

# Unit 2 Creating Systems to Manage Information Revision

Exam technique Part A: <https://www.youtube.com/watch?v=S-ECxYcwHMc>

Exam technique Part B: <https://www.youtube.com/watch?v=3mJqC0dSj7U>

## Normalisation Tips

There will always be **at least** four tables in the database.

Always look out for field names that contain **ID** or **Ref**. These usually give you an idea of what tables you will need.

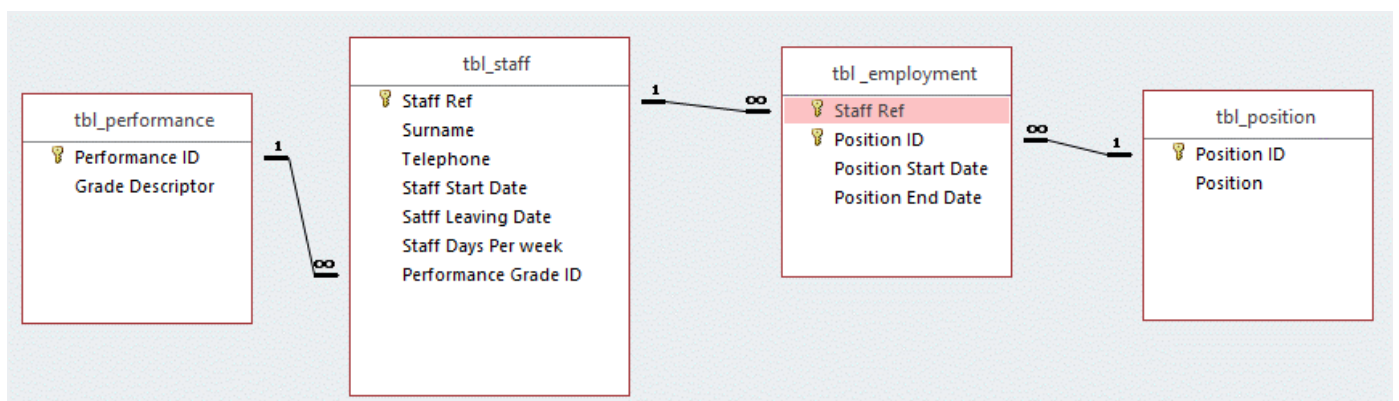
An extract of the data the company would like to record is shown in **Figure 1**.

Staff Ref	Surname	Grade Descriptor	Staff Days Per Week	Performance Grade ID	Staff Start Date	Staff Leaving Date	Position ID	Position Start Date	Position End Date	Telephone	Position
1	Kayode	Excellent	5	1	12/03/2018		3	13/03/2018		07700 900446	Manager
2	Lestrangle	Excellent	3	1	12/03/2018		2	13/03/2018		07700 900468	Vending Machine Operator
3	Peterson		5		12/03/2018	09/04/2019	1	13/03/2018	08/04/2019	07700 999999	Sales Person
4	Ahmad		5		12/03/2018		4	13/03/2018	16/04/2020	07700 900434	Office Assistant
4	Ahmad	Good	5	2	12/03/2018		5	17/04/2020		07700 900434	Office Manager
5	Frost	Excellent	5	1	12/03/2018		2	13/03/2018		07700 913333	Vending Machine Operator
6	Kibbel	Good	4	2	10/04/2019		1	11/04/2019		07700 900587	Sales Person
7	Guy	Excellent	5	1	18/08/2019		2	19/08/2019		07700 900444	Vending Machine Operator
8	Hartell	Average	2	3	16/04/2020		4	17/04/2020		07700 888888	Office Assistant

**Figure 1**

For each table to find, look at all of the data that repeats / matches.

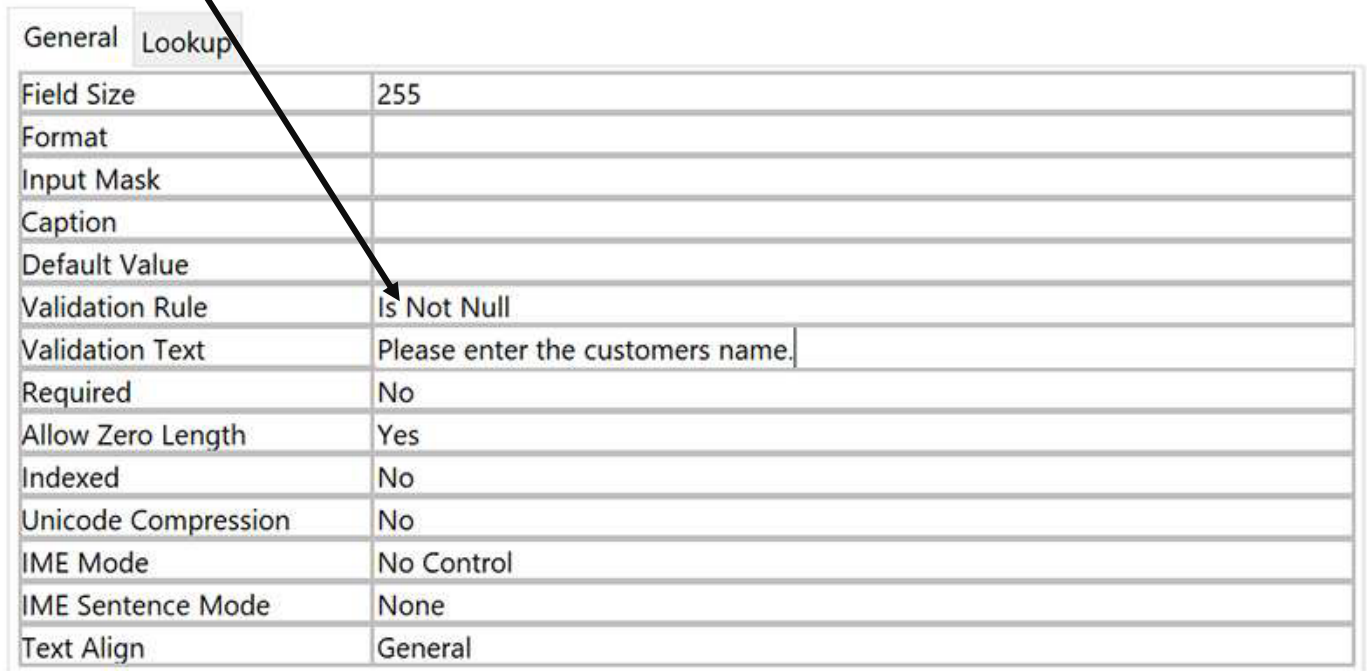
If there is no ID for a table, you will have to use a composite (duel) primary key. The below diagram is the normalisation of the table above.



