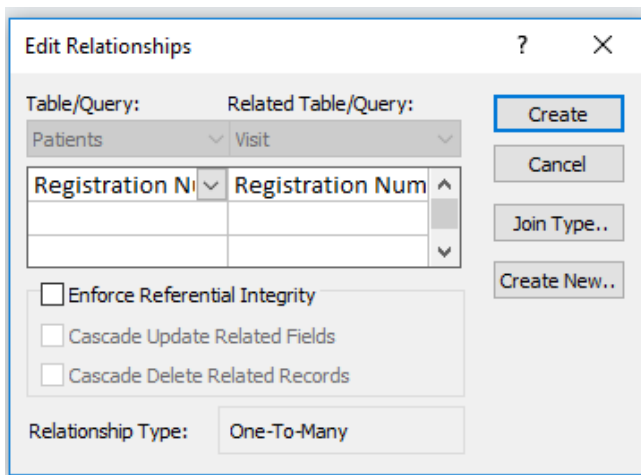
Creating a Relationship

- After you finish adding tables, click the Close button.



Creating a Relationship

- Put the mouse pointer on the **primary key field** and click/hold the left mouse button.
- While holding down the left mouse button, drag the mouse pointer to the **foreign key field**
- Release the mouse button and a Edit Relationship dialog opens



Creating a Relationship

- Double-check the both the field names (**primary key field-foreign key field**) are the same from both tables.

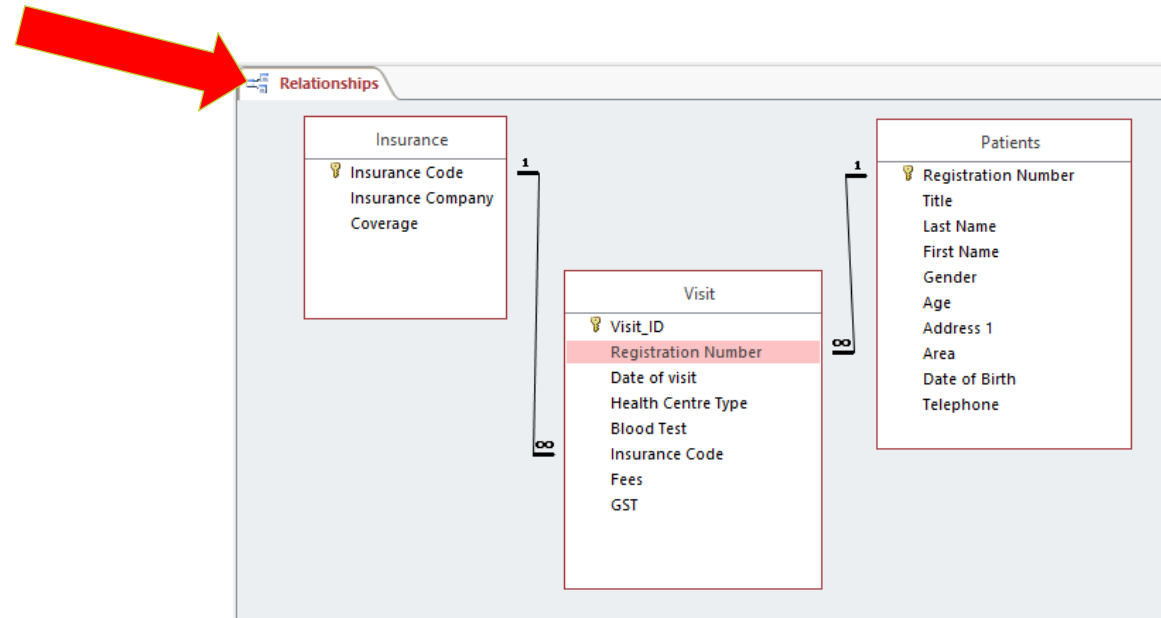
The screenshot shows the 'Edit Relationships' dialog box. It has two columns: 'Table/Query:' and 'Related Table/Query:'. Under 'Table/Query:', 'Patients' is selected, and under 'Related Table/Query:', 'Visit' is selected. Below these, the primary key field 'Registration Number' from 'Patients' is linked to the foreign key field 'Registration Number' from 'Visit'. To the right of the fields are buttons: 'Create' (highlighted), 'Cancel', 'Join Type..', and 'Create New..'. At the bottom, there are three checked checkboxes: 'Enforce Referential Integrity', 'Cascade Update Related Fields', and 'Cascade Delete Related Records'. Below these is a 'Relationship Type' dropdown set to 'One-To-Many'.

- Check **Enforce Referential Integrity, Cascade Update Related Fields, Cascade Delete Related Records.**
- Click **Create** to set the relationship

Creating a Relationship

- After creating the relationships between all tables, Right Click on the Relationships page tab, Click **Save**.

