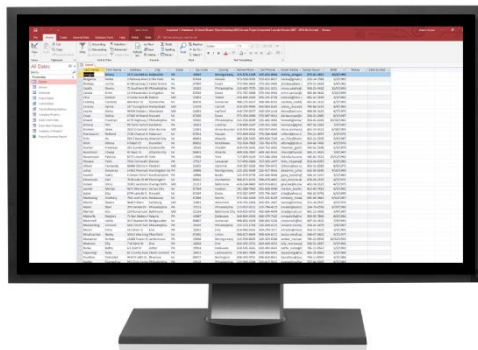


Database Design using Access



Step-by-Step Instructions for How to
Complete the Video Exercises

DELAWARE
TECHNICAL  COMMUNITY
COLLEGE

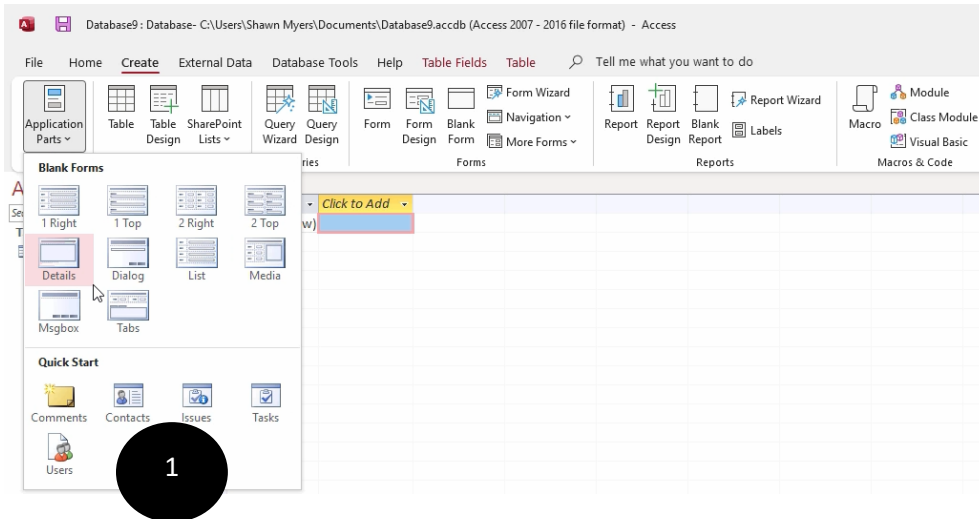
MIS 220

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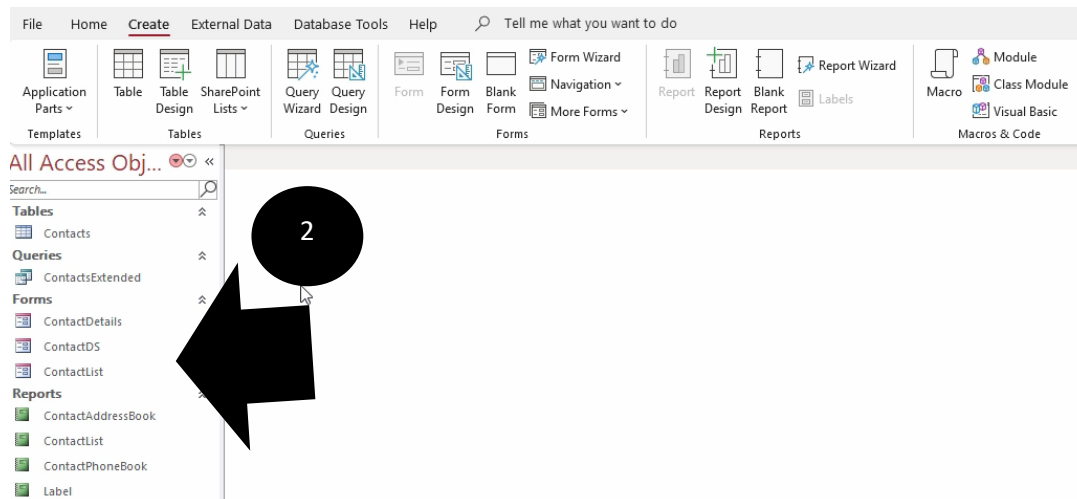
Lesson Two: Create and Modify Tables

1. Go to the Create tab, then click on the Applications Parts drop-down list from the Templates Group. Go to Quick Parts and choose Contacts.

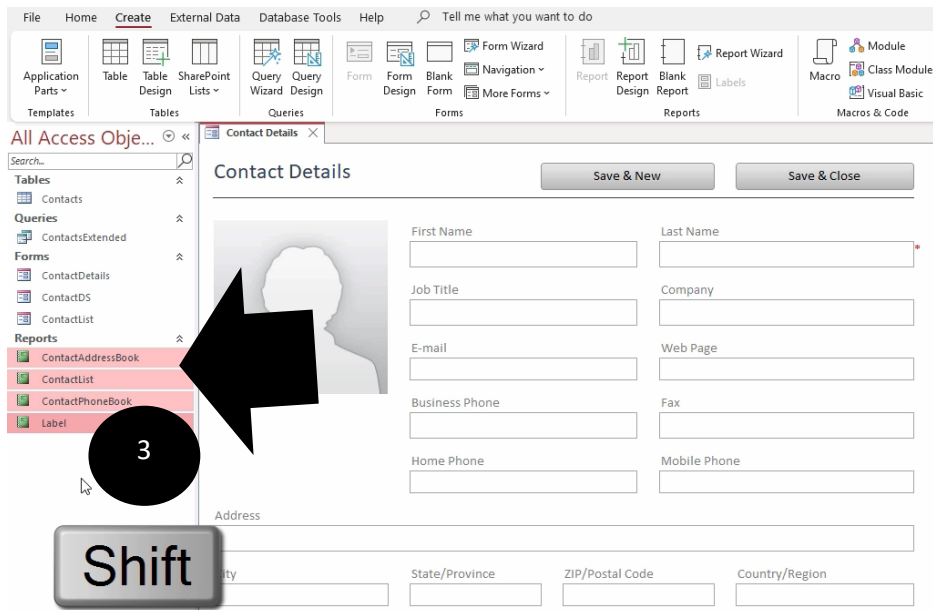


2. You will be prompted to close any tabs that are open; Click yes, then click Enable Content.

You will see that a table was created along with other Objects you might want to include in the database. Click on each Object to see what it looks like, then delete whatever it is that you don't need.

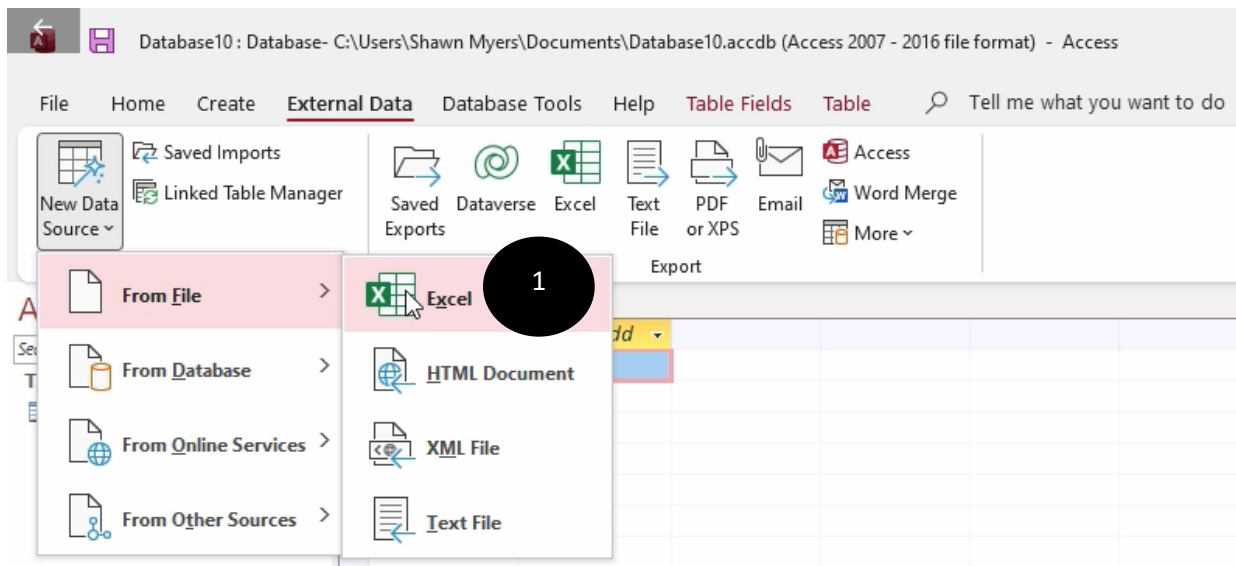


- Let's say that we don't need to include any Reports. You can click on the first Report, hold down the Shift key, click on the last report, and then press the Delete key.

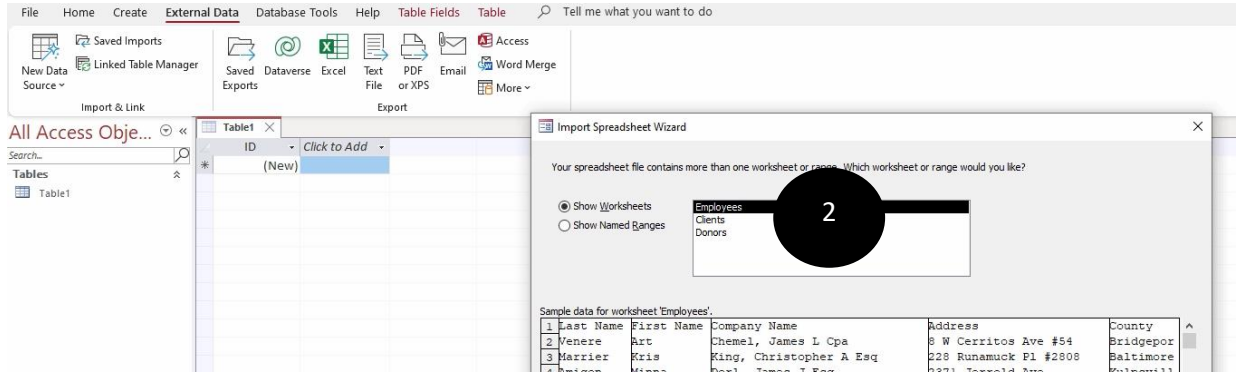


Importing Excel Files

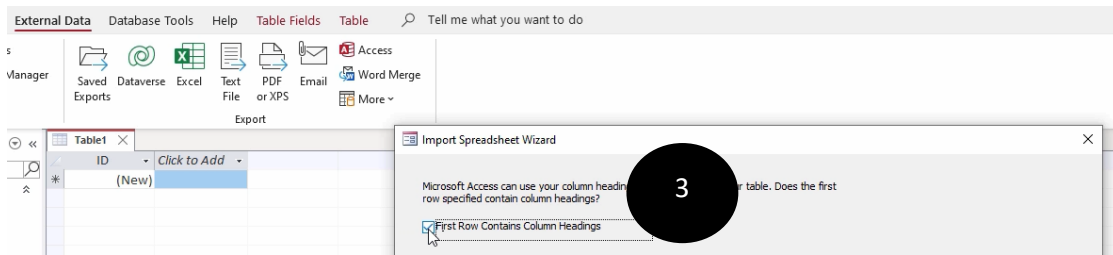
- Open up a blank database. click on External Data, New Data Source, from file, Excel.



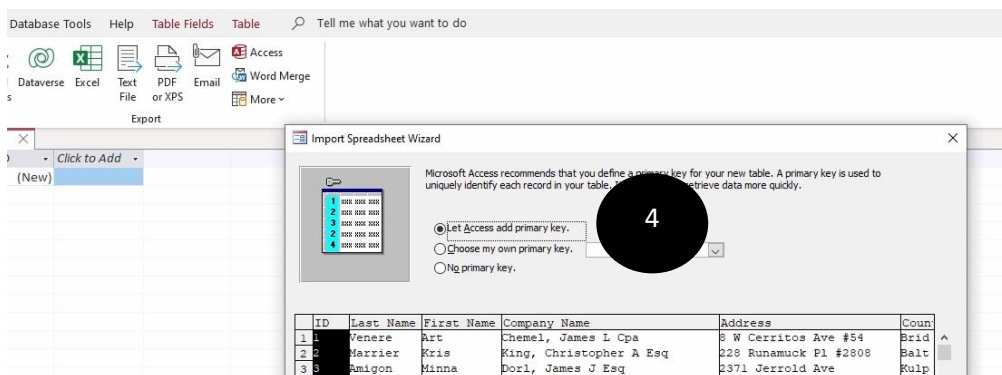
- You will then be prompted to locate the file that you want to import. Click on the Browse button and double-click on the file. Click OK and then you see the worksheets that are on the file. Let's start with the first one, which is Employees.



- Click Next, and let's check off where it says, "First Row Contains Column Headings". You will then be given the option to make any changes to the Field Headings.

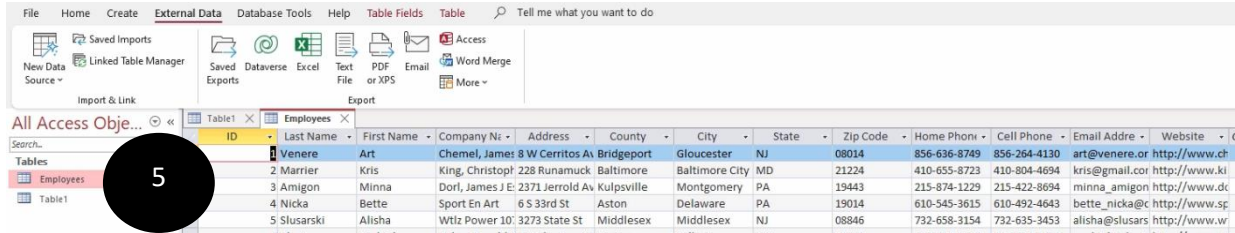


- Let's keep the current settings and click "Next". You will then be asked about creating a Primary Key, which is something that uniquely identifies each record in the Table. For this database, let us use a Primary Key that will be created for us, because each record will be uniquely identified by a number. Click "Next".

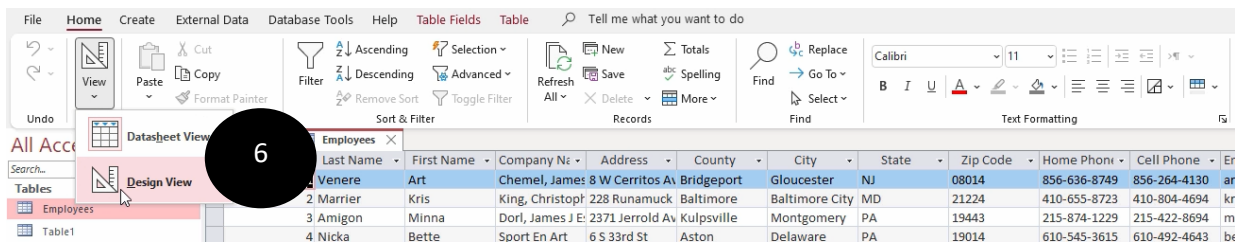


For this database, we don't need to save the steps so click on "Close".

5. Double click on "Employees" to open the Table; and you'll see all the entries. Right now, the Tables is in what is called Datasheet View.

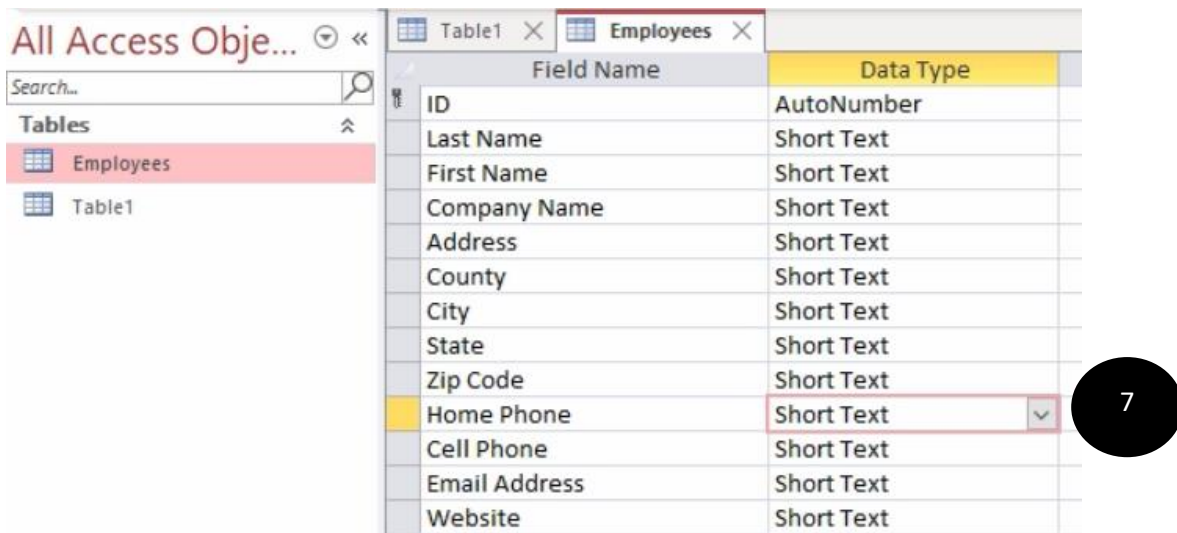


6. When you go to the Home tab, and then click on "View", you will see another option called Design View.

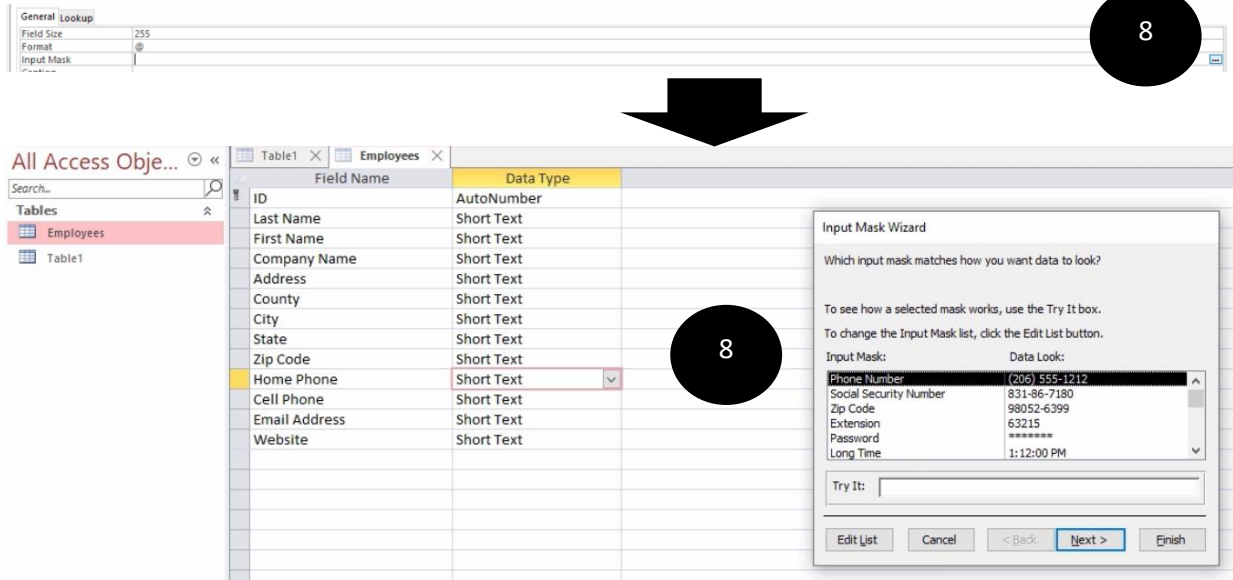


This allows you to add more Fields and control the way the records are formatted by assigning was called a Data Type.