**\*\*REMEMBER** you will still get marks in other parts of the exam if your normalisation is incorrect. You get marks for getting some of the normalisation correct\*\*

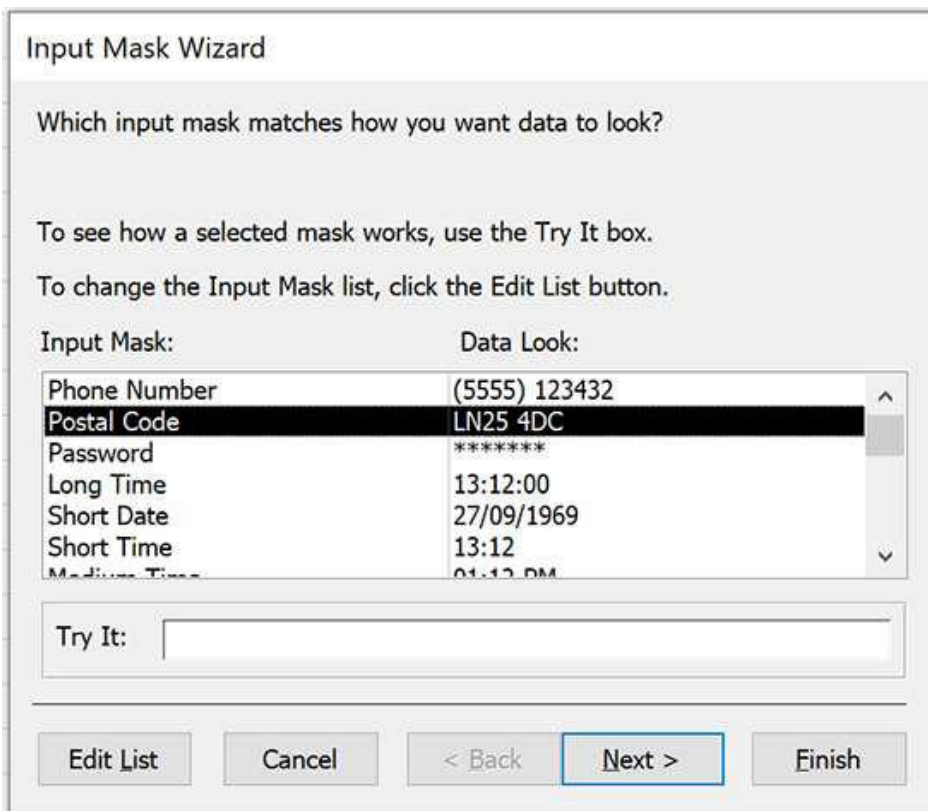
## Validation

### Presence check:



Field Name	Value
Field Size	255
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	Is Not Null
Validation Text	Please enter the customers name.
Required	No
Allow Zero Length	Yes
Indexed	No
Unicode Compression	No
IME Mode	No Control
IME Sentence Mode	None
Text Align	General

### Format Check:



Input Mask Wizard

Which input mask matches how you want data to look?

To see how a selected mask works, use the Try It box.

To change the Input Mask list, click the Edit List button.

Input Mask:	Data Look:
Phone Number	(5555) 123432
<b>Postal Code</b>	<b>LN25 4DC</b>
Password	*****
Long Time	13:12:00
Short Date	27/09/1969
Short Time	13:12
Medium Time	01:12 PM

Try It:

Go to 'input mask' in the properties of the field name. Click the three dots to take you to the wizard.

### Length Check:



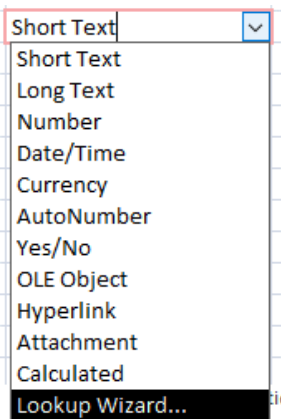
Field Name	Value
Field Size	35
Format	
Input Mask	

## Range Check:

General	Lookup
Field Size	Long Integer
Format	
Decimal Places	Auto
Input Mask	
Caption	
Default Value	
Validation Rule	$\geq 1$ And $\leq 100$
Validation Text	Please enter a number between 1 and 100.
Required	No
Indexed	No
Text Align	General

## Value Lookup:

Select 'lookup wizard'



Select 'I will type in the values I want'

You type in the values for your dropdown list.

Lookup Wizard

This wizard creates a lookup field, which displays a list of values you can choose from. How do you want your lookup field to get its values?

I want the lookup field to get the values from another table or query.

I will type in the values that I want.

Cancel < Back Next > Finish

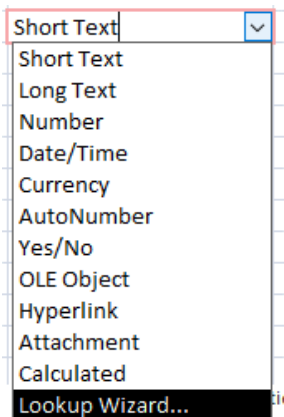
To adjust the width of a column, click the right edge of the column header.