Right Click Here

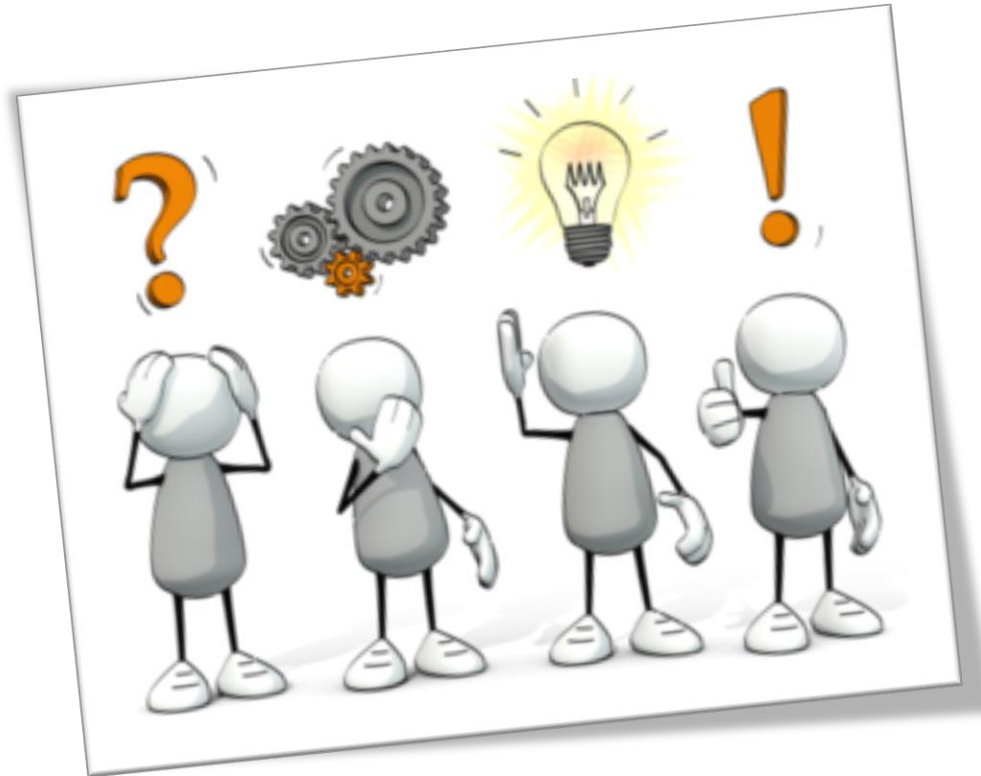




Queries

Append

Select



Update
Parameter

Delete

Queries Keywords / Tips

- **SELECT** – Show, Display
- **APPEND** – Add, Transfer
- **UPDATE** – Change, Edit
- **DELETE** – Remove, Erase
- **PARAMETER** – Prompt, Ask

Check this out!
↳

Tips In Doing A Select Query

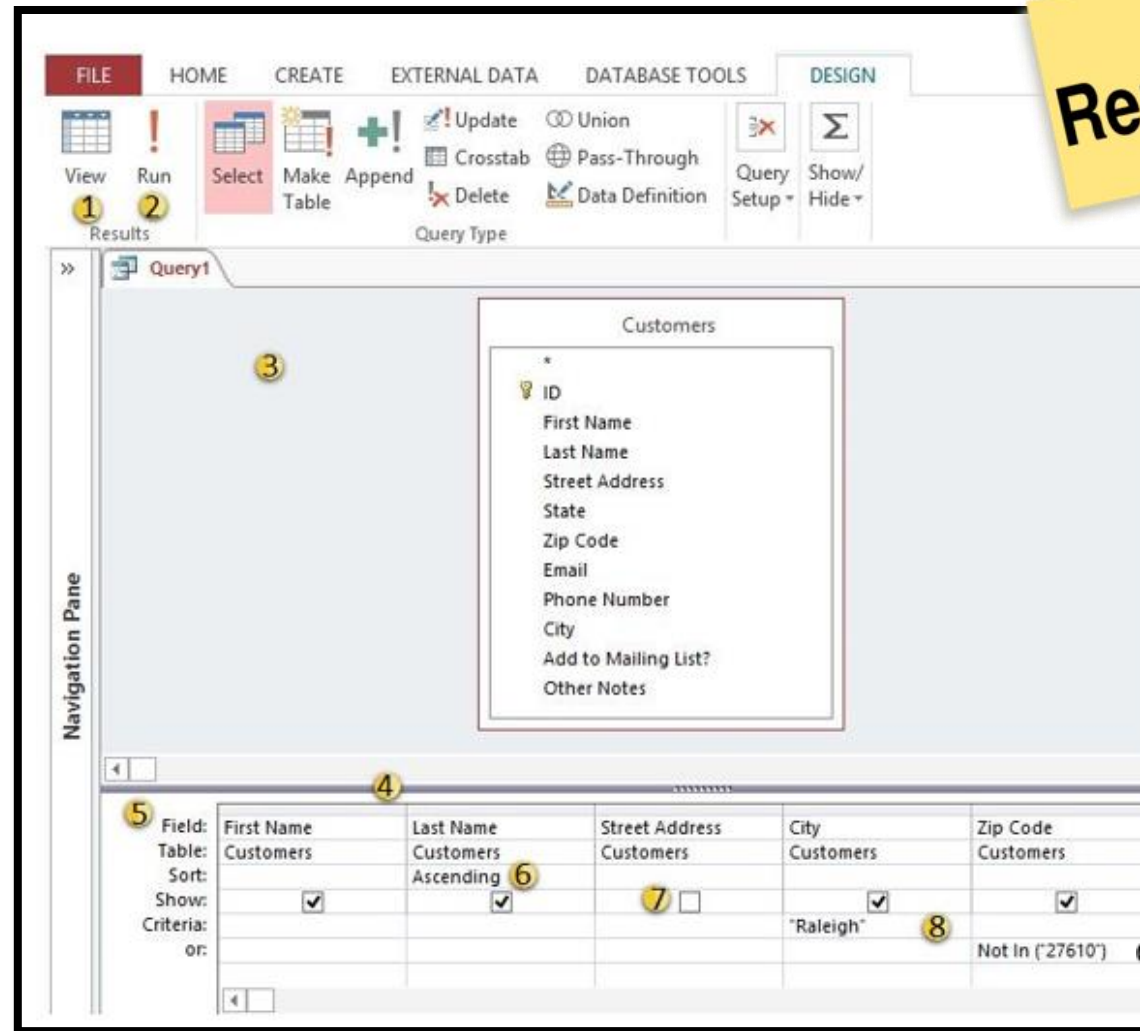
- 1) **TABLES**: What tables will be used?
- 2) **FIELDS**: Which fields will be used?
- 3) **SORTING**: Will there be sorting?
- 4) **CRITERIA**: What filtering /criteria will be done?