7. Click on the Data Type next to the phone number. Each Data Type can be customized using options under what is called "Field Properties"

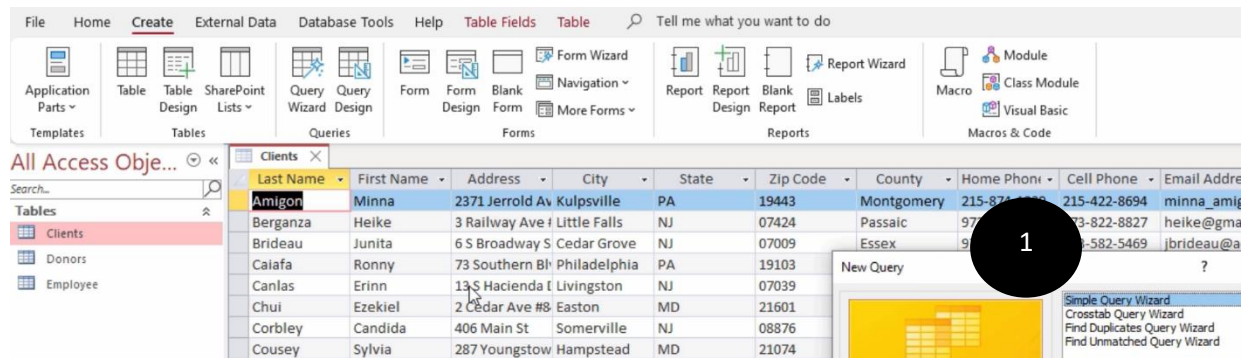


- We can then click on what is called an Input Mask, which allows you to apply a format every time a record is entered into the database under that Field. We can click on the ellipsis next to the Input Mask and you will see a phone number input mask. Click Finish.

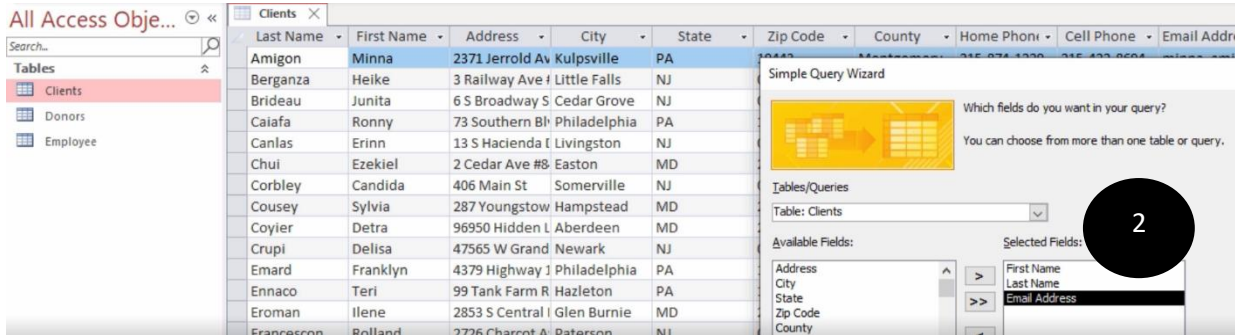


Lesson 3: Create Queries and Export Files to Excel

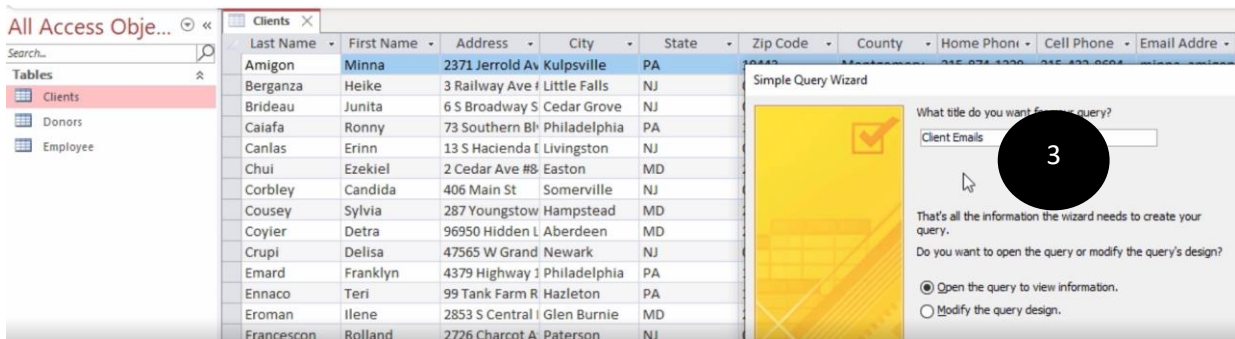
- Go to the Client Table, then click on the Create tab and choose Query Wizard from the Queries Group. Choose Simple Query.



- From the Query Wizard dialog box, choose First Name, Last Name and e-mail address.

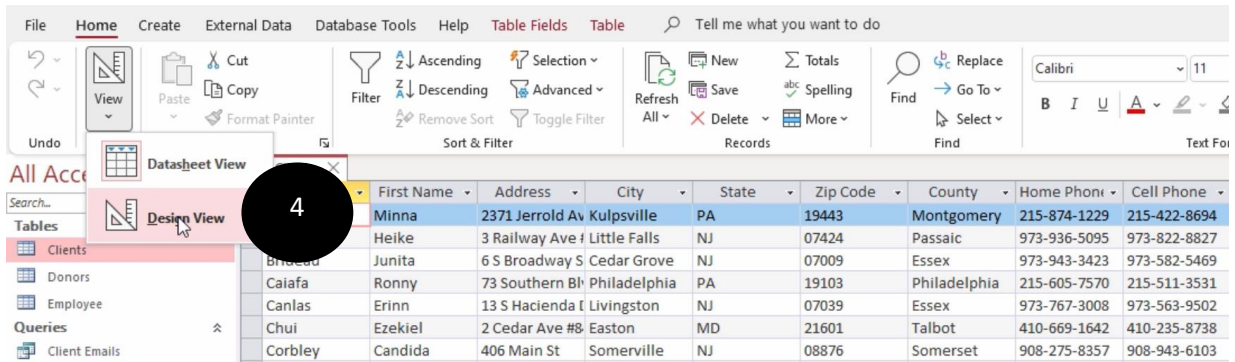


- Click Next and rename the Query, "Client Emails"; then click Finish.



Let's expand the column so it is easier to see. Save it, then close all the tabs.

- Click on the Client Table, then click on Design View.



- In Data Type, use the down arrow to change it to Hyperlink. Then right-click on the Clients tab and save it; then close it.

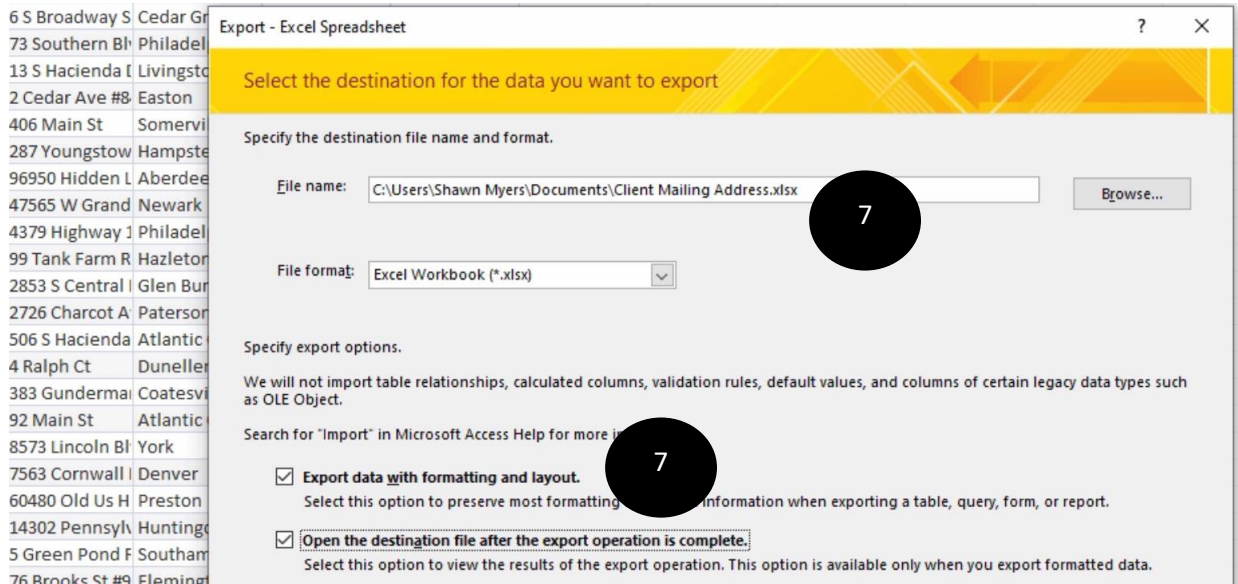
Field Name	Data Type
Last Name	Short Text
First Name	Short Text
Address	Short Text
City	Short Text
State	Short Text
Zip Code	Short Text
County	Short Text
Home Phone	Short Text
Cell Phone	Short Text
Email Address	Hyperlink
Social Security Number	Number
DOB	Date/Time
Notes	Long Text

Exporting data to Excel

- Double-click on the client mailing address Query, click on the External Data tab, and choose Excel under Export.

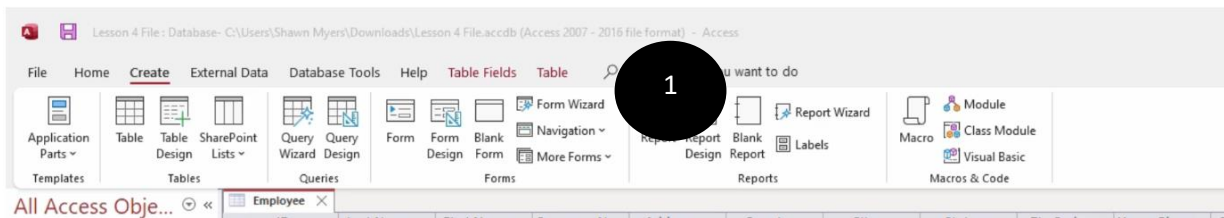
First Name	Last Name	Address	City	State	Zip Code
Minna	Amigon	2371 Jerrold Av	Kulpville	PA	19443
Heike	Berganza	3 Railway Ave	Little Falls	NJ	07424
Junita	Brideau	6 S Broadway S	Cedar Grove	NJ	07009
Ronny	Caiafa	73 Southern Bl	Philadelphia	PA	19103
Erinn	Canlas	13 S Hacienda L	Livingston	NJ	07039
Ezekiel	Chui	2 Cedar Ave #8	Easton	MD	21601
Candida	Corbley	406 Main St	Somerville	NJ	08876
Sylvia	Cousey	287 Youngstow	Hampstead	MD	21074
Detra	Coyier	96950 Hidden L	Aberdeen	MD	21001

- Under “Specify the file name and format”, choose a location for where you want the file to be exported to. In this example, the file location is already selected. Under “Specify export options”, check off the “Export data with formatting and layout” and the second option that opens up the file after it has been exported; click OK.

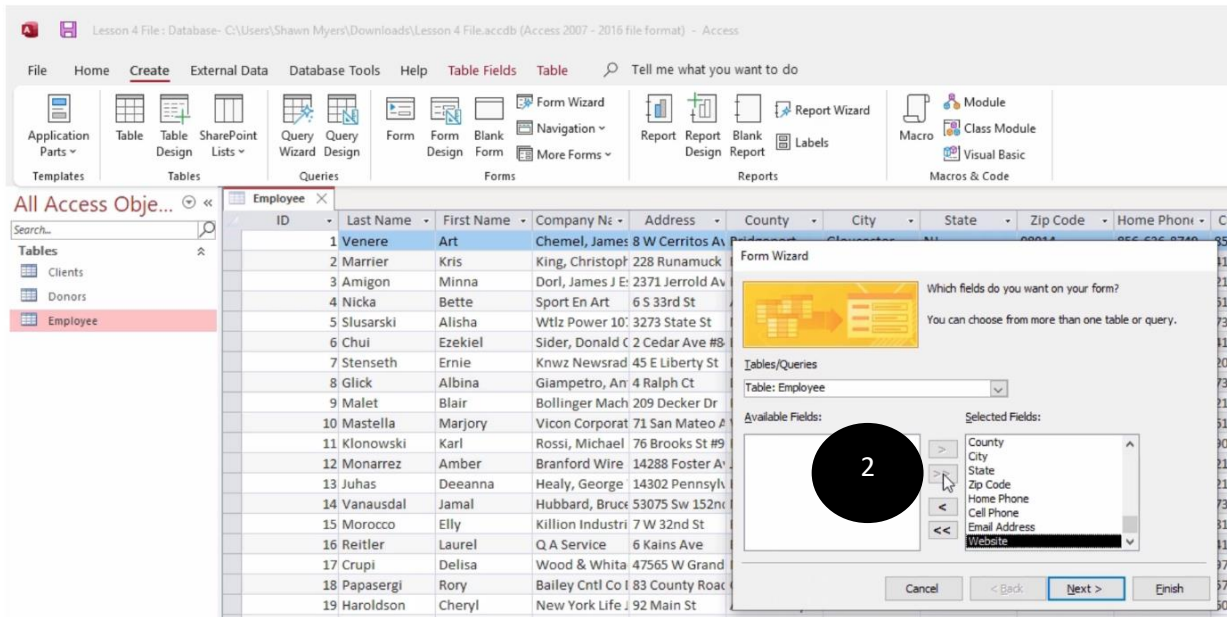


Lesson 4: Create a Form

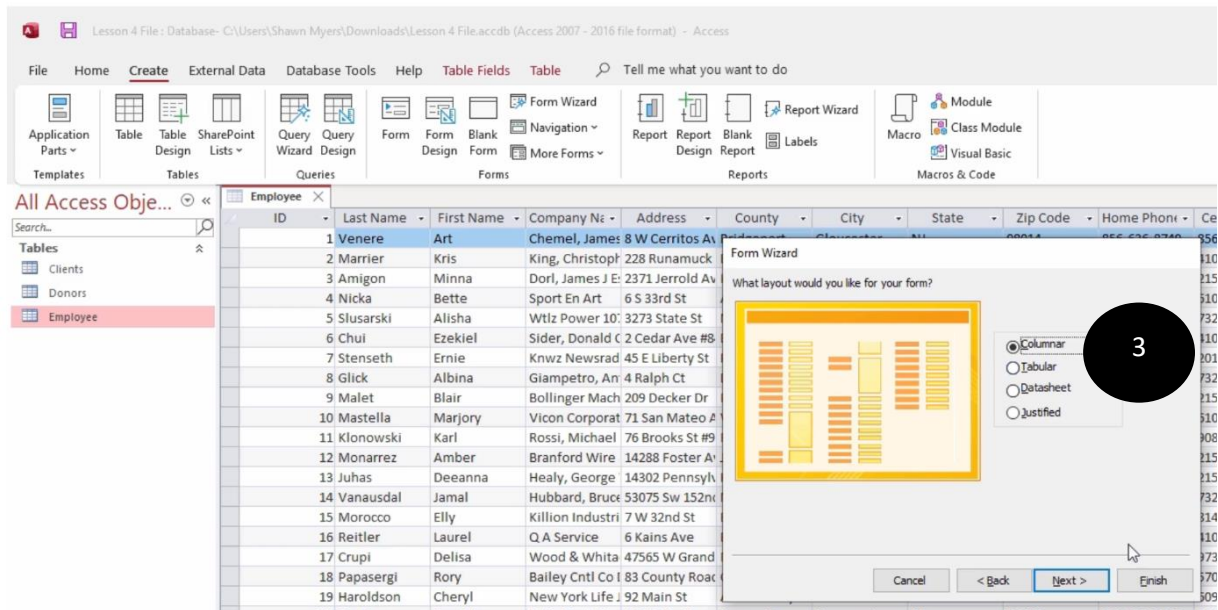
- Double-click on the Employee Table. Click on the Create tab and go to the Form Wizard.