Number of columns:

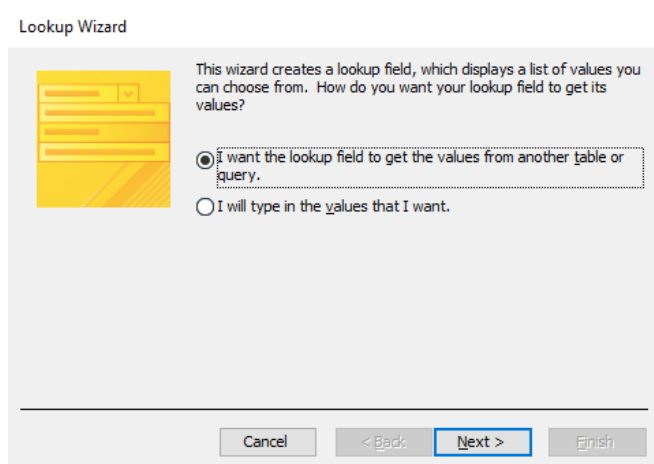
Col1
Excellent
Good
Poor
*

## Table Lookup:

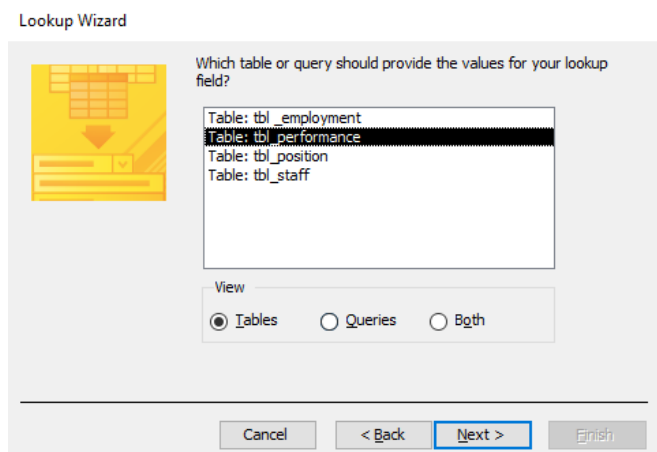
Select 'lookup wizard'



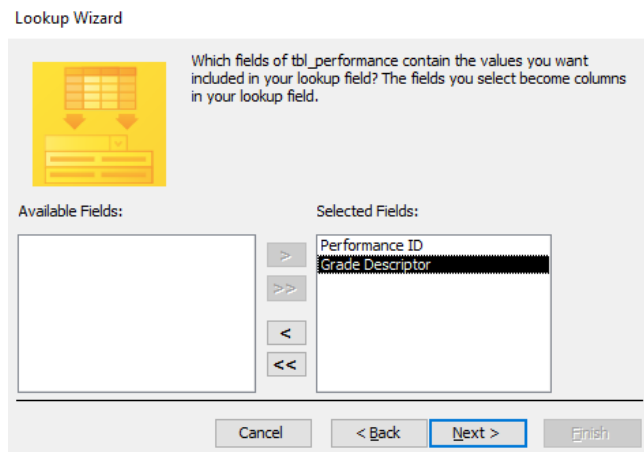
Select 'I want the lookup field to get the values from another table or query.'



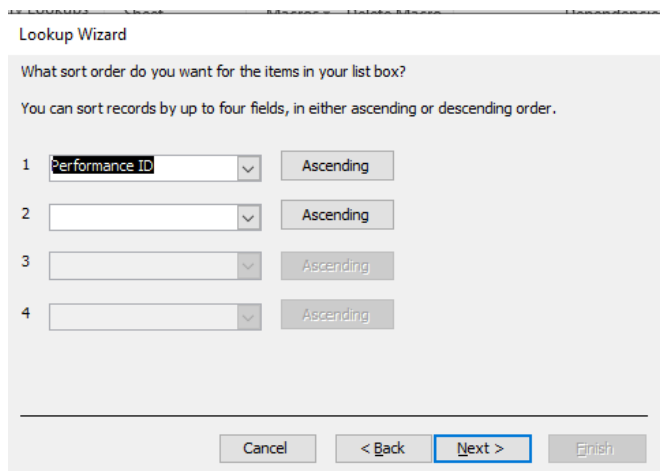
Select the table you want to lookup.



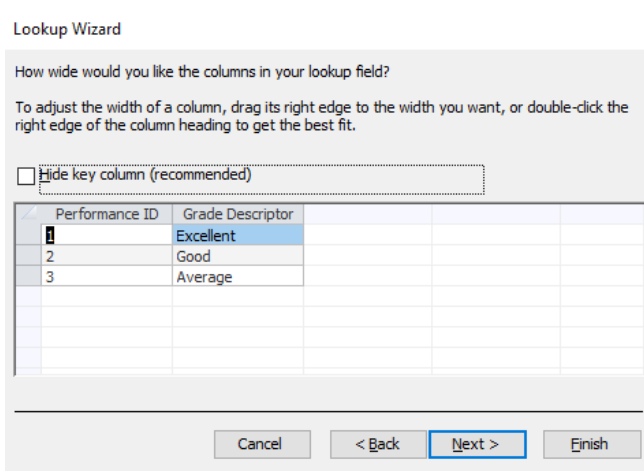
Move across the fields you want to use.



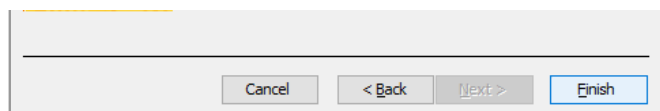
You can sort the data if you want to.



Unhide the key column.



Select 'Finish'.



## Complex validation:

Email addresses	Like "*?@?*.?*"
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## Queries

### Select Query:

Field:	Customer	Date	Item	Item_Price	Qty
Table:	tbl_customers	tbl_orders	tbl_items	tbl_items	tbl_part_order
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		>=#01/09/2018# And <=#30/09/2018#	"Ham" Or "Salad"		
or:					

This searches for customers who have ordered a ham or salad sandwich between 1/9/2018 and 30/9/2018.