*AS EASY AS
1.2.3.*

Query

Eight Features

1. View Options
2. Run Query Command
3. Object Relationship Pane
4. Design Grid
5. Field / Table Names
6. Sorting
7. Showing / Hiding Fields
8. Query Criteria



Remember!

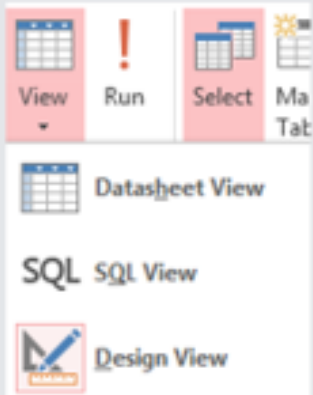
Don't FORGET!



View Options

Click the **View** drop-down arrow to switch to another view of your query. In most cases, you will only need to use two main views: **Datasheet view** and **Design view**.

Datasheet view lets you view your **query results** in the form of a table. Design view, featured here, allows you to **view and modify** the design of your query.



1

Run Query Command

2

After you have designed your query, click the **Run** command to view the results of the query in a table.

Object Relationship Pane

3

All of the tables you choose to include in your query will appear as small windows in the **Object Relationship pane**. Each window contains a list of every available field within that table.

The Design Grid


4

The bottom part of Query Design view is called the **design grid**. It contains a table that lists all of the fields included in the query. Within this table, you can set criteria to specify which information the query should retrieve.

Sorting

6

You can **sort** the data retrieved by a query. Simply click in the **Sort:** row of the field you want to sort, and select either an **Ascending** or **Descending** sort. By default, query results are not sorted.

Field:	First Name	Last Name	Street Address
Table:	Customers	Customers	Customers
Sort:			
Show:	<input checked="" type="checkbox"/>	Ascending	<input checked="" type="checkbox"/>
Criteria:		Descending	
or:		(not sorted)	

Fields and Table Names

5

The first row of the design grid contains the names of the **fields** included in the query. Directly beneath each field name is the name of the **table** that field belongs to.

Field:	First Name	Last Name
Table:	Customers	Customers
Sort:		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		
or:		

Showing and Hiding Fields

7

You may want to include fields in the design of your query but **hide** them in the query results. To hide a field, uncheck the **checkbox** in the **Show:** row of that field.

Field:	First Name	Last Name	Street Address
Table:	Customers	Customers	Customers
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:			
or:			

Query Criteria

8

Entering **query criteria** lets you specify exactly what type of information you want your query to retrieve. Simply type the desired criteria in the **Criteria:** row of the field you want to search.

Here, the criteria has been set so that the query will search for records with **Raleigh** in the **City** field and zip codes other than **27610**.

Field:	City	Zip Code
Table:	Customers	Customers
Sort:		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"Raleigh"	Not In ("27610")
or:		

Basic Query Example

- Create a query that will **display** the patients first name, last name, registration number, date of visit, health center type, area, insurance company. Sort the query by last name then by first name in alphabetical order. Save the query as PATIENTS INSURANCE.

- 1) **TABLES:** What tables will be used? – Patients + Visits + Insurance
- 2) **FIELDS:** Which fields will be used? – first name, last name, registration number, date of visit, health center type, area, insurance company
- 3) **SORTING:** Will there be sorting? – Yes, last name and first name (ascending)
- 4) **CRITERIA:** What filtering /criteria will be done? – None

Query Criteria

“value”	Will only display items that are that exact value (replace the word value with what you want to search by)
=	Is equal to
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to
<>	Not equal to
And	True only if both conditions exist
Or	True if either condition exist
Not	True if the single instance is not true

Examples of Query Criteria

CRITERIA	DESCRIPTION
> 25 AND < 50	applies to a Number field. It shows only those records where the field contains a value greater than 25 and less than 50.
“Male”	Applies to a short text field. It shows only those records where a field contains a value equal to Male.
Like A*	Applies to a short text field. It shows only those records where the field contains a value that starts with the letter A
> 1000.00	Applies to a number field. It shows only those records where the field contains a value greater than 1000.00