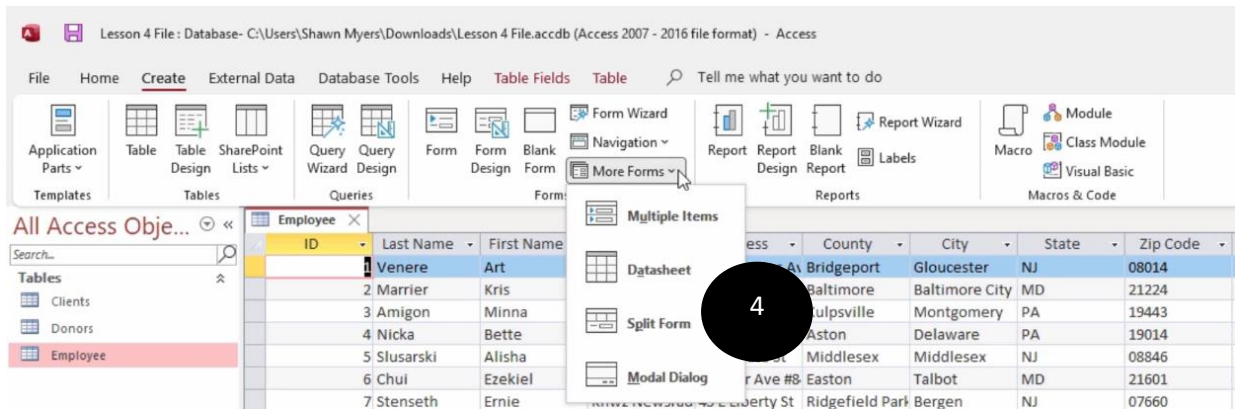
2. Click on the two arrows to select all the Fields, then click Next.



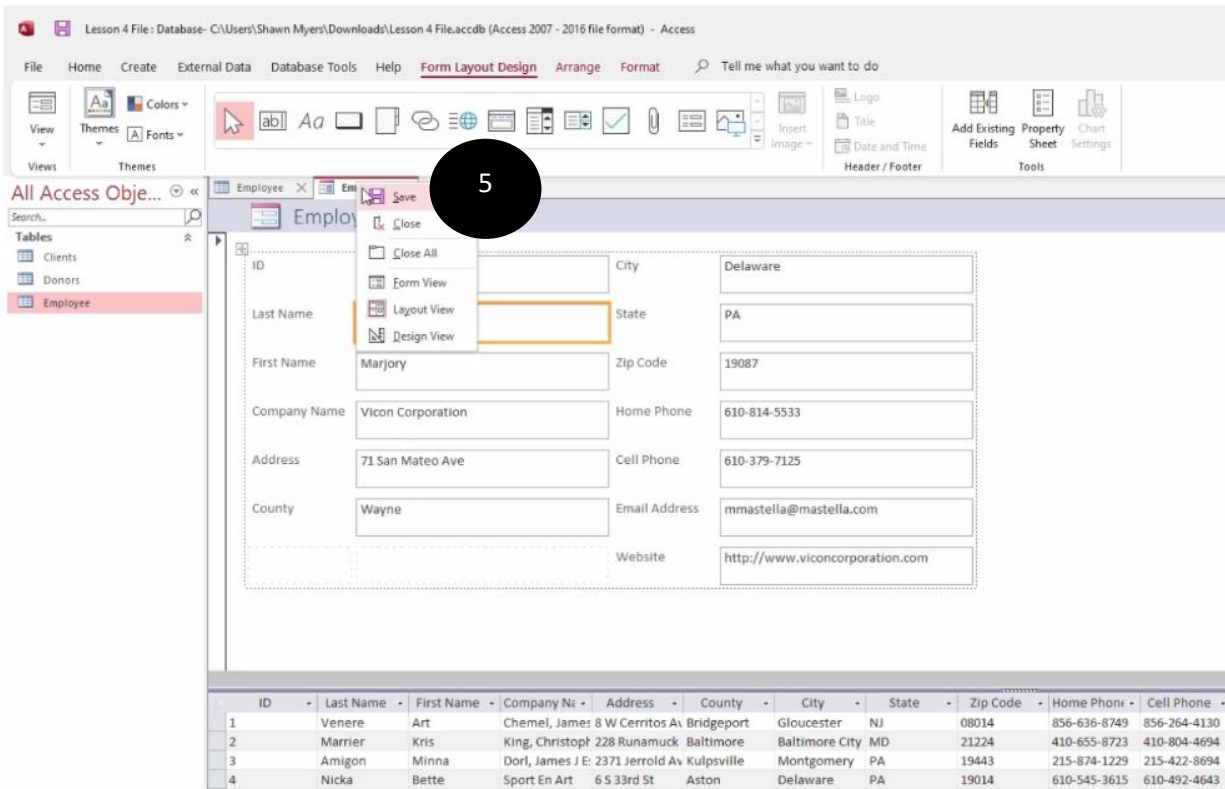
3. Keep the first layout option, then click Finish.



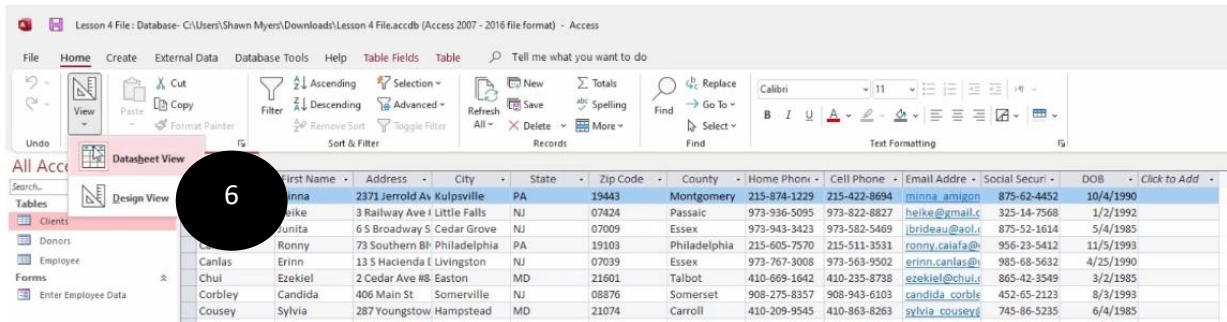
- Another way to create a Form is to click on the Table and then choose one of the templates. Go to More Forms and click on “Split Form”



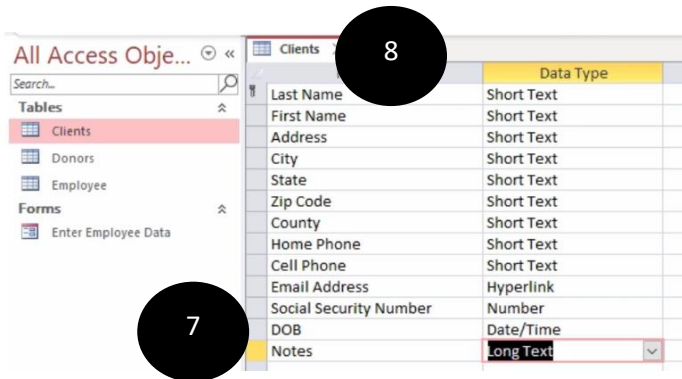
- You can see that this template creates a form that shows you one record at a time; and also shows the entire table. When you click on each record, it is displayed in the form. Right-click on the Form icon, and then click Save. Name the form “Enter Employee Data”.



- Let's look at another way to create a new Form. Double-click on the clients Tab, and from the view down arrow choose Design View.

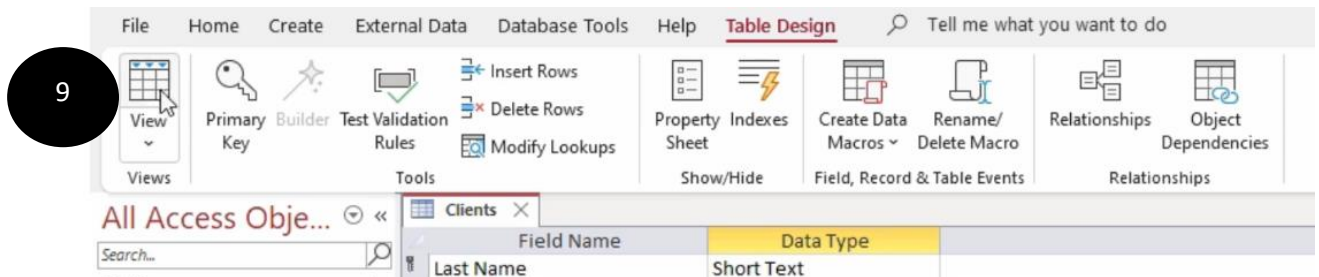


- Click on the blank space under Field Name and type in the word, "Notes". Press the Tab key, and under Data Type choose Long Text and that gives us a new Field. Anyone that wants to use the form to type in notes, or copy and paste text from another application has a space to do it.

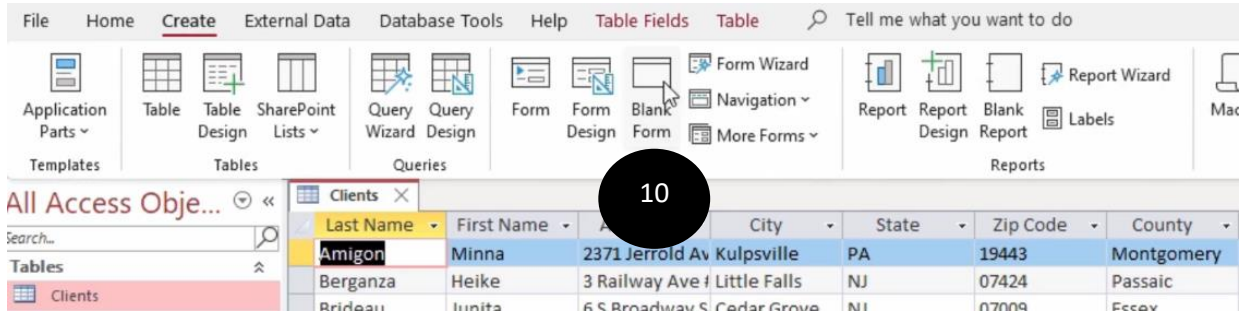


- Right-click on the clients Tab and click Save.

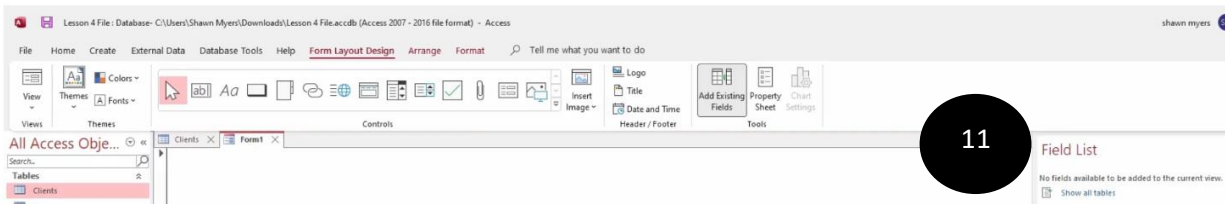
- Click the top portion of the View button to go back to the Data Sheet view.



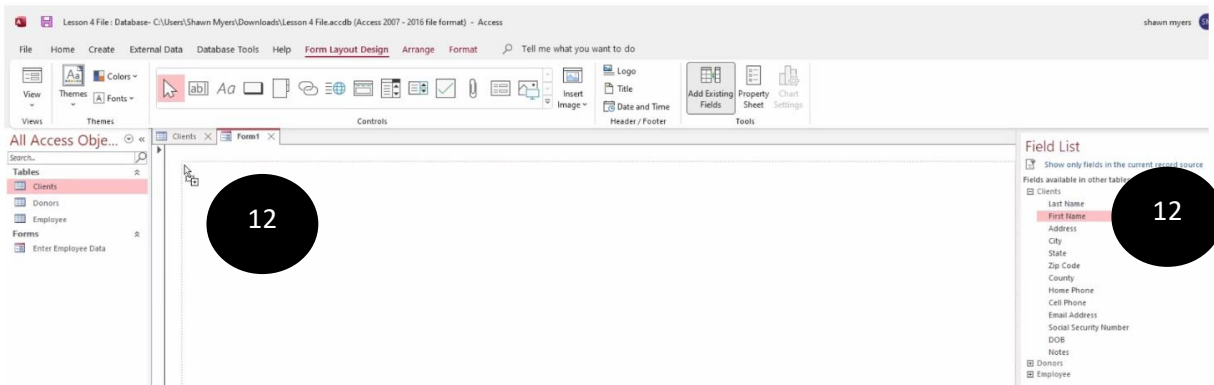
10. Go to the Create tab and choose Blank Form



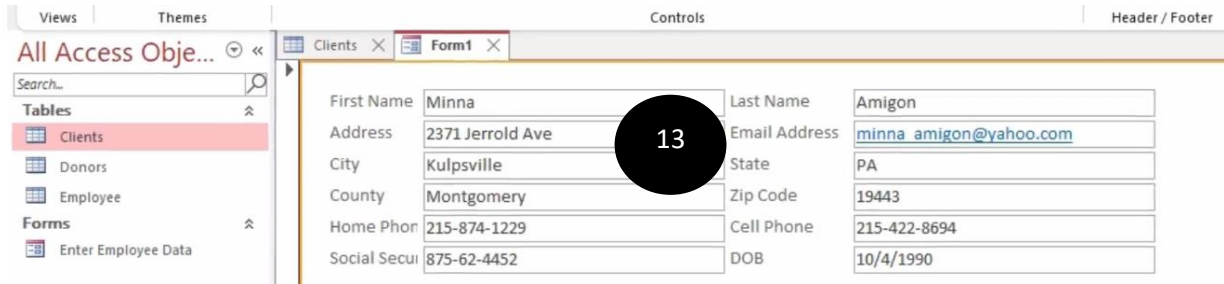
11. This opens the Form Layout View. Click on "Show All Tables" under Field List



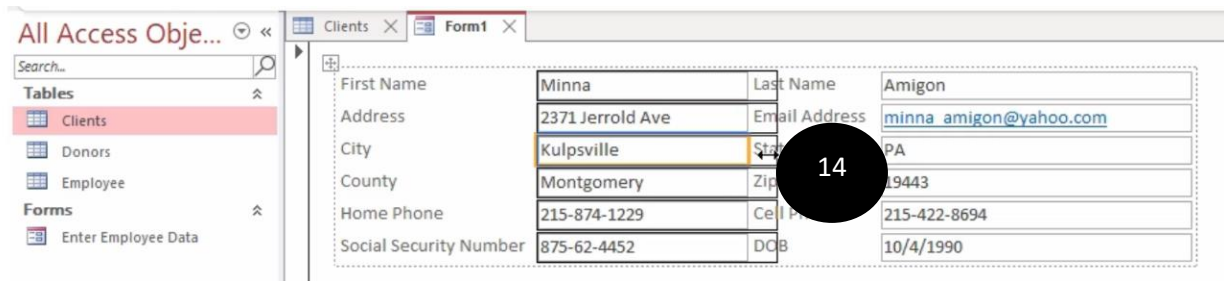
12. Click on the plus sign next to the Clients Table; then click on the first name and then move into the upper left corner.



13. Move the last name next to the first name. Repeat the steps to finish completing the Form.



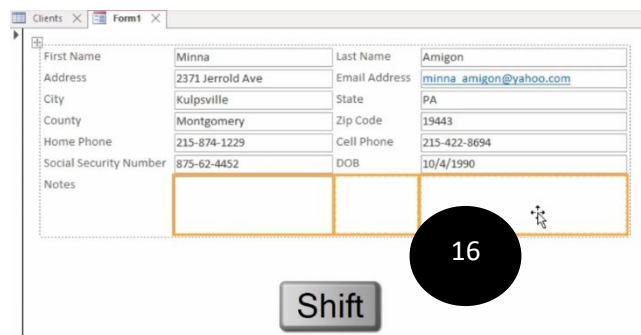
14. After you finish adding the rest of the contact information you can left click on the place holders, use the mouse to adjust the spacing between the fields.



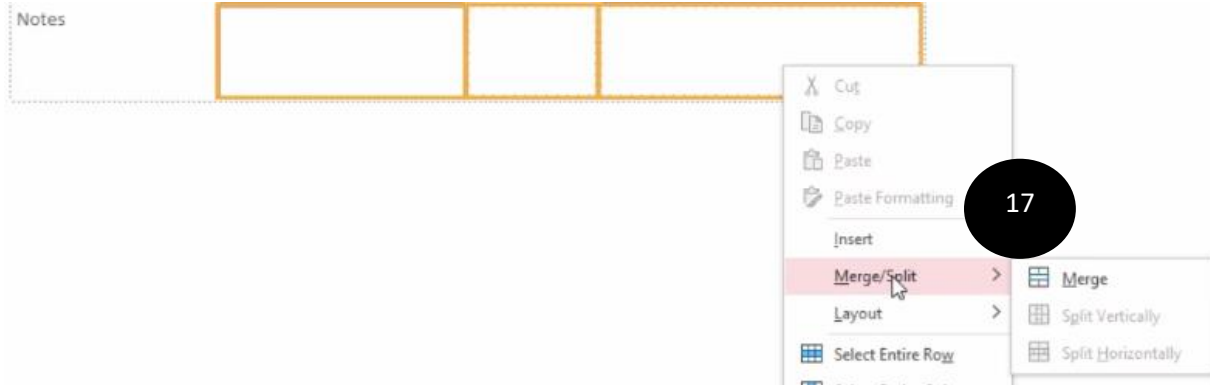
15. Add a Notes field and place it right underneath the social security number.