Customer	Date	Item	Item_Price	Qty
Fligen Co.	28/09/2018	Ham	£1.20	25
Profix Direct	29/09/2018	Ham	£1.20	8
Profix Direct	29/09/2018	Salad	£0.90	2
Bro. Partners	28/09/2018	Ham	£1.20	6
Banoop	30/10/2018	Salad	£0.90	12
*				

### Parameter Query:

A parameter query allows the user to decide what they want to search for.

Field:	Customer	Date	Item	Item_Price	Qty
Table:	tbl_customers	tbl_orders	tbl_items	tbl_items	tbl_part_order
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	[Which Customer?]				
or:					

When the query is run, the following will pop up for the user:

This will return:

Customer	Date	Item	Item_Price	Qty
Profix Direct	29/09/2018	BLT	£1.40	12
Profix Direct	29/09/2018	Ham	£1.20	8
Profix Direct	29/09/2018	Salad	£0.90	2

### Calculated Query:

Field:	Customer	Date	Item	Item_Price	Qty	Total_Price: [Item_Price]*[Qty]
Table:	tbl_customers	tbl_orders	tbl_items	tbl_items	tbl_part_order	
Sort:						
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"/>
Criteria:						
or:						

This query finds the total cost of orders. You have to create a new field and end the new field name with : for example

**Total\_Price: [Item\_Price]\*[Qty]**

The fields used in the calculation is surrounded by square brackets [ ]

- |   |                |
|---|----------------|
| + | Addition       |
| - | Subtraction    |
| / | Division       |
| * | Multiplication |

The result will show the new field and the result of the calculation:

Customer	Date	Item	Item_Price	Qty	Total_Price
Fligen Co.	28/09/2018	Club	£1.35	25	£33.75
Profix Direct	29/09/2018	BLT	£1.40	12	£16.80
Profix Direct	29/09/2018	Ham	£1.20	8	£9.60
Profix Direct	29/09/2018	Salad	£0.90	2	£1.80
Bro. Partners	28/09/2018	Cheese	£1.00	12	£12.00
Bro. Partners	28/09/2018	Ham	£1.20	6	£7.20
Banoop	30/10/2018	BLT	£1.40	10	£14.00
Banoop	30/10/2018	Cheese	£1.00	4	£4.00
Banoop	30/10/2018	Salad	£0.90	8	£7.20

## Sorting Data in Queries:

Remember you can sort data into order by using the sort and setting it as **ascending** (A-Z, 0-100) or **descending** (Z-A, 100-0)

Field:	EmpNo	LastName	Department	Started
Table:	Employees	Employees	Employees	Employees
Sort:		Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

You can also keep the 'show' box ticked if you want it to show in your results, or untick it if you want to hide it.

## Using the Build tool:

For a calculated query, you can also use the build tool to create your calculation.

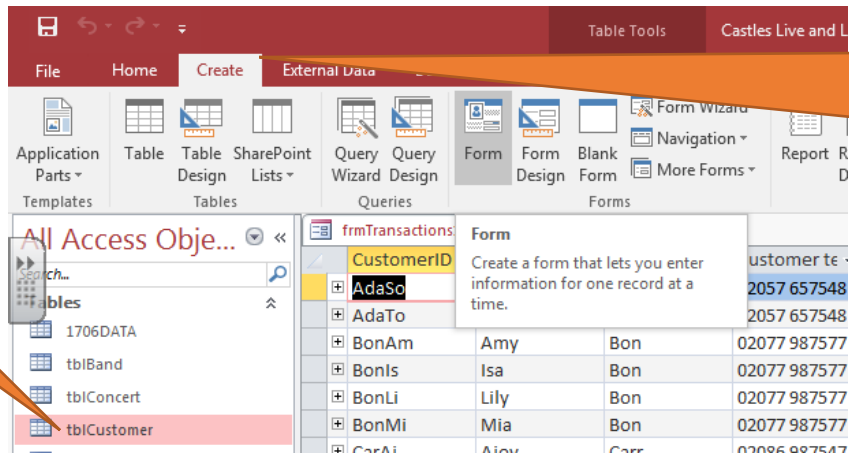
Field:	DistrictName	AverageRubbishColle	WorstRating: Cleanlr	BestRating: Cleanline	RatingDifference:
Table:	tblDistrict	tblYearlyReview	tblYearlyReview	tblYearlyRevi	
Total:	Group By	Avg	Max	Min	
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Criteria:					
or:					

Right click where you will create your calculation, then select **Build**.

Your calculation can then be made in the Expression Builder.

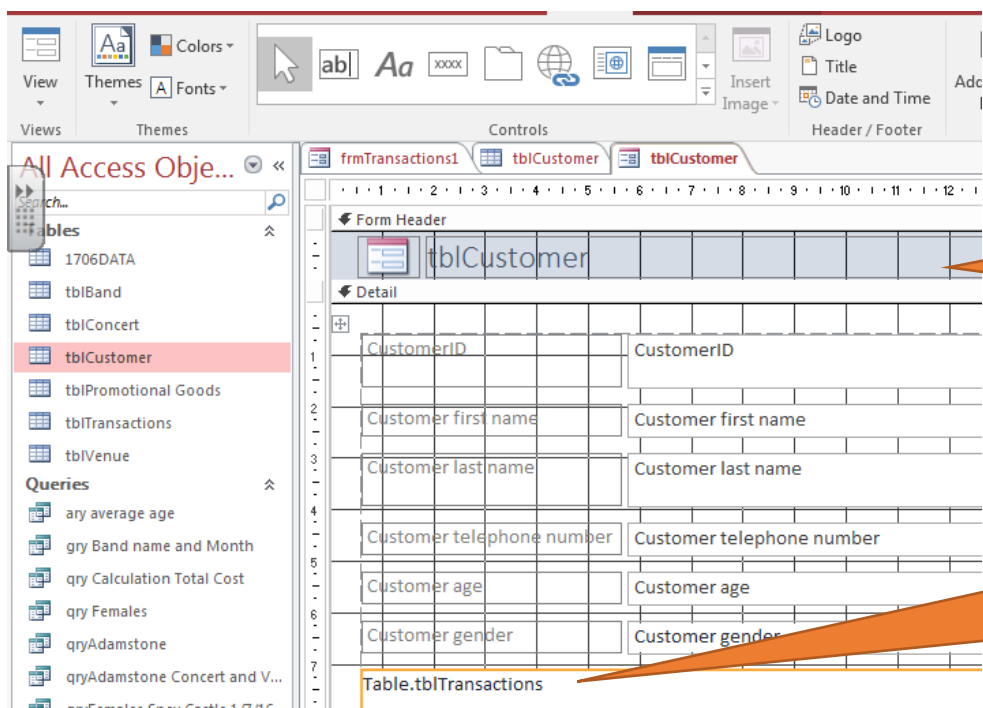
# Forms

## Form Based on a table



Open the table you want to create the form for.