Query Example with Criteria

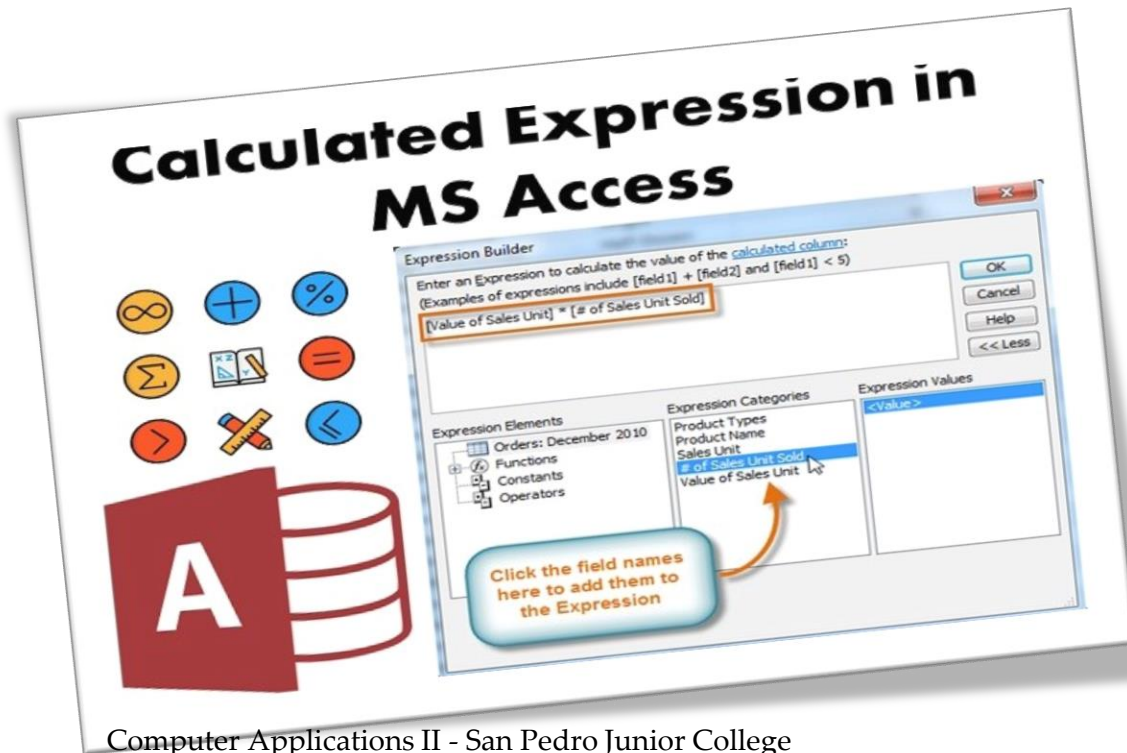
- Create a query that will only **show** the MALE patients first name, last name, registration number, date of visit, health center type, area for San Pedrito only. Sort the query by last name then by first name in alphabetical order. Save the query as MALE SAN PEDRITO PATIENTS.

- 1) **TABLES:** What tables will be used? – Patients + Visits
- 2) **FIELDS:** Which fields will be used? – first name, last name, registration number, date of visit, health center type, area
- 3) **SORTING:** Will there be sorting? – Yes, last name and first name (ascending)
- 4) **CRITERIA:** What filtering /criteria will be done? – Yes, gender = “Male” and area = “San Pedrito”

Date	Course Topics & Sub-topics	Assessments Due Dates
Week 1	Go over course outline <ul style="list-style-type: none"> • Assignment Of Accounts • ACCESS 2016 Importing Excel to Access Tables, Relationship Previous Knowledge: Students know to create a database, table, field, data type, set field properties)	Exercise 1: Import Excel-Access, Fields, Field Properties, Records, Relationship Ambergris National Bank Practical – 25 Points 01/25/2019
Week 2-4	Sort and Criteria to Select Queries Designing Calculated & Concatenated fields in a Select Query; Parameters Query Action Queries (Append, Delete, Update). Form: Creating a data entry form Reports: Creating reports from one table, multiple tables, formatting reports, sorting, grouping, totals	Exercise 2 – Parameters + Select Queries, Calculated & Concatenated Fields. Ambergris National Bank Practical – 25 Points 01/31/2019 TEST 1: Import Excel-Access, Relationship, Parameters + Select Queries, Calculated & Concatenated Fields Practical Only – 100 Points 02/01/2019
Week 5	<ul style="list-style-type: none"> • IMPORT/EXPORT Import/Export Betw. Office Applications (Import Word Into Access, Import Excel Into Access) (Import Access Into Excel, Link Access/Excel To Word)	Exercise 3: Action Queries & Reports Practical – 25 Points 02/08/2019 Quiz 1: Access – Theory (Tables, Field Properties, Relationship, Queries & Reports) Theory – 50 Points 02/14/2019

Select Query

Calculated & Concatenated Fields



Calculated Fields

To create a new calculated field

1. In design view, click on an empty field cell in the design grid
2. Give /type the name of the newly calculated field followed by a colon and then the formula you wish to calculate. Refer to any existing fields by typing their names surrounded by SQUARE BRACKETS.
3. Right click on the field and select properties to adjust number format and decimal places.
4. Save the query
5. Click on the run query command button to view your results

Calculated Fields

MATH OPERATORS

Operator	Description
*	Multiplication
+	Addition
-	Subtraction
/	Division

- *For example: to calculate 5% of a salary field*
- Bonus: `[salary] * 0.05`

Calculated Field Example

- Create a query that will show the patient insurance company, last name, first name, registration number, gender, fees. Sort by last name then by first name in alphabetical order. Show only the male patients who are insured by Warden. Do a calculated field, Discount, that will calculate a 15% discount on the current fees. Save the query as FEES DISCOUNT.