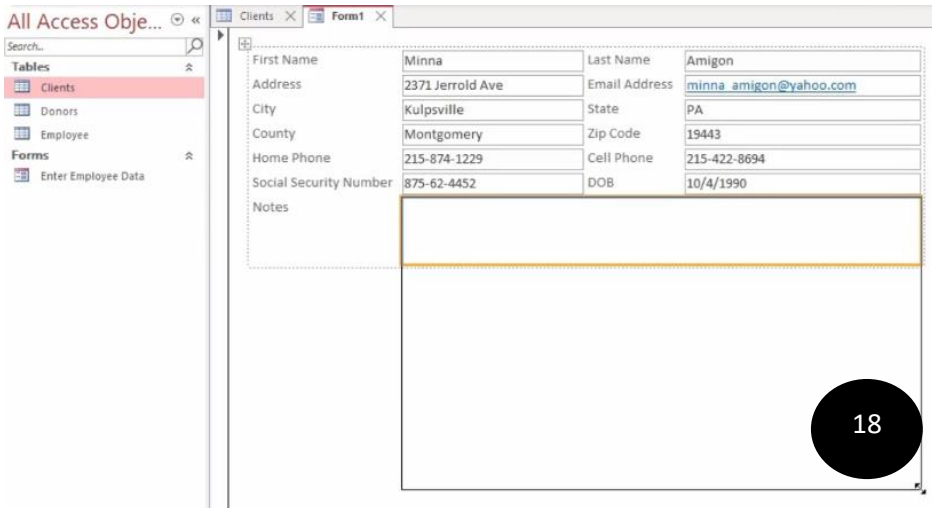
16. Make the space for the Notes wide enough, so that the user can type in notes or copy and paste text from another application. Click on the first placeholder, hold down the shift key, then click on the other two placeholders.



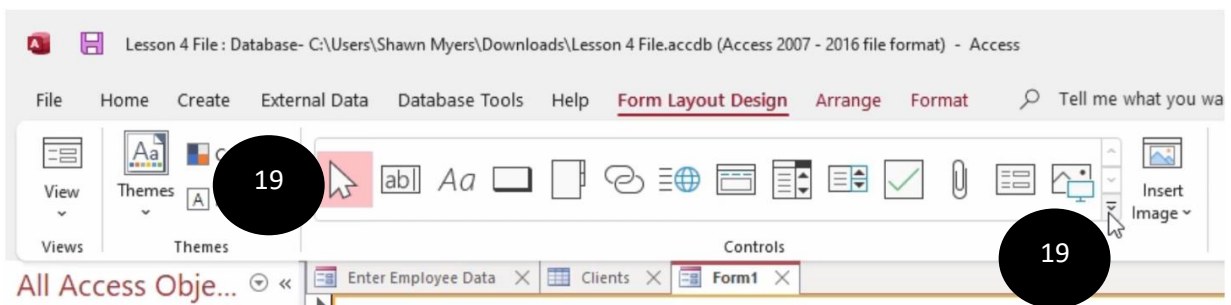
17. Right-click and choose Merge.



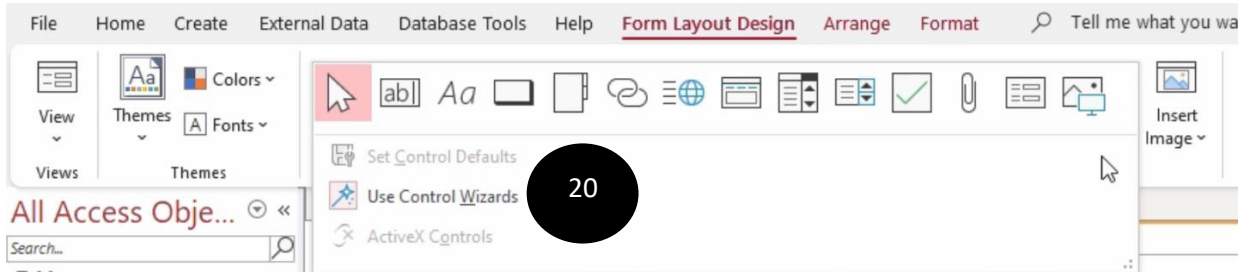
18. Then position the mouse over the lower right corner and then move it down to make it longer



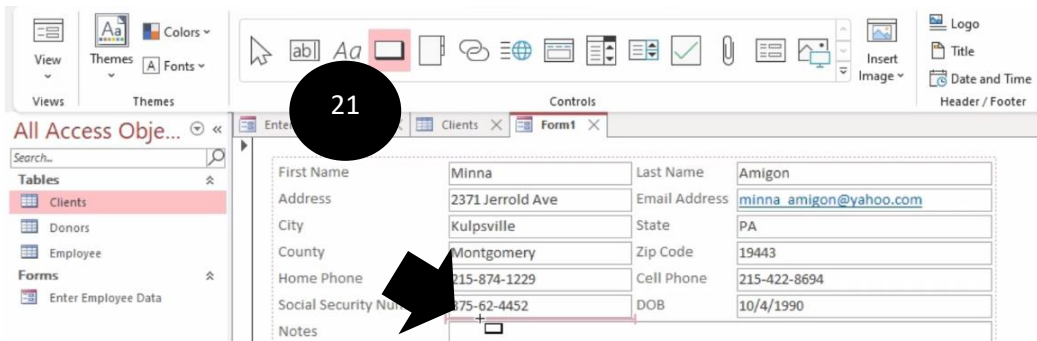
19. Let's now add something called Command Buttons. First, make sure that the Select button is activated. Then click on the down arrow in the Controls group.



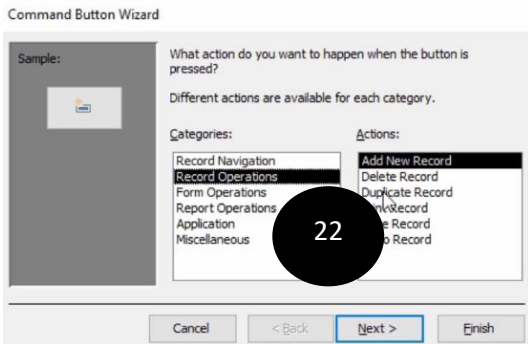
20. Make sure that the Use Control Wizards button is activated. You will know it is active when you see the button shaded and highlighted in red.



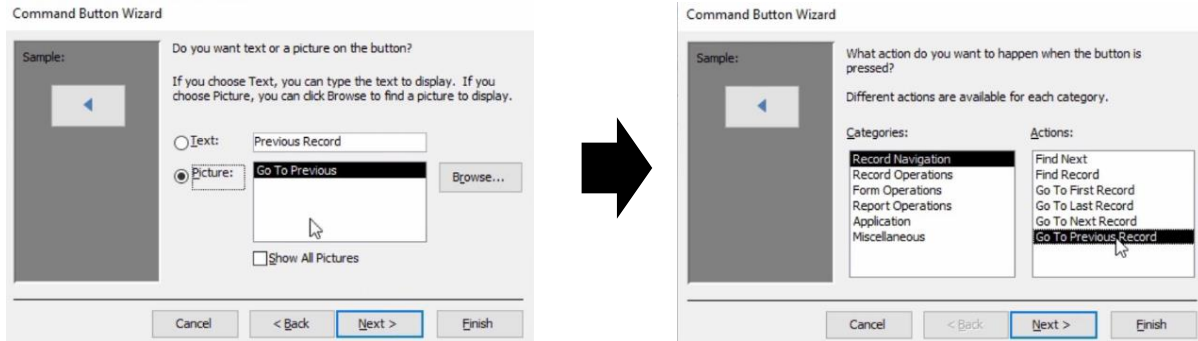
21. Click on the Button in the Controls group, then position the Button icon just above the Notes Field.



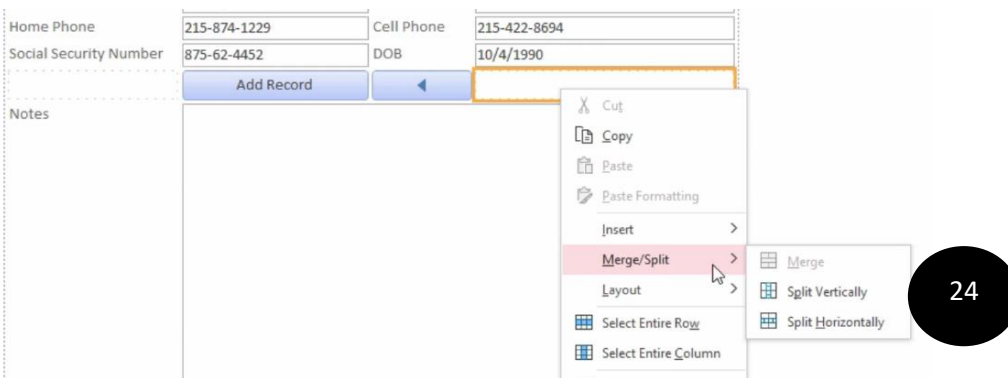
22. The Command Button Wizard will open. Under Categories, click on Record Operations. Under Actions, click on Add New Record if it is not already selected. Click on Next. Choose the option to display text and then choose Finish.



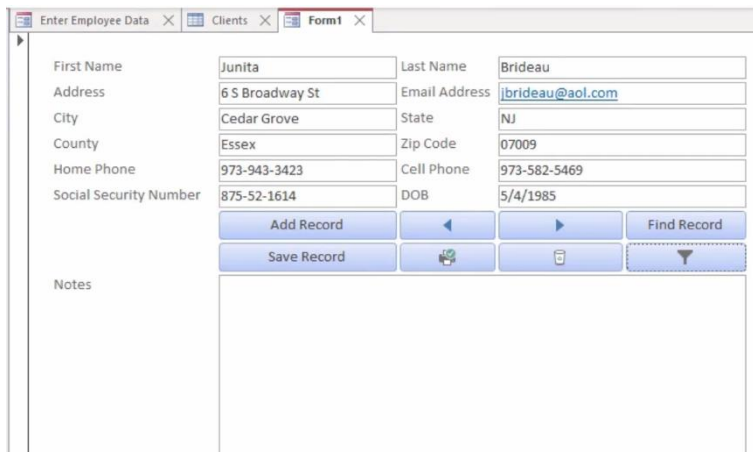
23. Repeat these steps to add a command called, "Go to Previous". Let's use a picture instead of text for the Command button; click Finish.



24. Let's add space for two new buttons by clicking on the placeholder, right-click and choose "Split Horizontally" under Merge and Split.

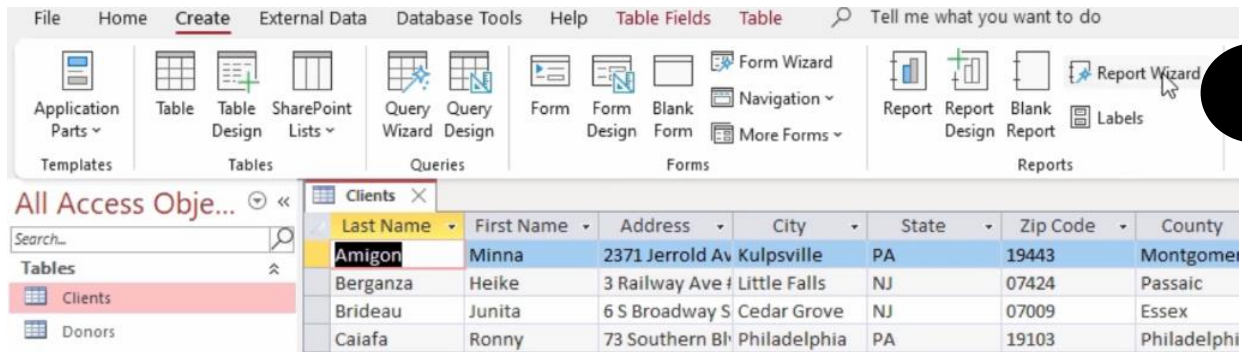


25. Add two more buttons. One for Go to Next Record; and another one for Find Record. You can continue to add additional buttons as needed. Here is what the Form looks like with a total of eight buttons:

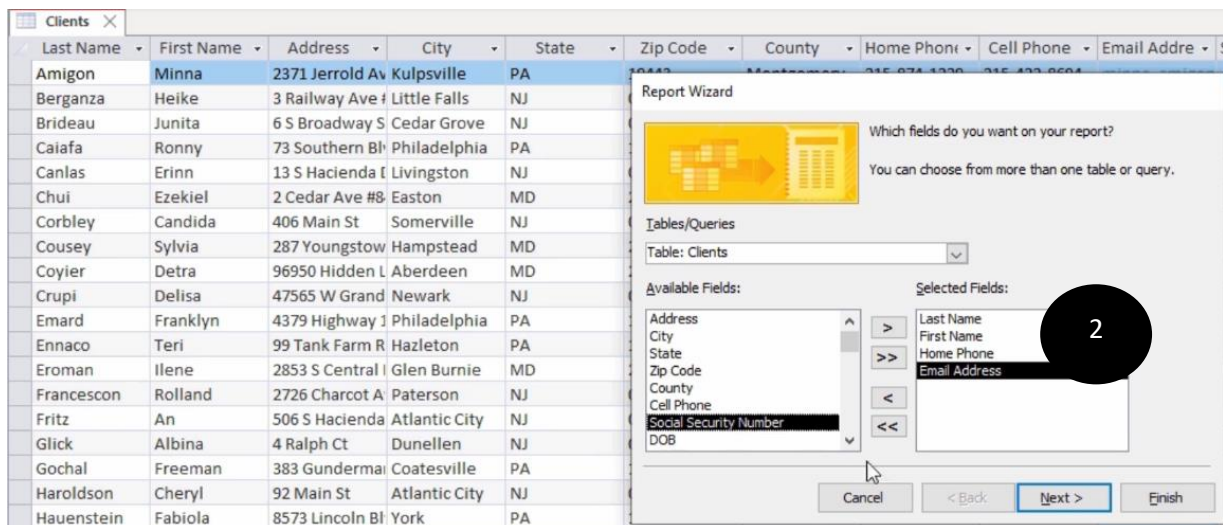


Lesson Five: Create and Modify Reports

1. Click on the Clients Table, then click on Create. Go to the Reports group and click on Report Wizard.

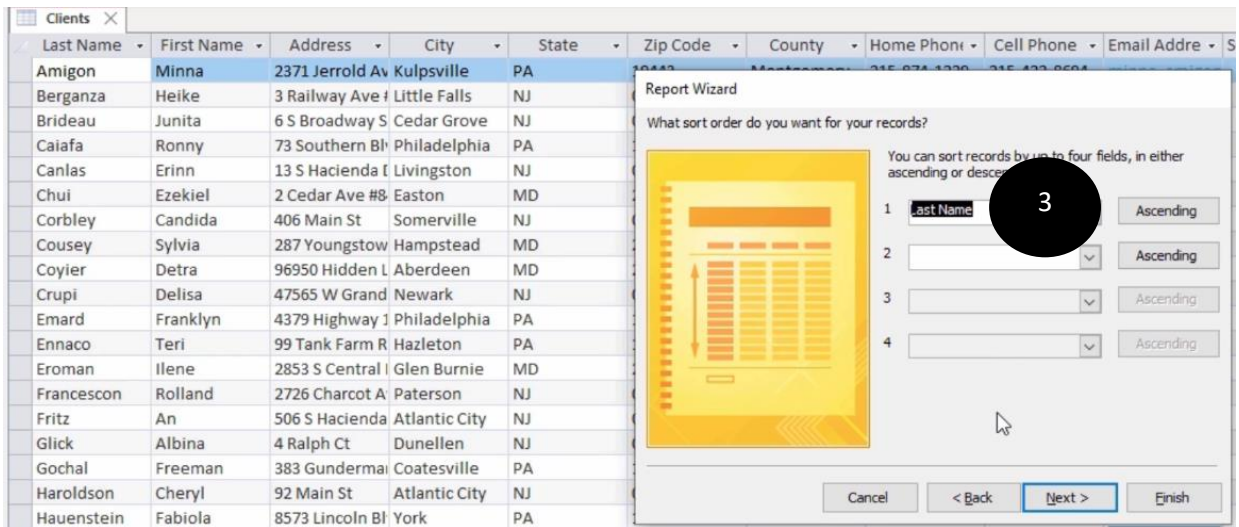


2. Double-click on Last Name, First Name, Home Phone and E-Mail Address; click Next.

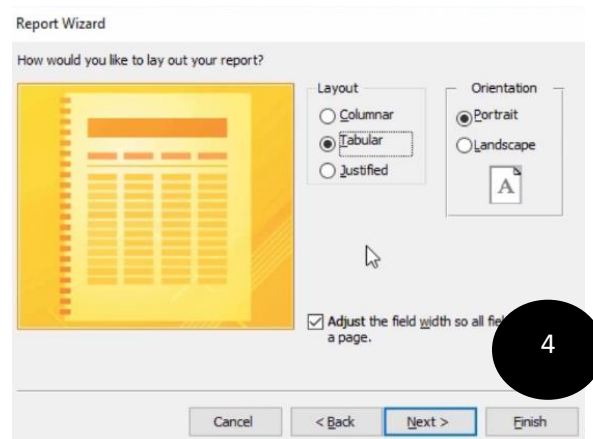
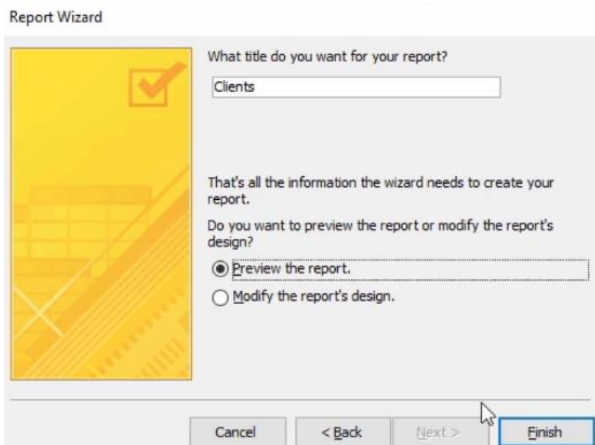


The Report Wizard gives you the option to organize the data into groups, which is not something we need to do for this report; click Next.