Click CREATE, then FORM.

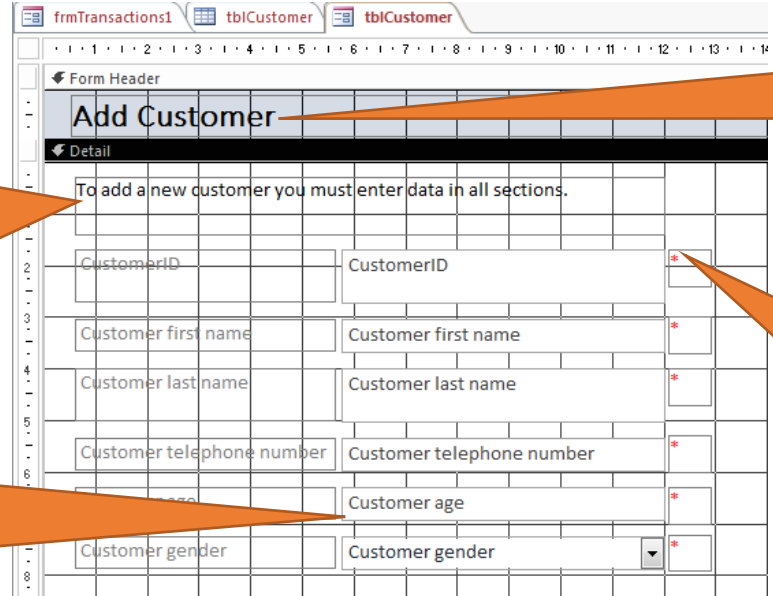


Make sure you are in DESIGN VIEW.

Delete any related tables that automatically appear.

Add a label **Aa** to type in a message for the user on what to fill in.

Make the field sizes smaller so that they are a sensible length.



Change the heading so that it is sensible.

Add labels **Aa** to highlight the fields that need to be filled in.



## Adding fields from other tables:

Create the form for your chosen table.

Select ADD EXISTING FIELDS.

Select SHOW ALL TABLES.

Expand the table names so that you can drag the fields you want to use across to the form.

Drag across

## Adding a calculation

Add a text box to add a calculation to your form.

On the property sheet, set the format to currency.

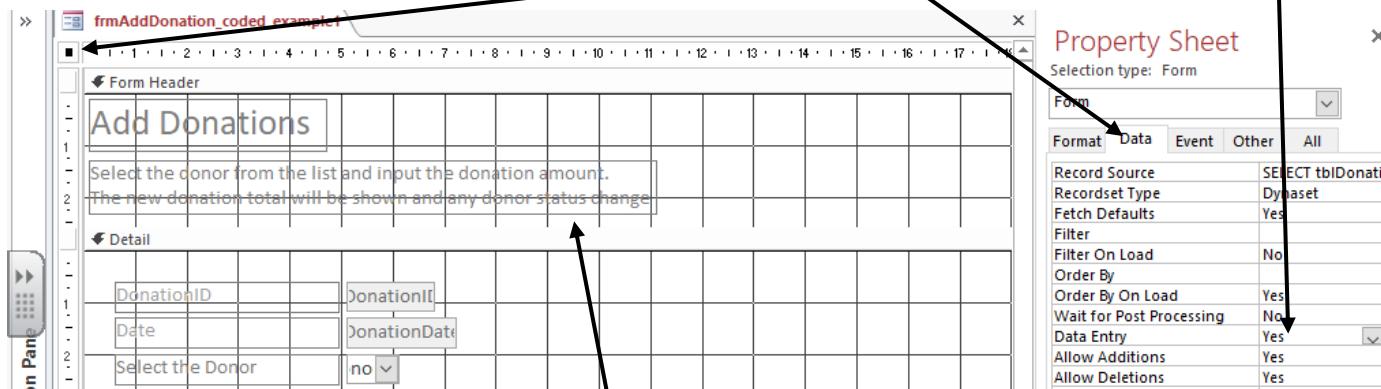
- Type your calculation in here.
- Start with =
- All fields must be typed within square brackets [ ]

+ add - subtract  
\* multiply / divide

## Setting the form to load as a blank record:

Click on the black square to select the entire form.

On the Data tab, select YES for Data Entry.

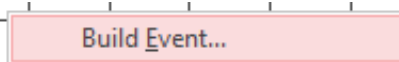


Remember, BTEC love the use of labels to describe to the user how they need to complete the form!

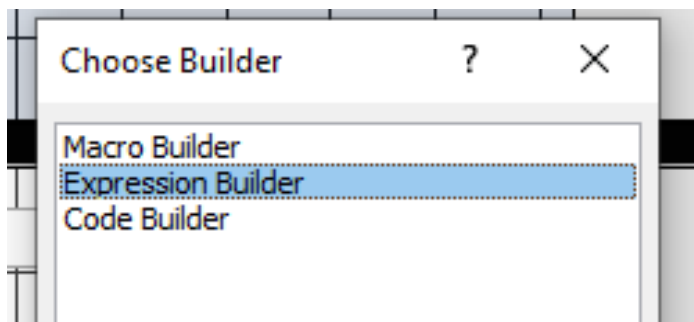
=Date() will provide the current date

## You can also add calculations into a form using the Expression Builder

Right click an area of the form and select



Select the Expression Builder.