Field:	Insurance Company	Last Name	First Name	Registration Number	Gender	Fees	Discount: [Fees]*0.15
Table:	Insurance	Patients	Patients	Patients	Patients	Visit	
Sort:		Ascending	Ascending				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"warden"				"male"		
or:							

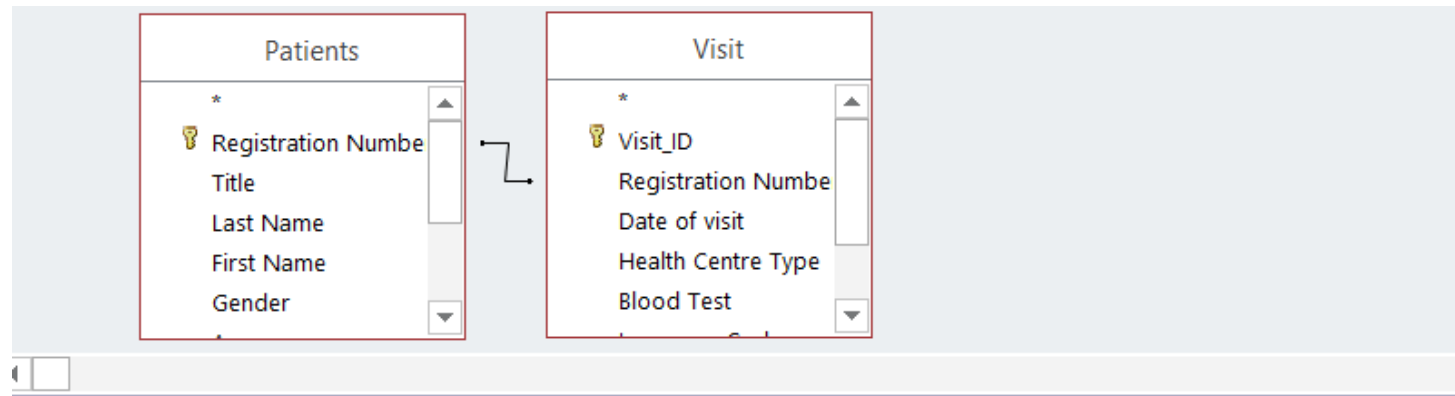
Concatenated Fields

To create a concatenated field

1. In design view, click on an empty field cell in the design grid
2. Give /type the name of the newly concatenated field followed by a colon and then incorporate any text that will not change (including spaces) in quotation marks. Use the ampersand (&) to join any two strings of text in the expression. Refer to any existing fields by typing their names surrounded by SQUARE BRACKETS.
3. Save the query
4. Click on the run query command button to view your results

Concatenated Field Example

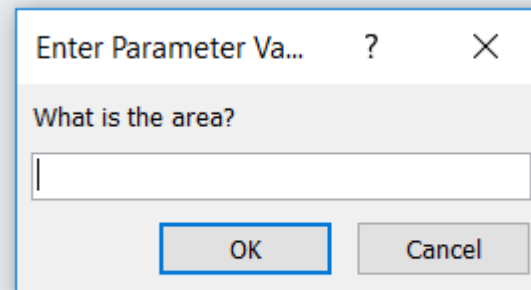
- Create a query that will show the patients' registration number, fullname (concatenated field *For Example: Santos, Martin*), gender, date of visit, blood test. Sort by fullname in alphabetical order and show only the patient that did a blood test. Save the query as PATIENT BLOOD TEST.



Field:	Registration Number	Fullname: [Last Name] & ", " & [First Name]	Gender	Date of visit	Blood Test
Table:	Patients		Patients	Visit	Visit
Sort:		Ascending			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:					Yes
or:					

Parameter Query

Field:	Area
Table:	Patients
Sort:	
Show:	<input checked="" type="checkbox"/>
Criteria:	[What is the area?]
or:	



Enter Parameter Value ? X

What is the area?

OK Cancel

Parameter Query

- A **parameter query** is one of the most useful queries you can create. When you open a parameter query, Access will prompt you for a search term and show you query results that reflect your search.
1. Create a select query.
 2. In the criteria, enter a user prompt question in SQUARE BRACKETS.

Example

- Create a query that will ask the user for a search term to show only the particular health center type. Show the patient registration number, fullname (concatenated field - last name, first name), gender, date of visit, blood test, fees, tax (calculated field – 12.5% on fees), health center type. Show only those patients that did a blood test. Save the query as BLOOD TEST BY HEALTH CENTER.

<p>Week 5</p>	<p>Action Queries (Append, Delete, Update). Reports: Creating reports from one table, multiple tables, formatting reports, sorting, grouping, totals</p> <ul style="list-style-type: none"> • IMPORT/EXPORT <p>Import/Export Betn. Office Applications (Import Word Into Access, Import Excel Into Access) (Import Access Into Excel, Link Access/Excel To Word)</p>	<p>TEST 1: Import Excel-Access, Relationship, Parameters + Select Queries, Calculated & Concatenated Fields Practical Only – 100 Points 02/14/2019</p> <p>Exercise 3: Action Queries & Reports Practical – 25 Points 02/21/2019</p> <p>Quiz 1: Access – Theory (Tables, Field Properties, Relationship, Queries & Reports) Theory – 50 Points 02/22/2019</p>
<p>Week 6-8</p>	<ul style="list-style-type: none"> • EXCEL 2016 <p>Copy / Paste Special; Filter Excel Advanced Formulas IF, VLOOKUP (Table Array), HLOOKUP. CONCATENATE, Totals/Subtotals, Text To Columns Charts: (Column, Bar, Line, Point, Pie)</p>	<p>TEST 2: Import Excel to Access – Queries Action, Forms, Reports Practical – 100 Points 03/01/2019</p>