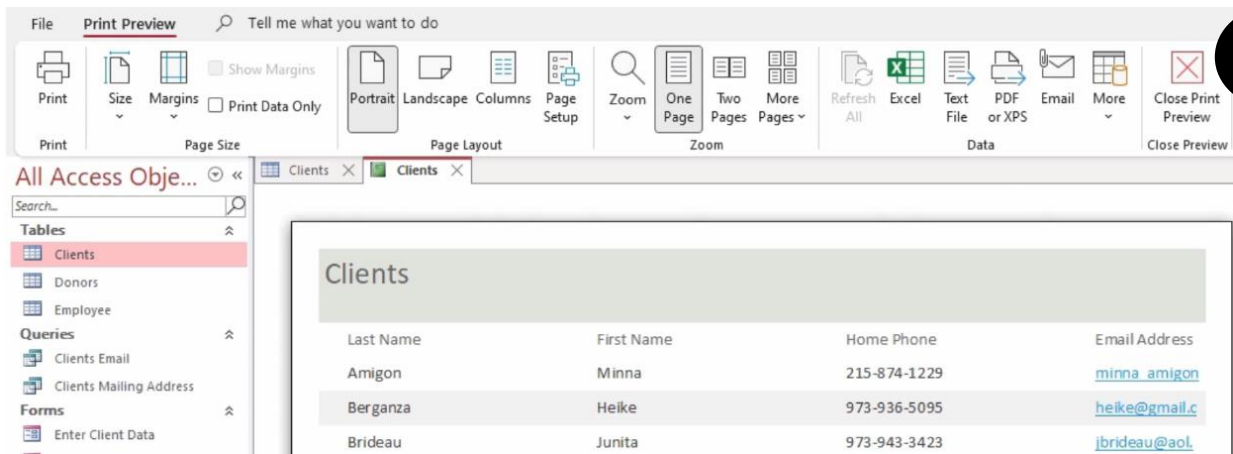
- You have the option to sort the data in ascending order which of the A-Z; choose Last Name. Click "Next".



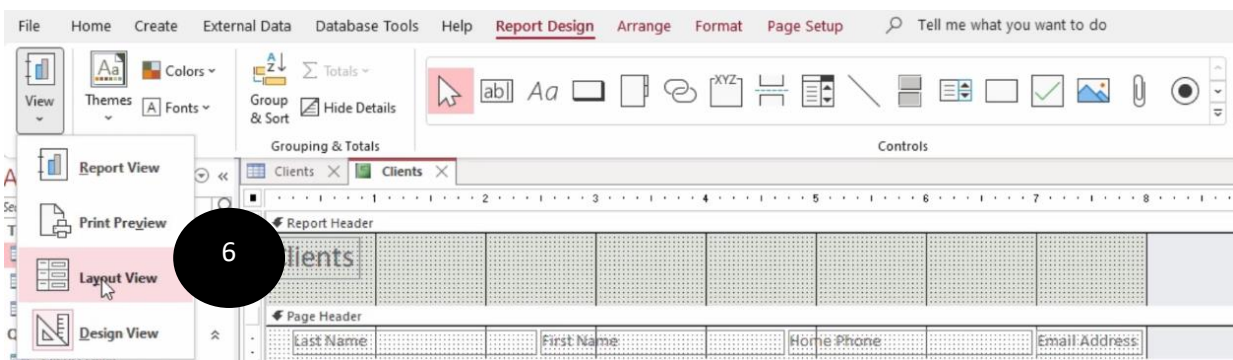
- Choose a tabular layout option; click Next. Click Next again, then click on Finish.



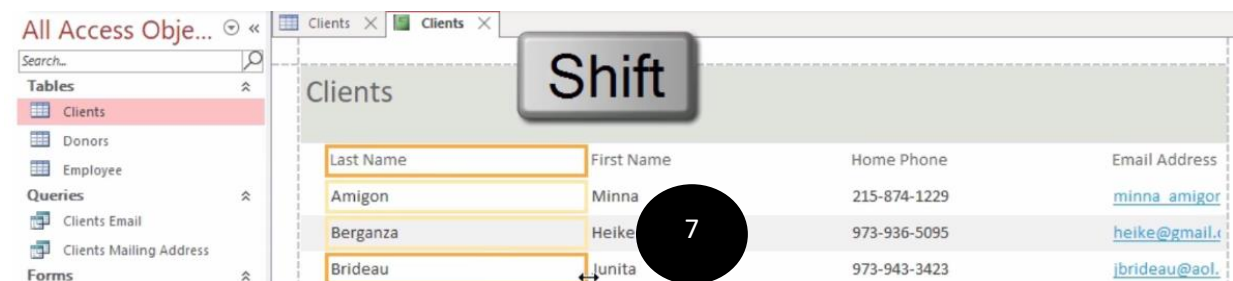
- From here, you can see what the report will look like as a printed document. Click on the Close Print Preview button.



- Click on the View button down arrow and choose Layout View.



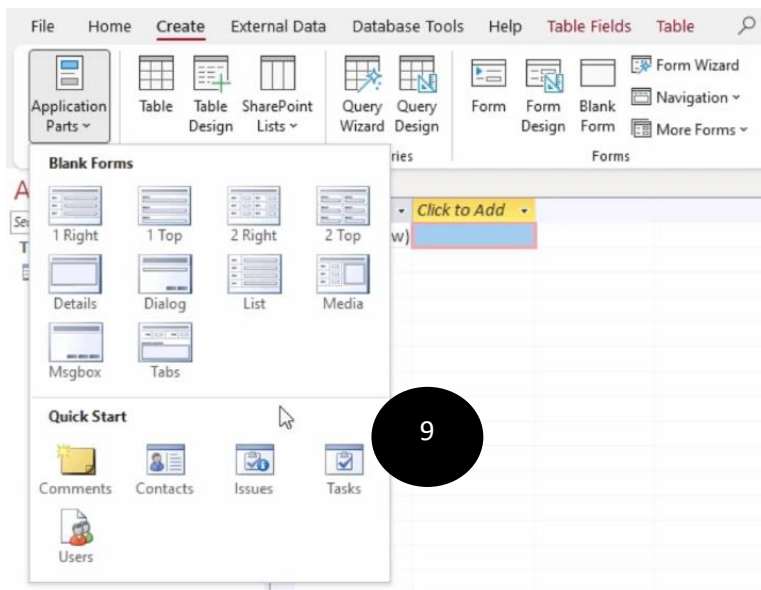
- This view allows you to change the positioning of the columns. Click on the Last Name column heading, hold down the Shift key, and then click on one of the names in the Column (Brideau, for example) and then use your mouse to reduce the width of the column by moving it to the left.



- Repeat these steps to adjust the width of the remaining three columns, so that it looks similar to this:

Last Name	First Name	Home Phone	Email Address
Amigon	Minna	215-874-1229	minna_amigon@yahoo.com
Berganza	Heike	973-936-5095	heike@gmail.com
Brideau	Junita	973-943-3423	jbrideau@aol.com

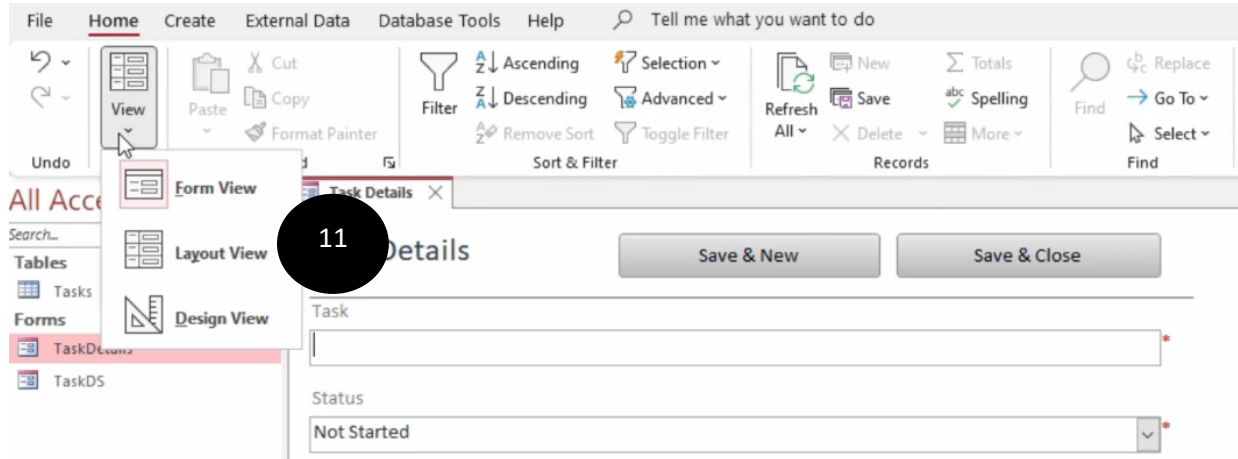
- Let's create a new table by going to the Create tab, go to Application Parts and under Quick Start, click on Tasks.



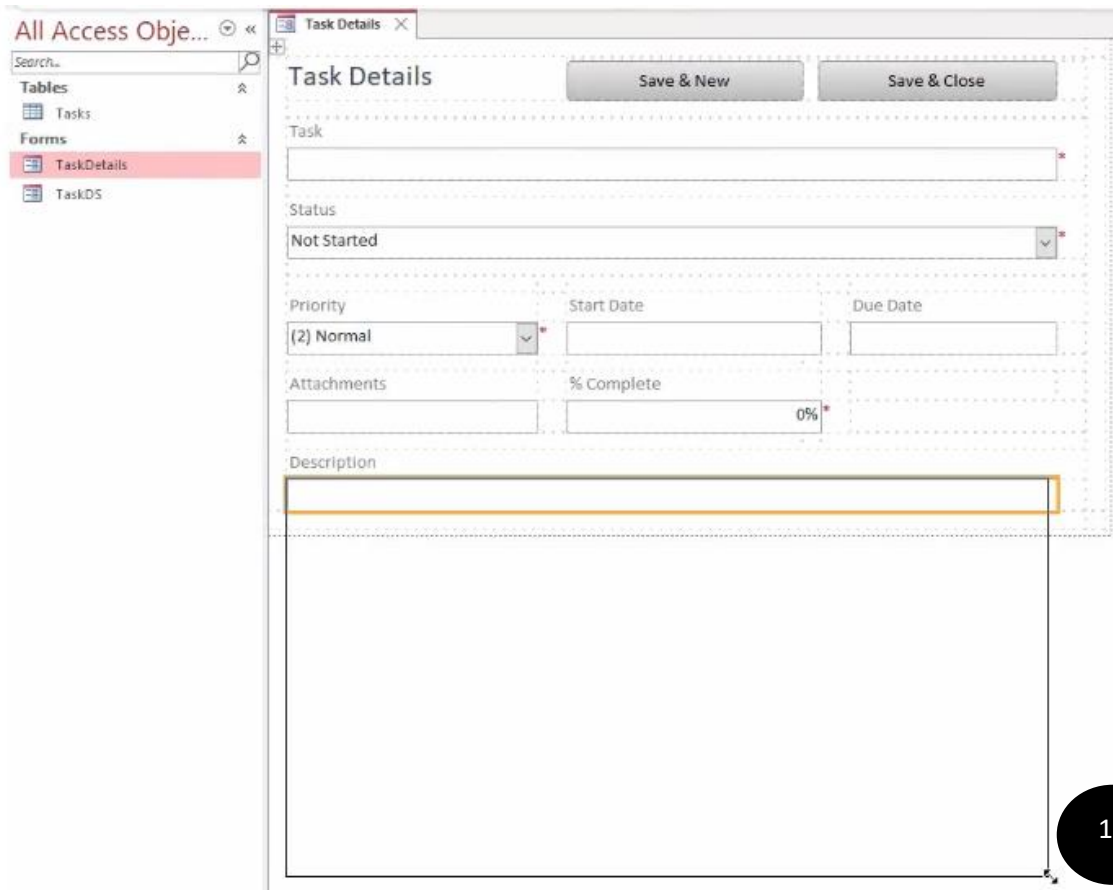
- Click on Enable Content. Double-click on the TaskDetails form



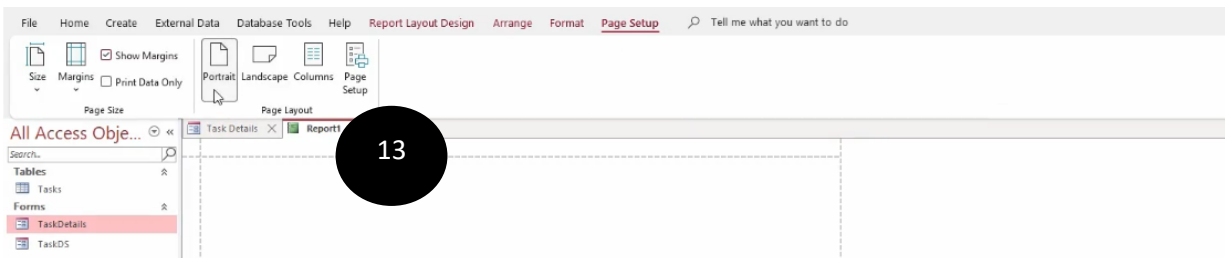
11. Click on the Home tab. Click on the View down arrow, then click on Layout View.



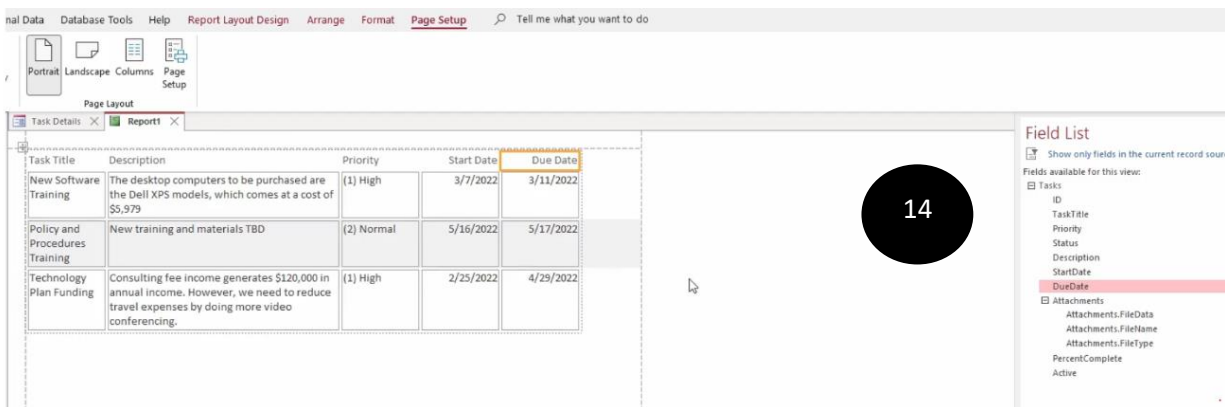
12. Go to the Description field, and make it a little longer by clicking on the lower right side and using your mouse to move the line downward.



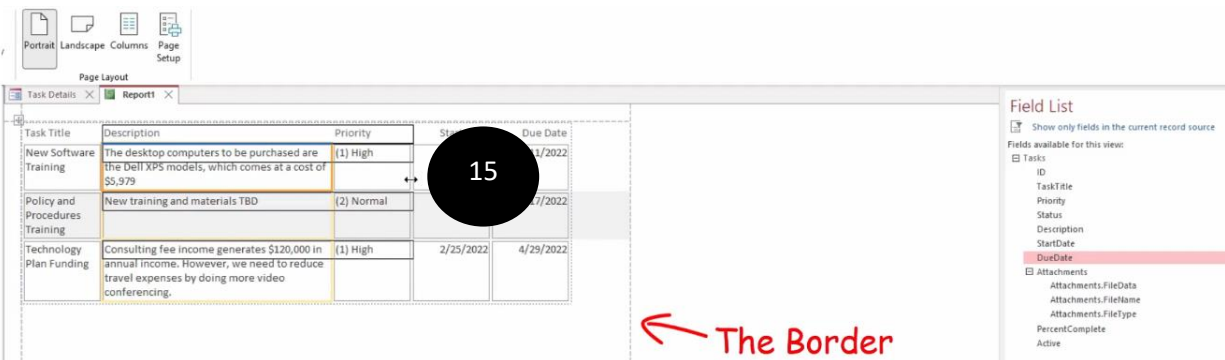
13. Let's create a report that summarizes all of the projects. Click on the Create tab. With the Report Layout tools tab selected, click on Blank Report and choose Portrait.