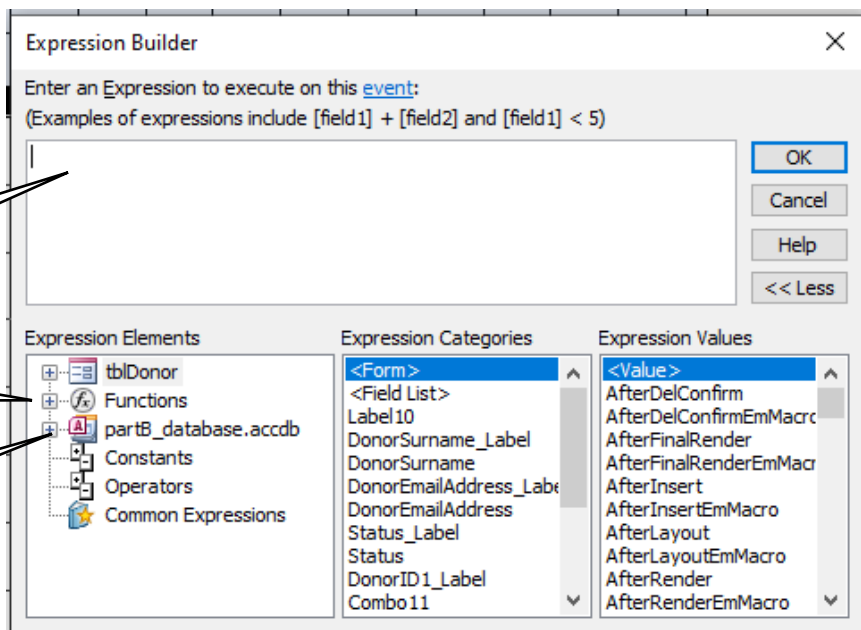


The Expression Builder allows you to create calculations and allows easy access to operators or parts of your database that are saved.

Type your calculation here.

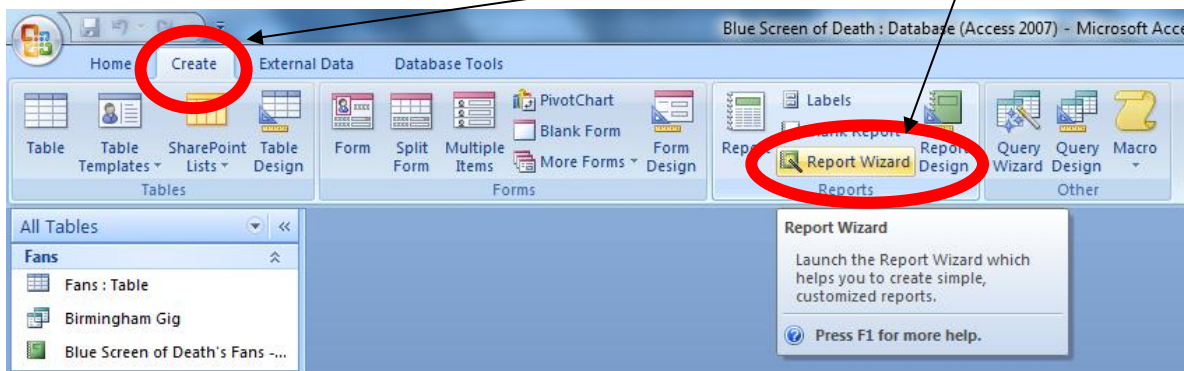
This allows you to add functions (e.g. SUM).

This allows you to access saved parts of your database.

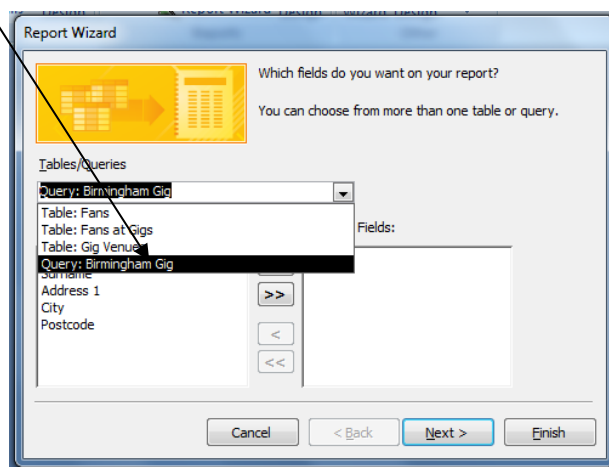


## Reports

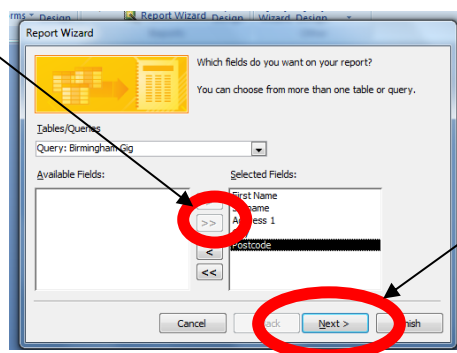
1. To create a report go to the **Create** tab and then go to **Report Wizard**.



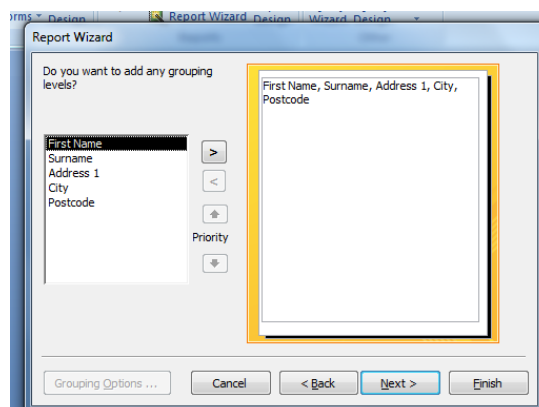
2. Choose the **query** you would like to make a report for in the drop down list.