Action Queries

Append 

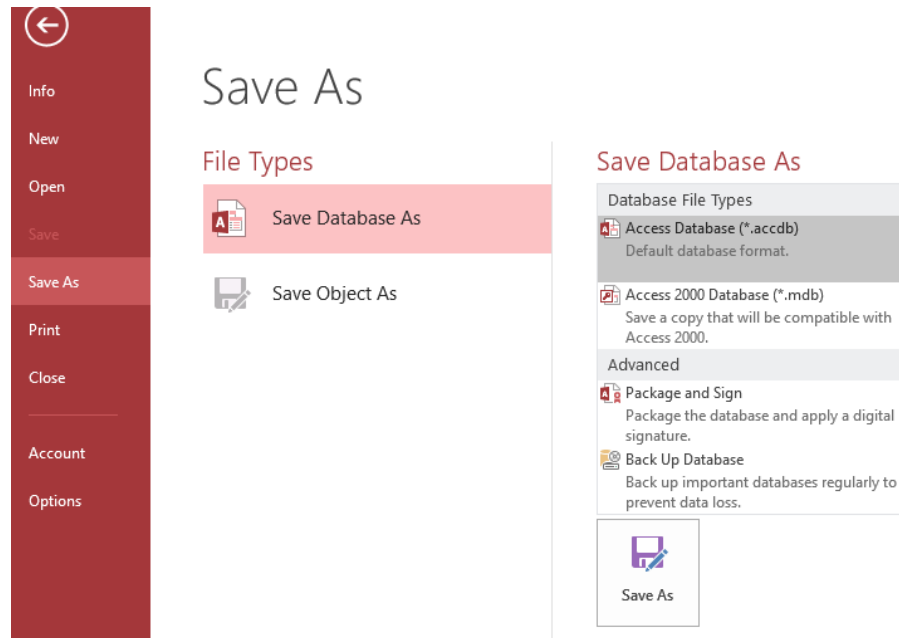


Update 

Delete 

Backup A Database

1. Go to the File tab
2. Click on Save As
3. Select Backup Database



NOTE: EVERYTIME you do an action query (Append, Update Delete), you must do a backup database to ensure that you can recover from any mistakes.

Enable Content

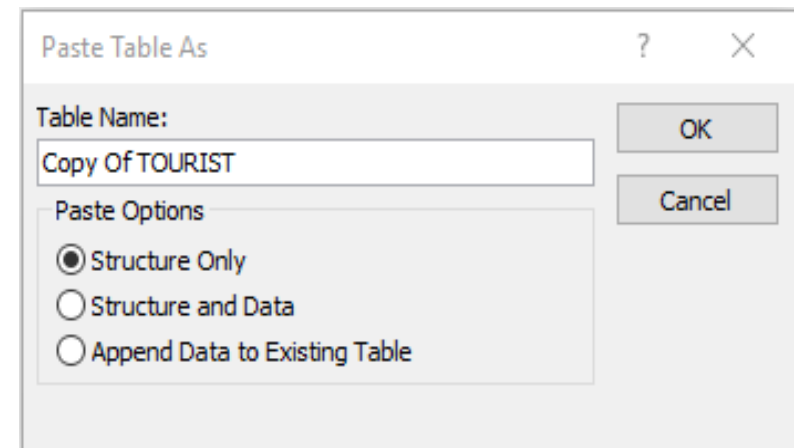
You need to **Enable Content** for your Action Query to run. If it not enabled, your action query will not work properly.

You need to Enable Content for your Action Query to run. If it not enabled, your action query will not work properly.



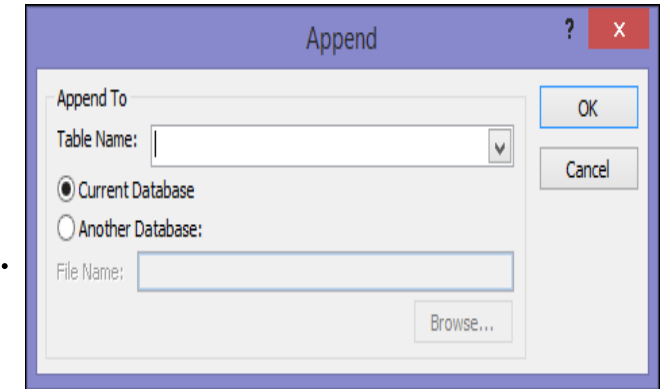
Make A Blank Copy Of Table

1. Highlight the table
2. Right Click and Select Copy
3. Right Click and Select Paste
4. From the Paste Table As dialog. Give the table an appropriate name.
5. Select Structure Only
6. Click Ok



To Do An Append Query

1. Before Doing An Append Query, do a blank copy of the source table.
2. Go to Create – Queries, click Query Design, Select source tables and fields.
3. Go to Design tab - Query Type, click Append.
4. The Append dialog box appears.
5. In the Append To box, select the destination (target) table from the Table Name, select Current Database and then click OK.



Example

- Create a query that will add only the San Mateo patients to a new table, Patients – San Mateo. Save the query as SAN MATEO PATIENTS.

BACKUP BEFORE EACH
ACTION QUERY

DON'T
FORGET!

To Do An Update Query

1. Go to Create – Queries, click Query Design, Select source tables and fields.
2. Go to Design tab, Query Type, click Update.
3. Select the field that you need to update.
4. In the Update to row, type out the formula to update the field. Note: You refer to any existing field with SQUARE BRACKETS.