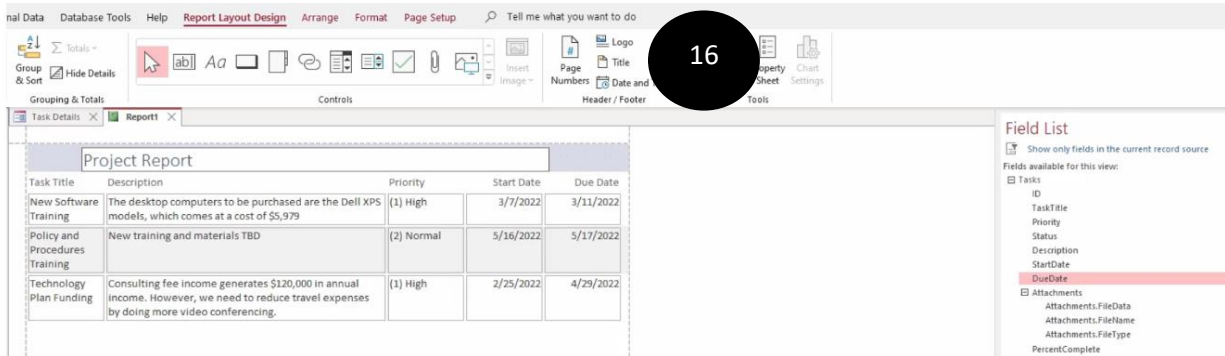
14. Click on "Show all tables", then click on the plus sign and let's add Task Title, Description, Priority, Start Date and Due Date.



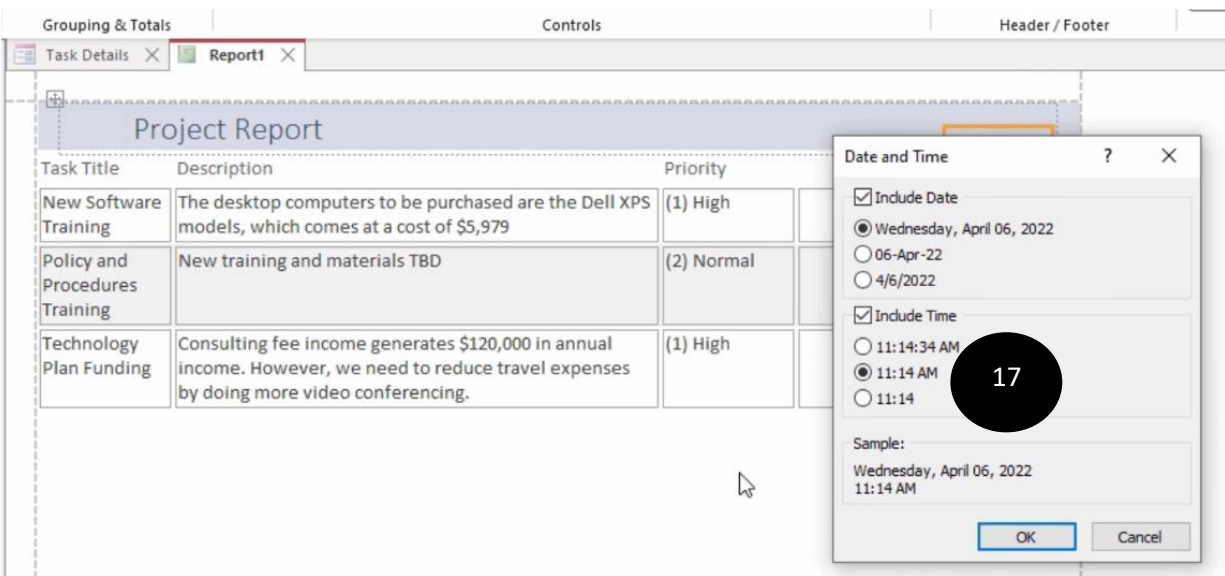
15. Position a mouse to the right side of the description and make it a little wider. Make sure that all the fields are still inside the border.



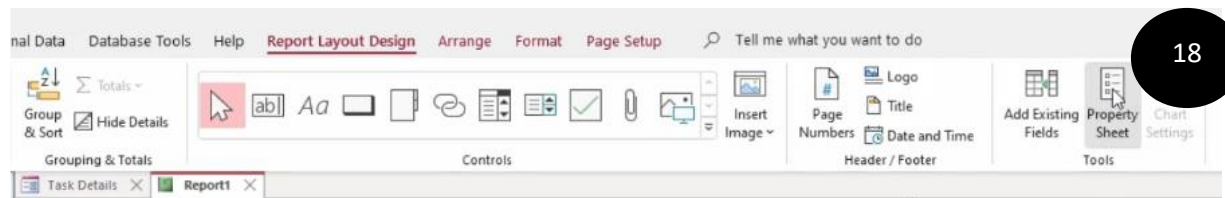
16. Click on Report Layout Design, then click on Title; and let's name it "Project Report"



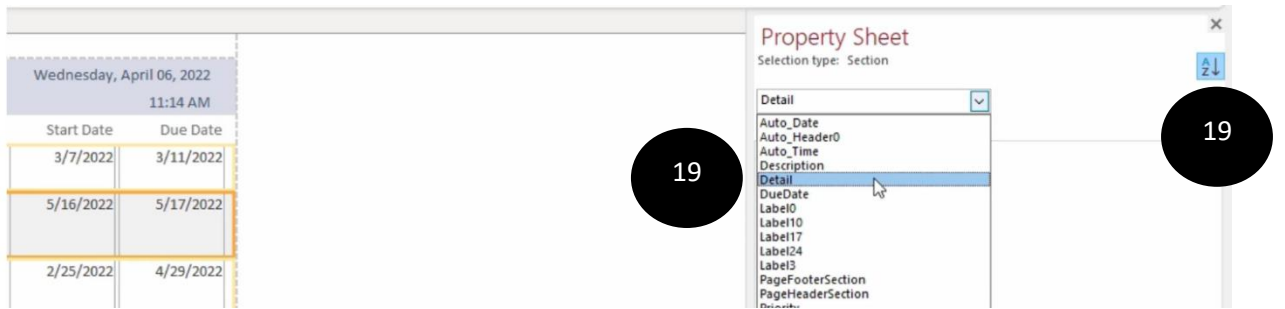
17. Click on the place holder on the right side of the report, then click on Date and Time. Check off the second option under Time; click Ok.



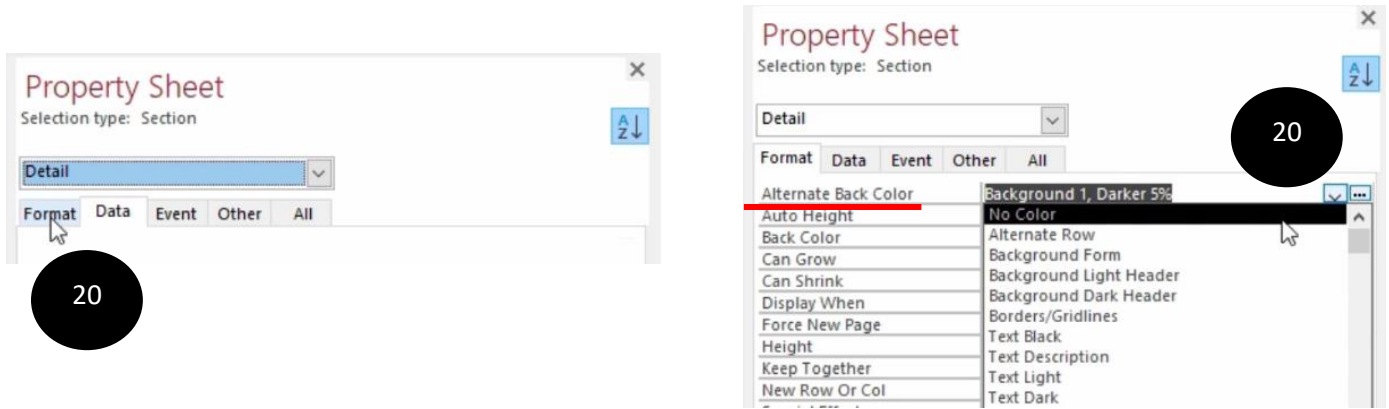
18. Close the Field List, then click on Property Sheet.



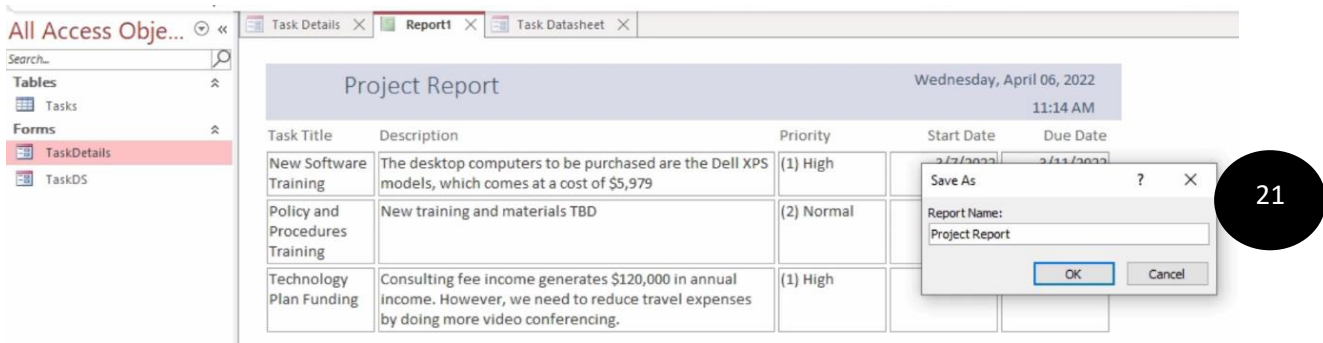
19. Click on Sort AZ under Format, then click just outside the Report and make sure you see “Detail” under Section Type.



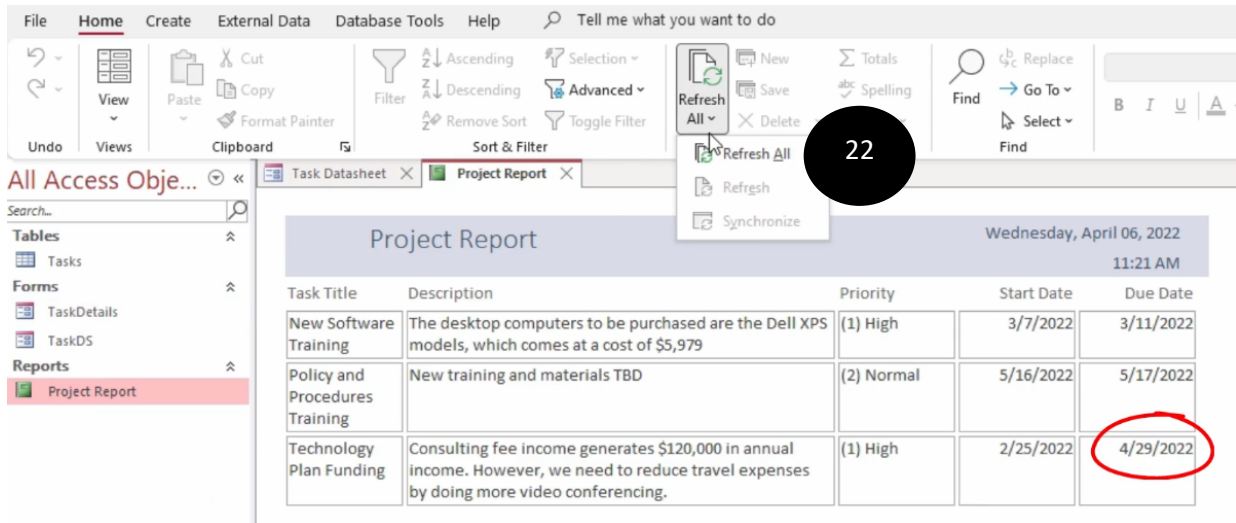
20. Then click on the Format tab. Under Alternate back color, choose “No Color”. Close the Property Sheet.



21. Then click on the View Tab to go back to Datasheet View. Then right-click on the Report tab and click Save. Let’s name it “Project Report”. Close the report.

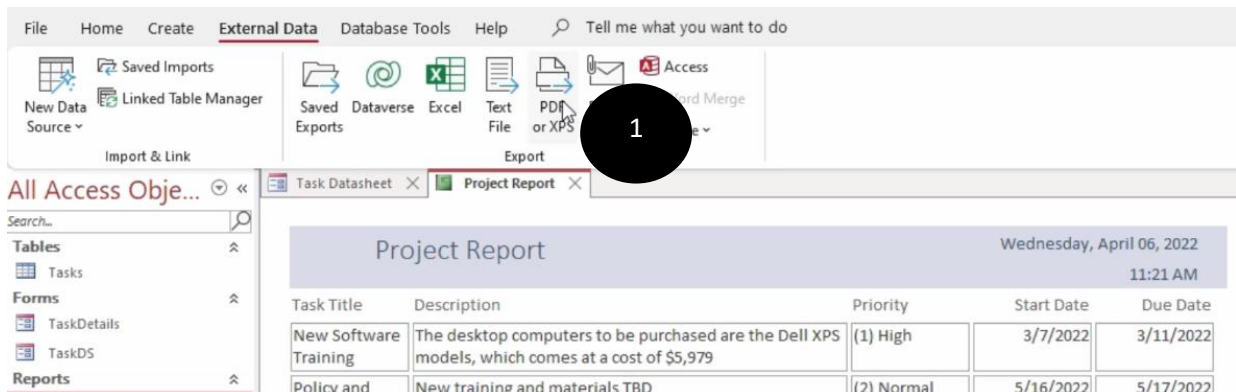


22. As you input new entries and make changes using the Project form, the report will also reflect those changes after you open it and click on “Refresh All”. For example, we can change one of the due dates on the Form and then save it. When we go back to open the Report, we can click on Refresh All, and see that due date change made on the report:

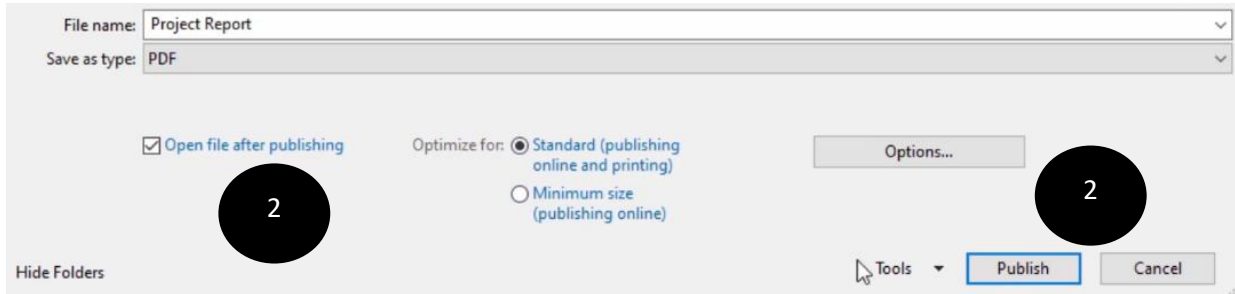


Exporting a Report

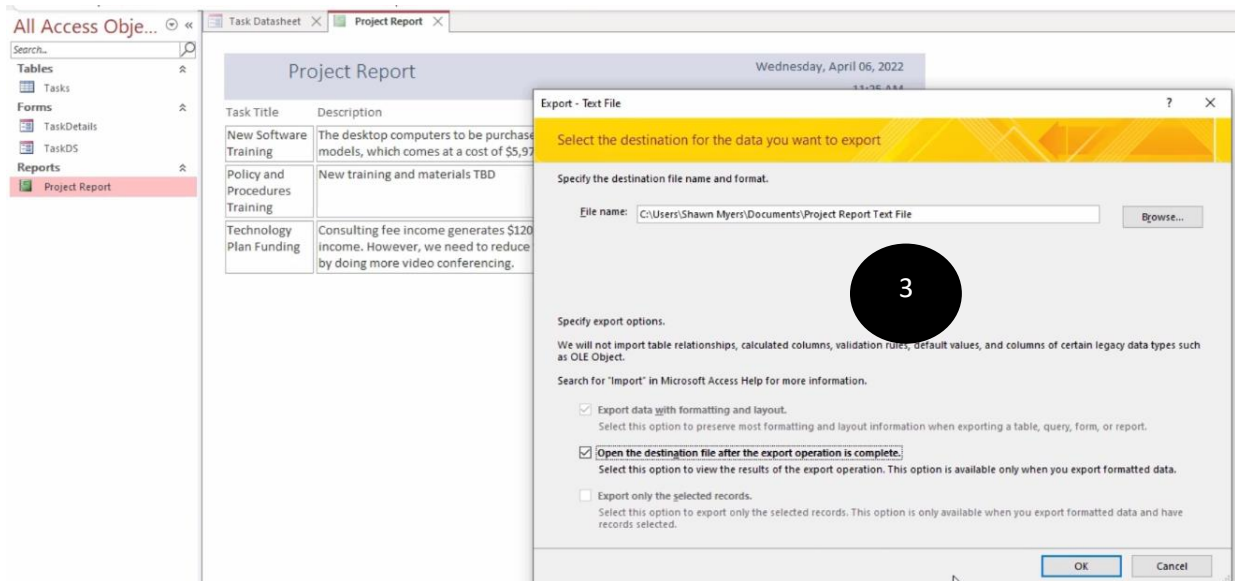
1. To export the report as a PDF file, click on the external data tab. Click on PDF or XPS from the Export group.