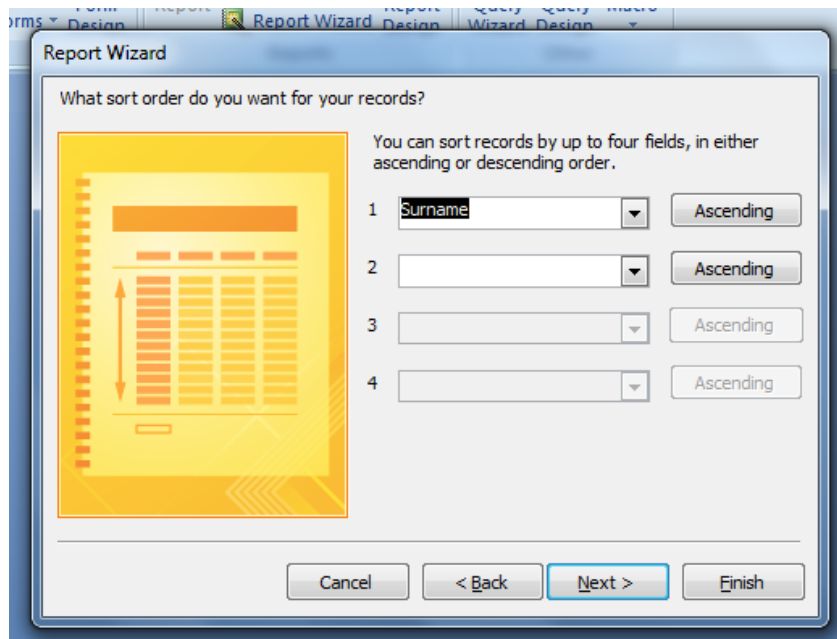
3. Click the **double arrow** to take all the fields across into the report and then click **next**.



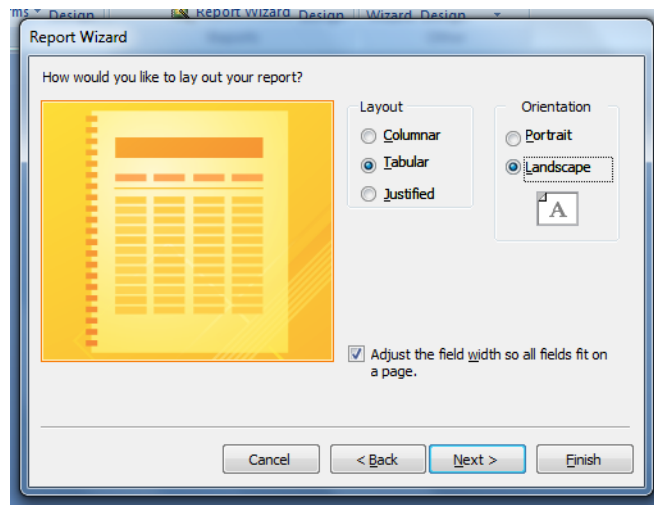
4. If you want any grouping then choose the field you want to put grouping on and then select **Next**. If you don't want any, then just click **Next**.



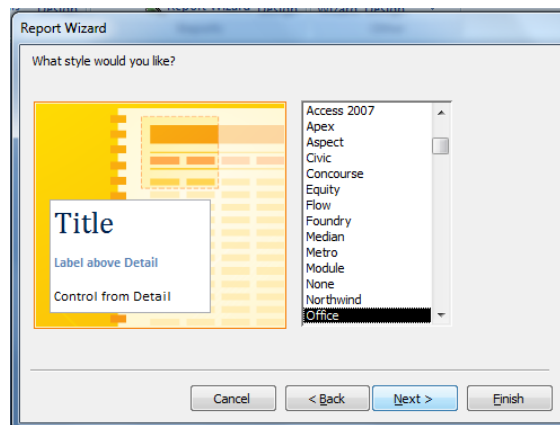
5. If you want any sorting on the report then select the field from the drop down list and press **Next**, If you don't want any, then just click **Next**.



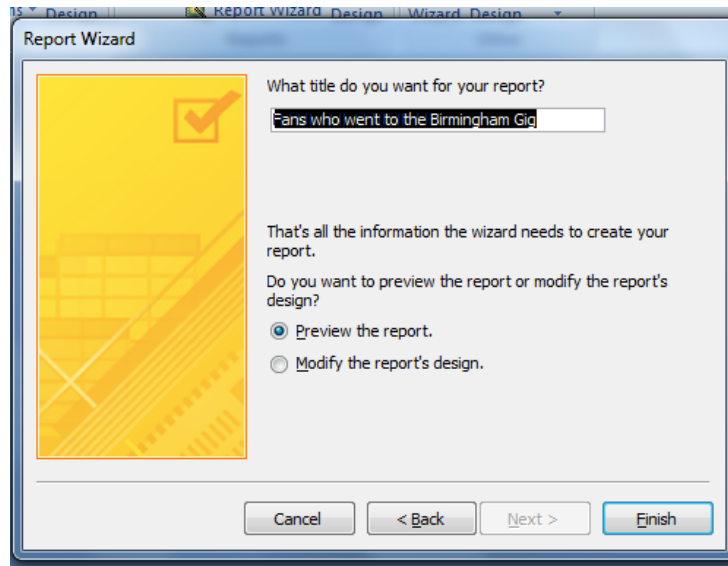
6. Choose how you would like the report laid out. I usually have reports **landscape** and **Tabular**, then click **Next**.