Example

- Create a query that will update the GST field in the Visits table with a 12.5% of the fees. Save the query as FEES TAX.

BACKUP BEFORE EACH
ACTION QUERY

DON'T
FORGET!

To Do A Delete Query

1. Go to Create – Queries, click Query Design, Select source tables and fields.
2. Go to Design tab - Query Type, click Delete.
3. Select a field that will determine what you delete.
4. In the Delete row, type out the criteria that will determine what records to delete from the table.

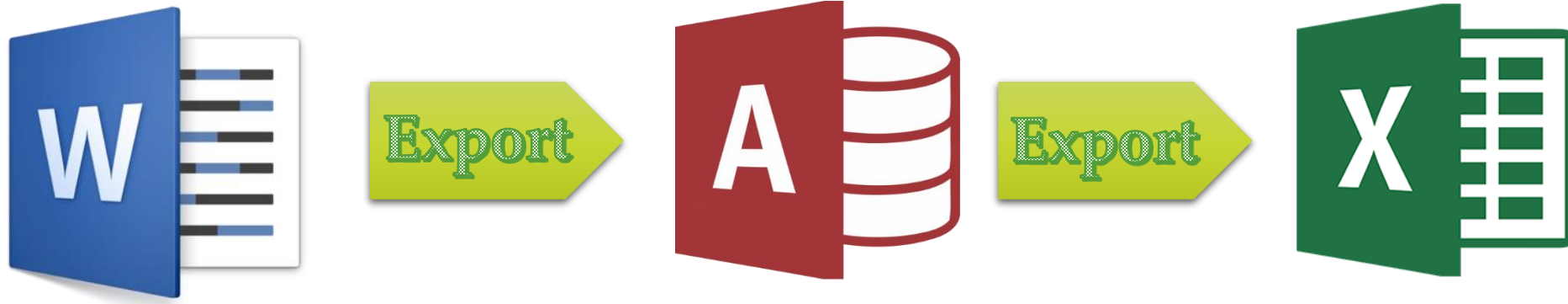
Example

- Create a query that will remove all the male patients from the San Mateo Patients table. Save the query as DELETE SAN MATEO PATIENTS.

BACKUP BEFORE EACH
ACTION QUERY

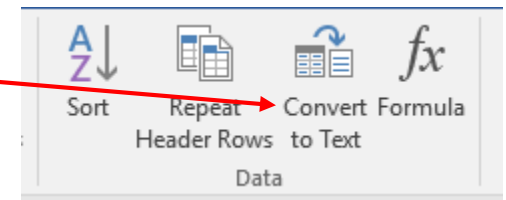
DON'T
FORGET!

Import-Export b/w Office Applications

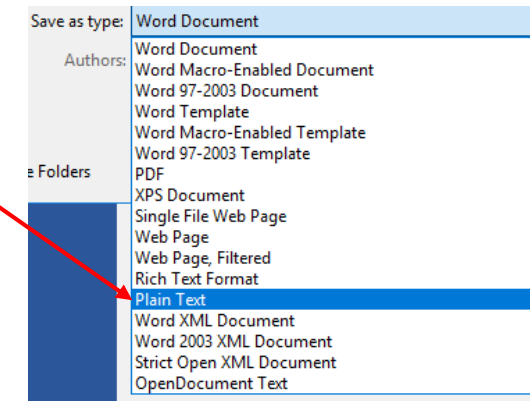


Import Word Into Access

1. Copy each table to a separate Word document
2. Highlight each table and copy (Ctrl+C)
3. Paste it into a new word document (Ctrl+V)
4. Remove any rows that are blank, only header+records should remain. Remove any merge cells. Remove any commas in the table
5. Highlight the entire table and goto LAYOUT - Convert To Text
6. Select Commas and hit OK button
7. Go to FILE - Save As
8. In File name: type out the name of a table and Save As Type: Plain Text
9. At File Conversion dialog, hit OK
10. **(SAVE ALL CHANGES, CLOSE ALL DOCUMENTS AND OPEN MICROSOFT ACCESS)**

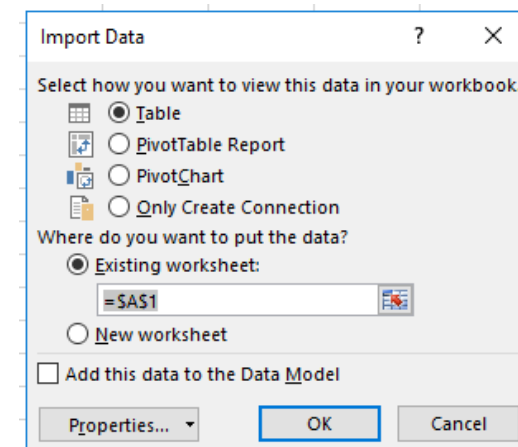
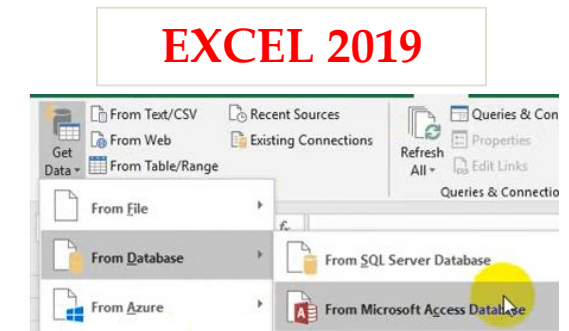
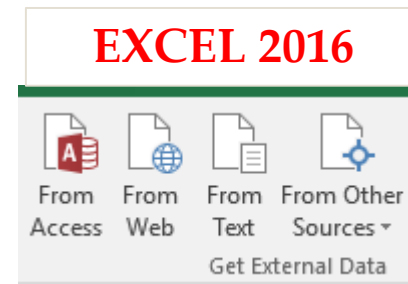