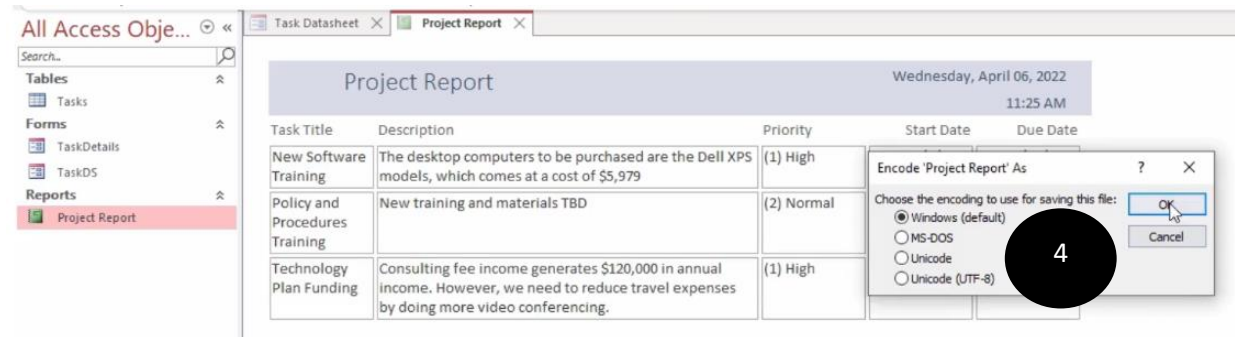
- Choose a file location in this case. For this example, let's choose "Open File After Publishing". Let's choose "Standard" and then click "Publish".



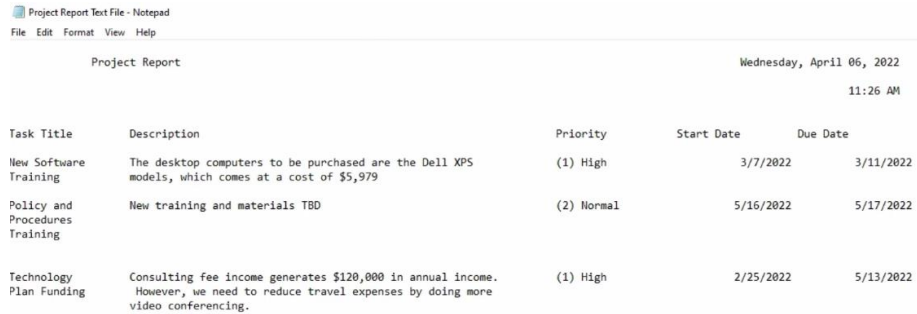
- To export the report as a text file, you would click on "Text File" under Export. Change the file name, keep the same file location and checkoff where it says, "Open the destination file after the exports been completed". Click Ok.



- Keep the default setting under "Encode 'Project Report' As"; click OK.



The Report will open in the Windows Notepad application.



Project Report Text File - Notepad
File Edit Format View Help

Project Report

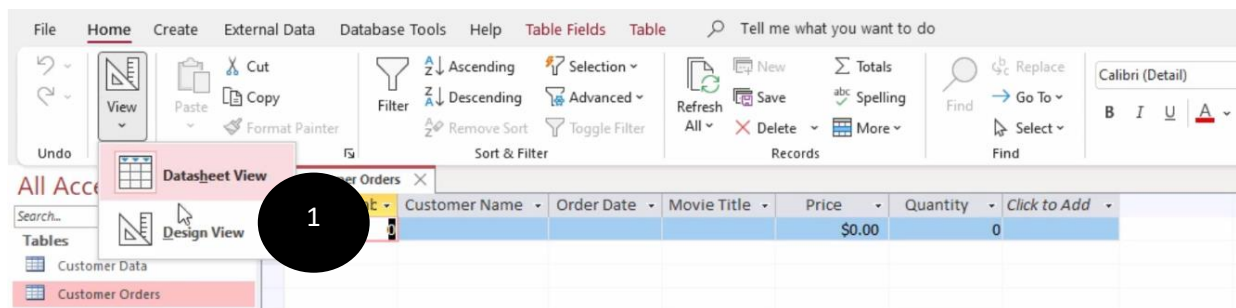
Wednesday, April 06, 2022
11:26 AM

Task Title	Description	Priority	Start Date	Due Date
New Software Training	The desktop computers to be purchased are the Dell XPS models, which comes at a cost of \$5,979	(1) High	3/7/2022	3/11/2022
Policy and Procedures Training	New training and materials TBD	(2) Normal	5/16/2022	5/17/2022
Technology Plan Funding	Consulting fee income generates \$120,000 in annual income. However, we need to reduce travel expenses by doing more video conferencing.	(1) High	2/25/2022	5/13/2022

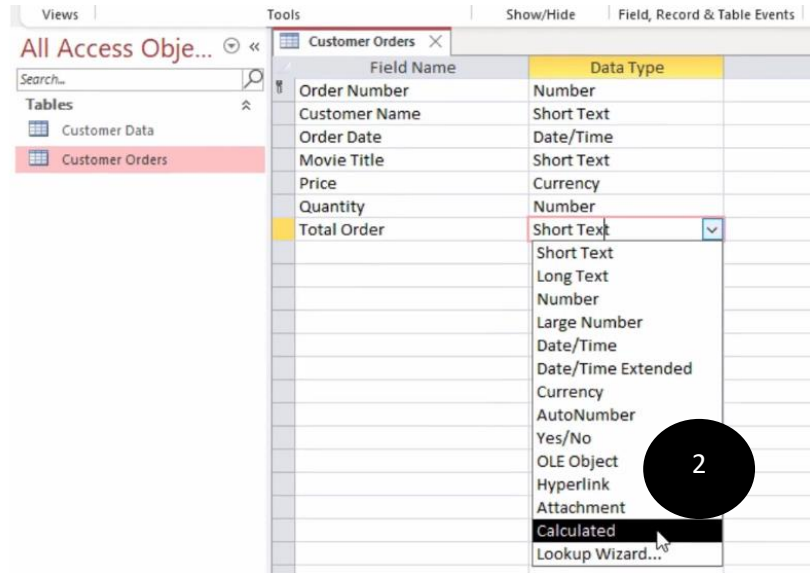
Access Project: Create a Database with Table Relationships

In this lesson we are going to create an access database that includes something called “Relationships”. A Relationship means that records in one Table can be used to automatically populate the records in other Tables.

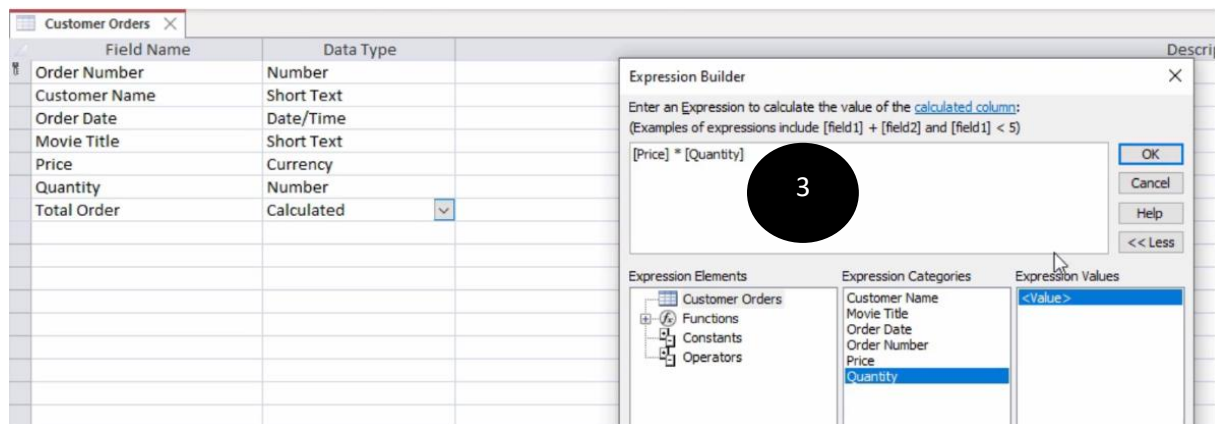
1. Click on the Customer Order Table and go to Design View.



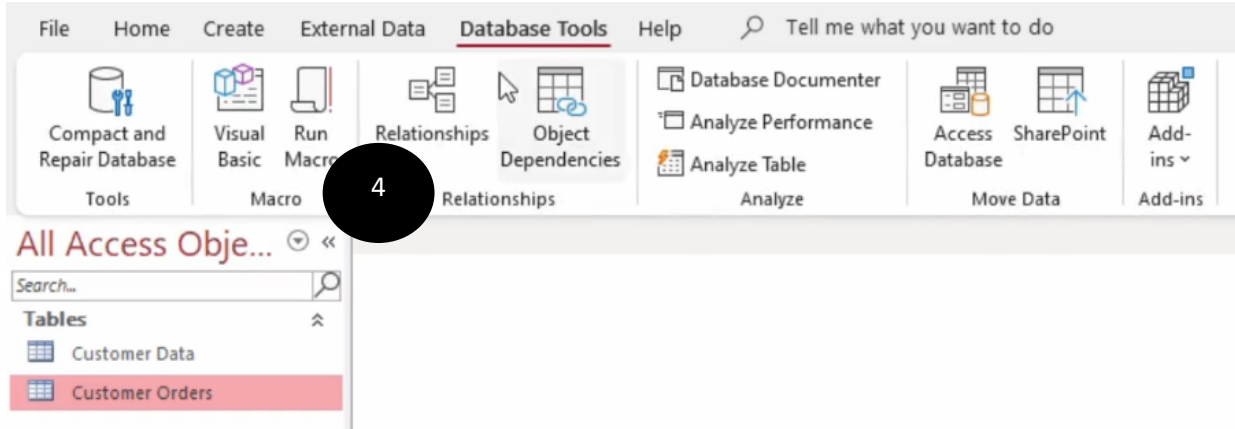
- Let's add another Field that will multiply the price times the quantity ordered. Type the words "Total Order", then go to the Data Type drop down and choose the "Calculated" Data Type.



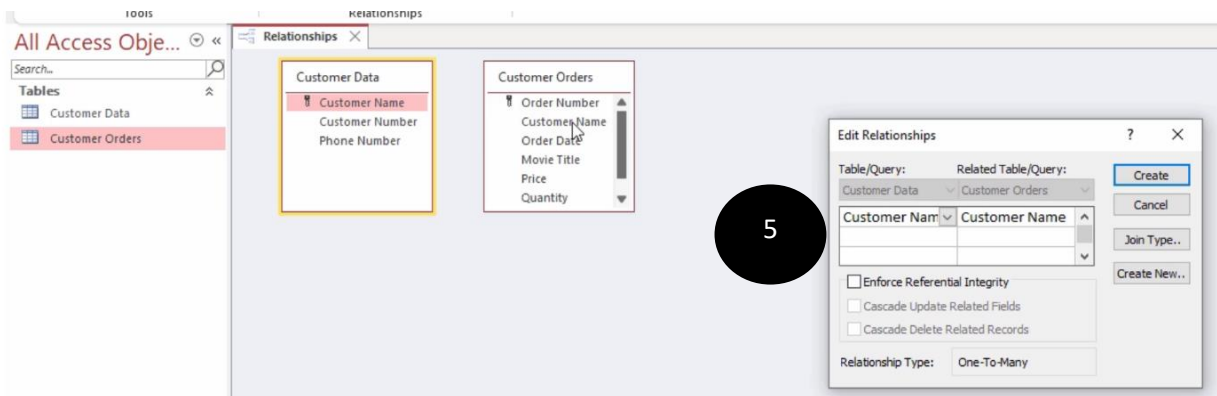
- This will open what's called Expression Builder, which is used to input formulas that perform calculations. Double-click on price input an asterisk and then double-click on Quantity; click OK. Save the Table and then close it.



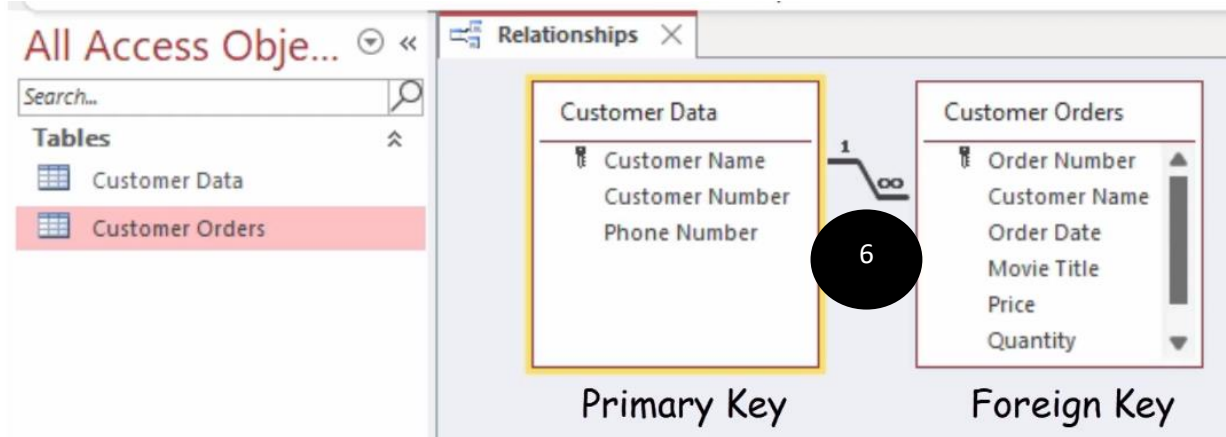
4. Let's click on the Database Tools tab and choose Relationships



5. Click on Customer Name in the Customer data table. Then use the mouse to create what's called a Join Line between the two customer name fields. The Edit Relationship dialog box will appear. Check off where it says, "Enforce Referential Integrity", which means that you're protecting the relationship between the two fields. By enforcing referential integrity, you are saying that the record in one Table will always have an associated record in another Table. Click on Create.



- You will see that a Join Line appears, which indicates a one-to-many relationship. In other words, the customer information Table can only have one unique customer name in the Table; this is called the **Primary Key**. The Order Table, however, can have many customer names; and the same customer name can appear multiple times. This is referred to as the **Foreign Key**.



- Click on the Close button, then double-click on the Customer data table. You will see that there is a plus sign next to each name. And when you click on it, the information from the Order table will appear.

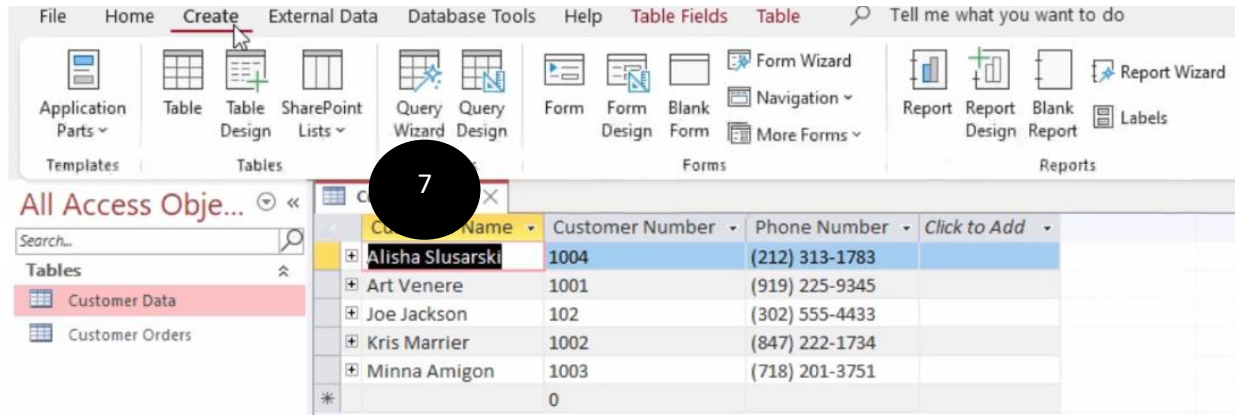
The screenshot shows the 'Customer Data' table in Microsoft Access. The table has columns: Customer Name, Customer Number, Phone Number, and Click to Add. The row for 'Alisha Slusarski' (Customer Number 1004, Phone Number (212) 313-1783) has a plus sign next to her name. A sub-table is expanded below it, showing order details for that customer. The sub-table has columns: Order Numt, Order Date, Movie Title, Price, Quantity, Total Order, and Click to Add. The first row in the sub-table has values: 901, 4/4/2022, Star Wars, \$10.95, 2, and \$21.90.

- To see how this works, input the following data under the name “Alisha Slusarski”. When finished, click on the minus sign, and then save the Table.

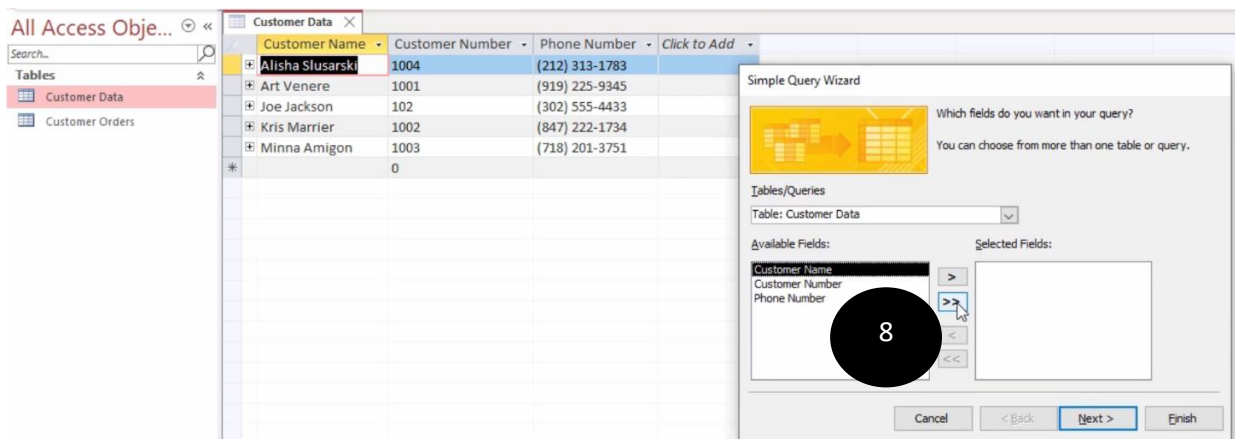
Customer Name	Customer Number	Phone Number	Click to Add			
Alisha Slusarski	1004	(212) 313-1783				
Order Numt	Order Date	Movie Title	Price	Quantity	Total Order	Click to Add
901	4/4/2022	Star Wars	\$10.95	2	\$21.90	

Create a Query

7. A Query is an Object that can display a summary of information from one or more tables. Click on the Customer Data Table, then click on the Create tab; click on the Query Wizard.