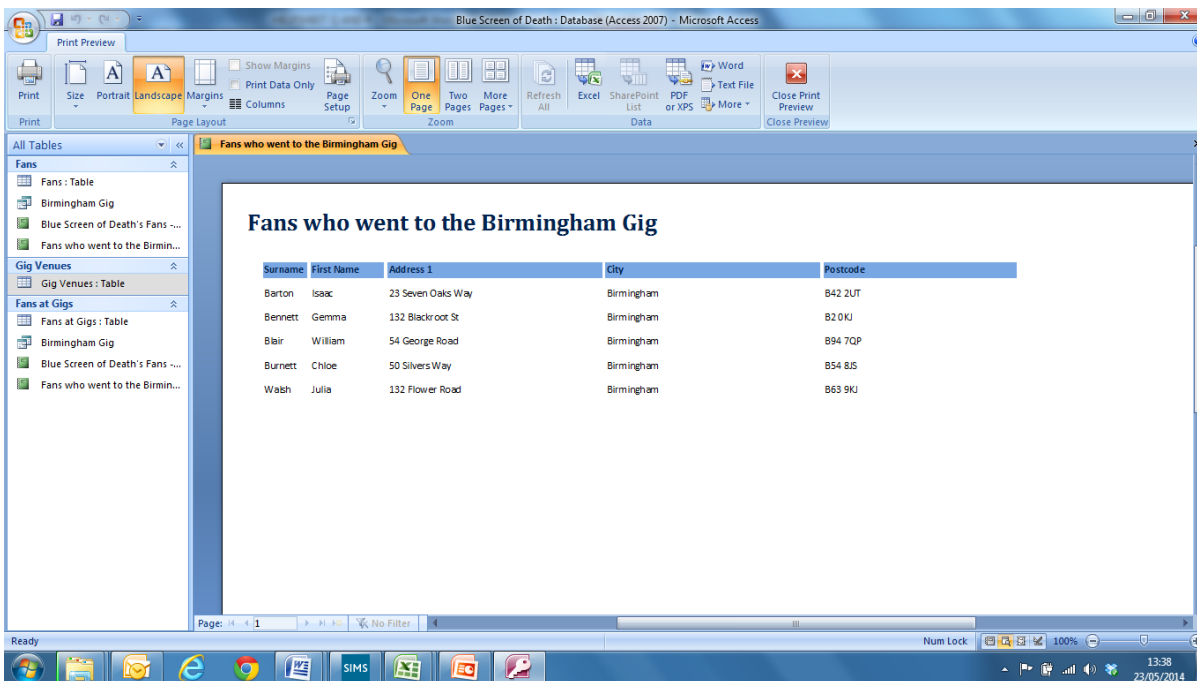
7. Choose a design that you like and click **Next**.



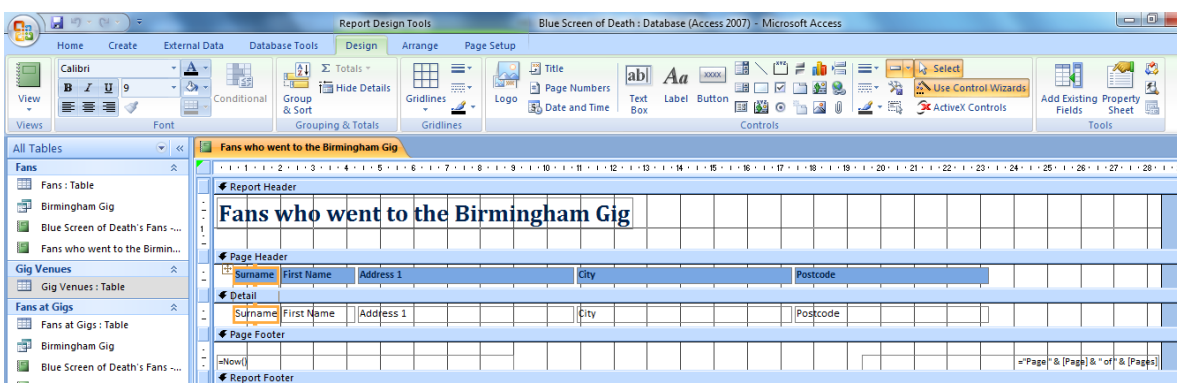
8. Give the report a title that describes what it is showing and click **Finish**.



9. Then it'll give you your report that you can save and print.

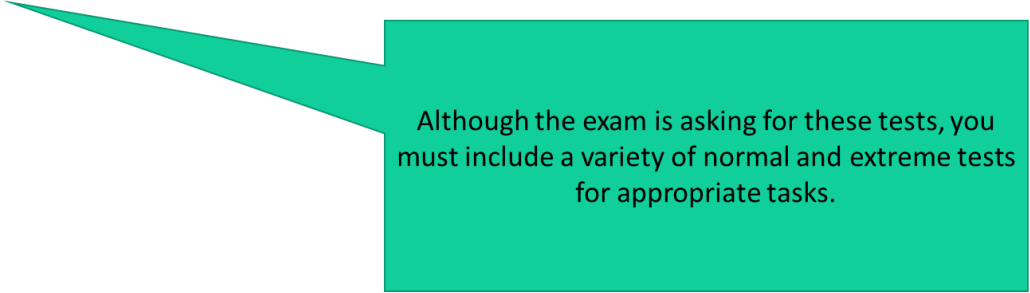


10. To edit the report's colours, fonts or to add images, close the print preview (on the last screenshot) and use the toolbars to help you.



## Testing

NORMAL (N)	Data that should be accepted by the validation rules.
ERRONEOUS (R)	Data that is outside of the rules and should not be accepted.
EXTREME (X)	Data that is accepted by the validation rules but it is at the end of the scale of acceptance (e.g. if the maximum number of tickets you can order is 8, you can put 8 in as your extreme data).



Although the exam is asking for these tests, you must include a variety of normal and extreme tests for appropriate tasks.

## Evaluation Tips

- Take a screenshot of your relationships and explain how your tables are linked. Explain you have avoided data duplication by splitting the data provided to you into tables.
- Make sure you use technical language (e.g. one-to-many relationships, referential integrity, primary / foreign keys etc.)
- Make sure you explain that you have used the correct naming conventions in your tables (e.g. Tbl\_Beach) – why is this helpful?
- Make sure you answer the questions from the exam paper – when talking about the validation methods you have used, explain how they work and include screenshots. Why are these validations the most suitable for the data in your database?