1. Create a blank database, MOH
2. Go to EXTERNAL DATA, Select Import Text File
3. Select Import The Source Data
4. Select Delimited, Click Next
5. Select Comma, and Click on First Row Contains Field Names
6. Confirm the field names, Click Next (Note: Import Dates As Short Text)
7. Select No Primary Key, Click Next
8. On Import To Table, Type out the table name
9. Go to table – Design View and change the date field to from Short Text to Date/Time data type
10. Go to table – Datasheet View and delete any blank records



Import Access Into Excel

1. Important: Your Source Database **MUST** be closed
2. Open Excel, Go to Cell A1
3. Go to Data - External Data - Select From Access
4. Select the database
5. At Import Data dialog, Click OK
(Note: If your database is not closed, you will get an error at step 5).
6. Got to Formulas - Name Manager, Edit
7. Set the name that you want to give the data, Click OK



Microsoft Excel Spreadsheets



RANK (Formula)

RANK displays the rank of a number in a list of numbers. It is particular useful in ranking students in a test grade scenario. For Example: =RANK(B2,\$B\$6:\$B\$10,1)

= RANK (number, ref, [order])

Number: the cell address that you want to rank

Ref: The cell range (list of numbers) that it will be ranked against (usually absolute cell reference)

Order: *[Optional]* ascending (lowest to highest)/descending (highest to lowest) order specified by 1/0

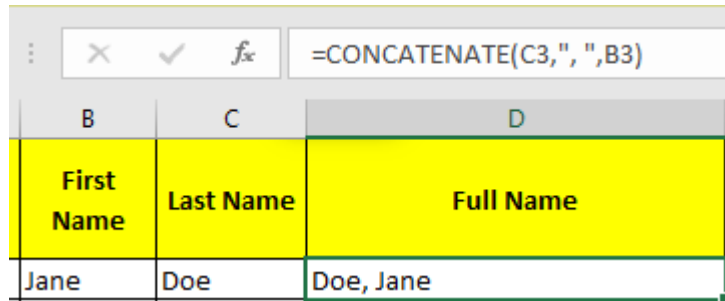
CONCATENATE (Formula)

When you concatenate cells in Excel, you combine only the contents of those cells. In other words, concatenation in Excel is the process of joining two or more values together. This method is often used to combine a few pieces of text that reside in different cells.

=CONCATENATE(cell1," ",cell2)

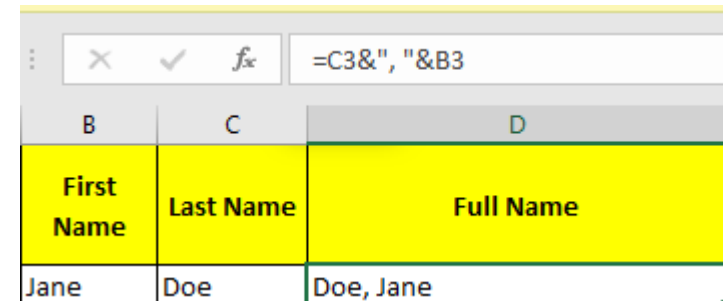
OR

= cell1&" "&cell2



This screenshot shows an Excel spreadsheet with columns B, C, and D. Column B is labeled 'First Name' and contains 'Jane'. Column C is labeled 'Last Name' and contains 'Doe'. Column D is labeled 'Full Name' and contains the result of the formula '=CONCATENATE(C3," ",B3)', which is 'Doe, Jane'. The formula bar at the top displays '=CONCATENATE(C3," ",B3)'.

B	C	D
First Name	Last Name	Full Name
Jane	Doe	Doe, Jane



This screenshot shows an Excel spreadsheet with columns B, C, and D. Column B is labeled 'First Name' and contains 'Jane'. Column C is labeled 'Last Name' and contains 'Doe'. Column D is labeled 'Full Name' and contains the result of the formula '=C3&" "&B3', which is 'Doe, Jane'. The formula bar at the top displays '=C3&" "&B3'.

B	C	D
First Name	Last Name	Full Name
Jane	Doe	Doe, Jane

TEXT TO COLUMNS

In Excel, a user can take the text in one or more cells, and split it into multiple cells using the Convert Text to Columns.

1. Select the cell or column that contains the text you want to split.
2. Select **Data > Text to Columns**.
3. In the **Convert Text to Columns Wizard**, select **Delimited > Next**.
4. Select the **Delimiters** for your data. For example, **Comma** and **Space**. You can see a preview of your data in the **Data preview** window.
5. Select **Next**.
6. Select the **Column data format** or use what Excel chose for you.
7. Select the **Destination**, which is where you want the split data to appear on your worksheet.
8. Select **Finish**.

IF

IF is used to create conditional arguments by testing a condition that is either true or false.

`=IF(logical_test, value_if_true, value_if_false)`



It can be used with the following operators in the condition section of the formula

Operator	Meaning
>	Greater Than
=	Equal To
>=	Greater than or equal to
<	Less than
<=	Less than or equal to
<>	Not equal to