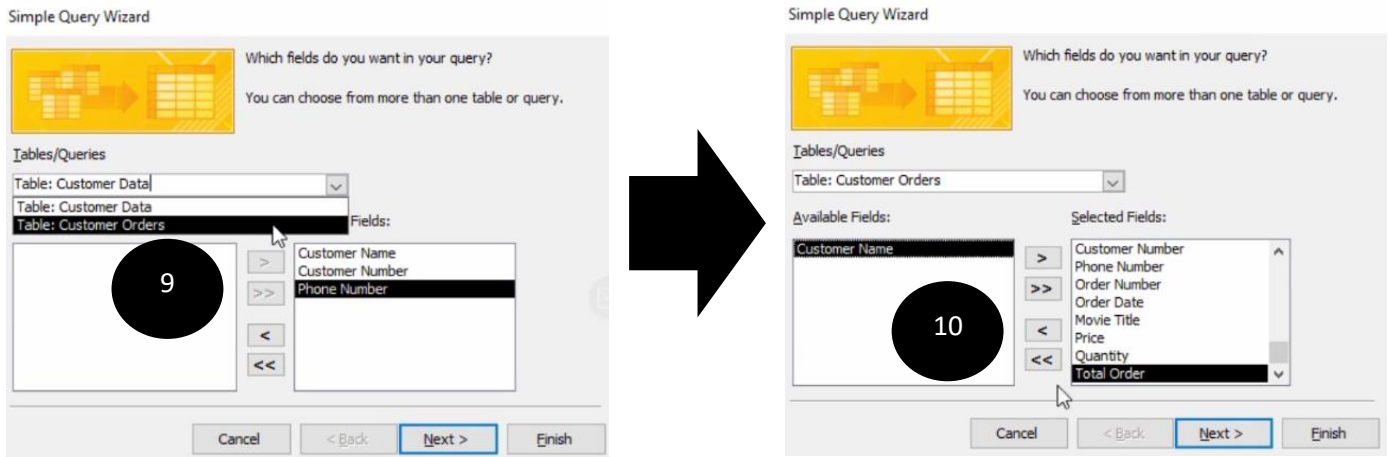


8. The New Query dialog box will appear. Choose Simple Query and then click OK. Under Available Fields, choose all the fields from the Custom Information table by clicking on the two right arrows.

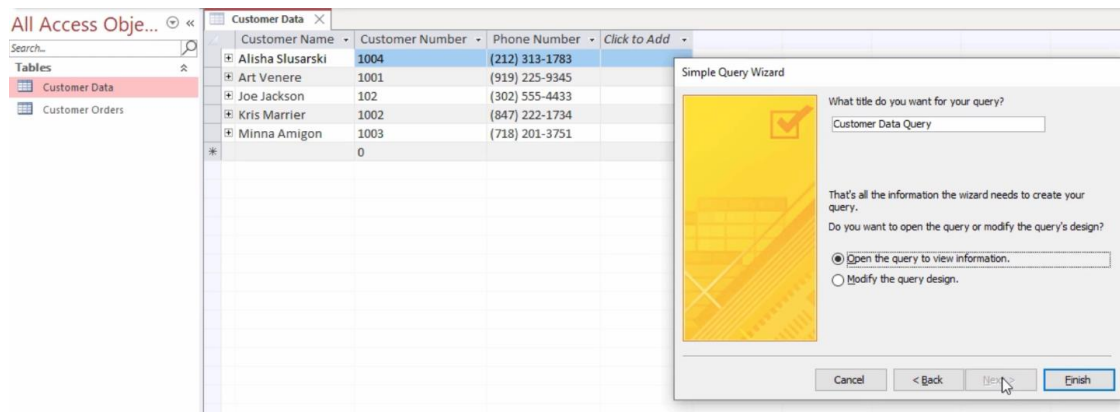


9. Click on the Tables Queries down arrow. Choose the Customer Orders table.

10. Choose all the fields except for the Customer Name field by either clicking on the right arrow to select each field or we can double-click on each name. When finished, click the Next button twice.

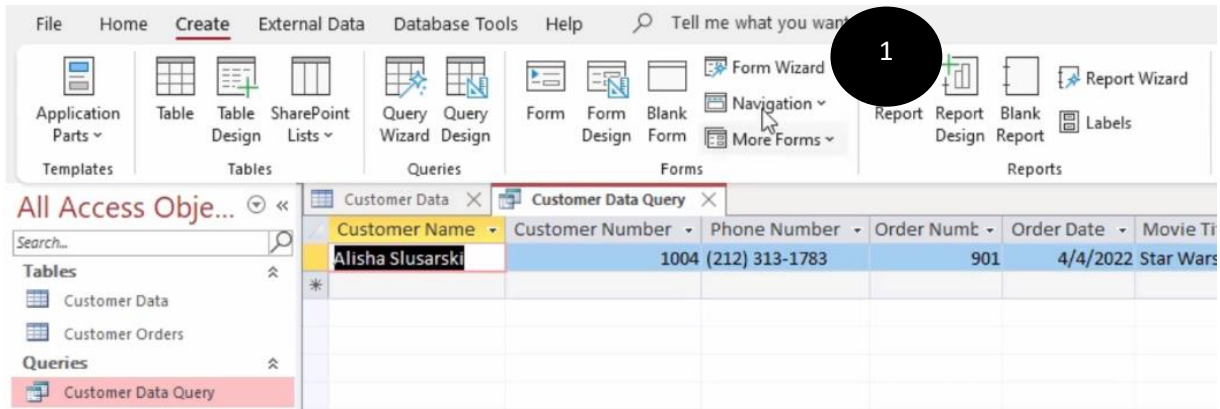


11. Keep the default name, which is “Customer Data Query” and click Finish.



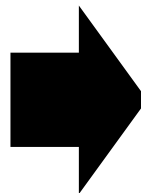
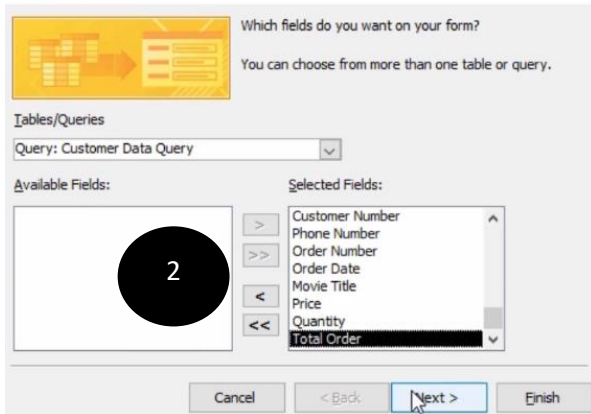
Create an Order Form

1. Click on the Customer Data Query, then click on the Create tab; click on Form Wizard.

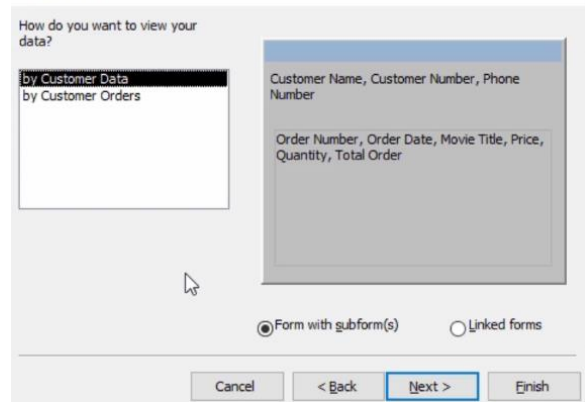


2. Click on the two arrows to select all the fields and then click Next. Let's keep the option to create a subform. This means that one form will be used to input the customer data and the other form, which is a subform, will be used enter the order. Click next.

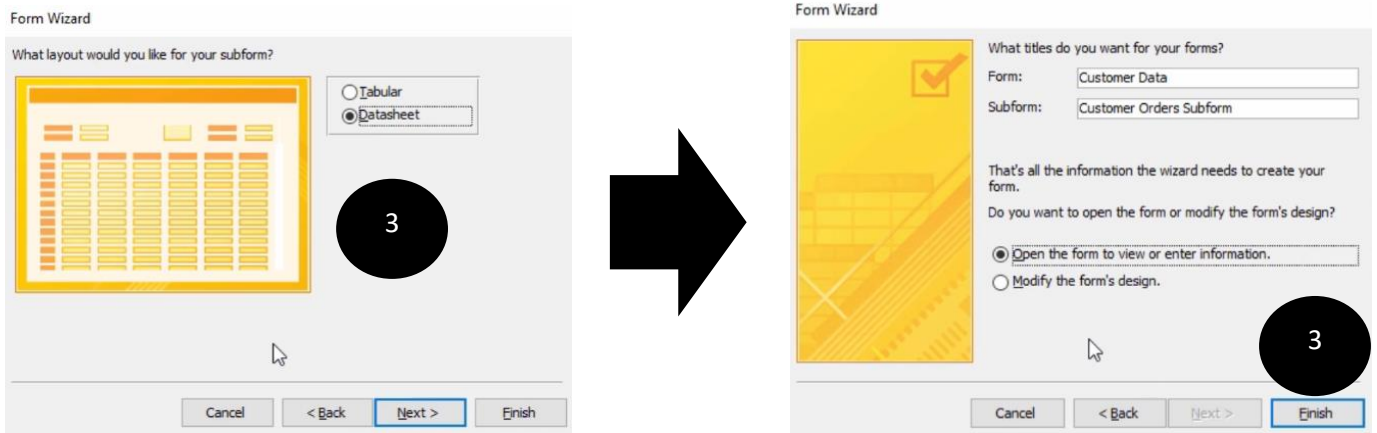
Form Wizard



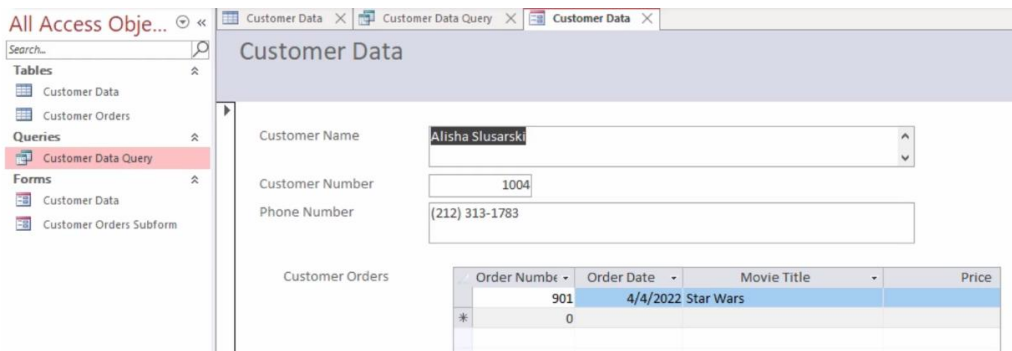
Form Wizard



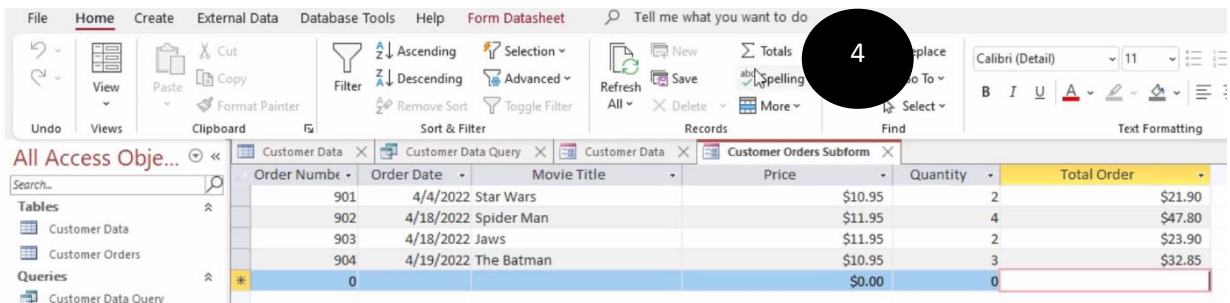
- Use Datasheet as the subform layout; click Next. Let's keep the default names and click Finish.



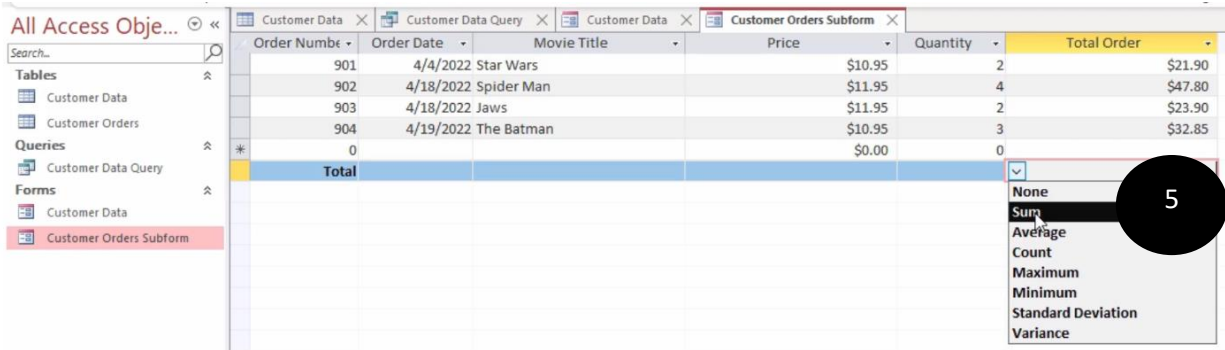
The Form will now show the two areas where data can be inputted.



- Click on the Total Orders Subform, then click on the last row. Click on the Home tab, then click on the Totals button for the Records group.



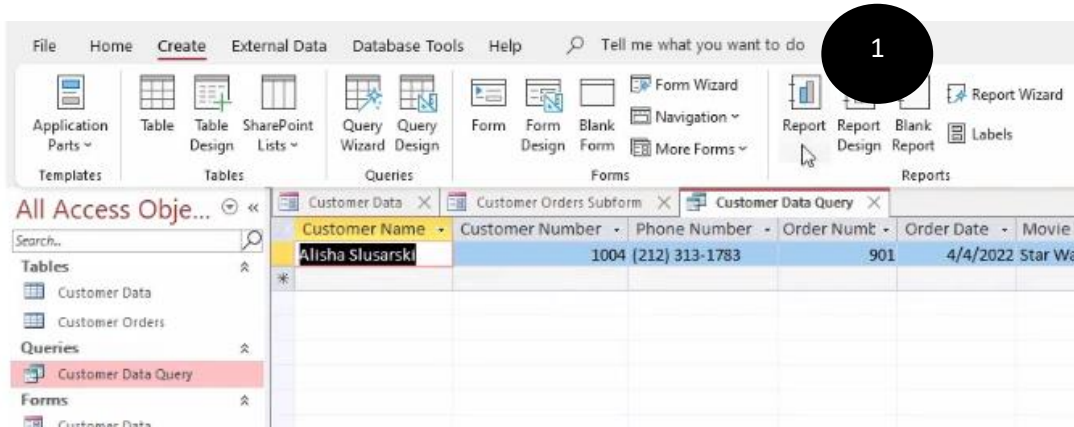
5. Click on a space under Total Order and choose Sum.



And now the total will be calculated each time a new order is entered. You can repeat these steps to create a total row for the Customer Information Form.

Create an Order Entry Report

1. Click on the Customer Data Query. Click on Create, then click on Report in the Reports group.



2. After the Report appears, you can switch to the Layout view to adjust the formatting.

Customer Order Report

Wednesday, April 06, 2022
6:24:29 PM

Customer Name	Customer Number	Phone Number	Order Number	Order Date	Movie Title	Price	Quantity	Total Order
Art Venere	1001	(919) 225-9345	9001	4/14/2022	Spider Man	\$10.95	2	\$21.90
Art Venere	1001	(919) 225-9345	901	4/6/2022	Rising Sun	\$19.00	2	\$38.00
Kris Marrier	1002	(847) 222-1734	902	4/7/2022	Spider Man	\$11.95	4	\$47.80
Minna Amigon	1003	(718) 201-3751	903	4/7/2022	Jaws	\$11.95	2	\$23.90
Alisha Slusarski	1004	(212) 313-1783	904	4/8/2022	Batman	\$10.95	3	\$32.85
Alisha Slusarski	1004	(212) 313-1783	906	4/9/2022	Test Pilot	\$15.00	3	\$45.00
Shawn Johnson	1005	(302) 358-1778	1008	4/10/2022	Mission Impossible	\$24.99	2	\$49.98
Joe Jackson	102	(302) 555-4433	9002	4/15/2022	Jones Inc	\$16.99	3	\$50.97
Joe Jackson	102	(302) 555-4433	9003	4/15/2022	Apollo 13	\$19.99	2	\$39.98
Total								\$350.38