

A database is a collection of data or information stored in a logical format.

Paper Based Database:

- Before computer based databases became available data would be kept on **paper and stored in filing cabinets.**
- A typical example would be a doctors surgery use of a paper based database. Each patient would have their information stored in a folder which would be kept in a filing cabinet.

Disadvantages:

- **Difficult to search and sort information.**
- **Takes up physical storage place.**
- **Difficult to make copies or edit data.**

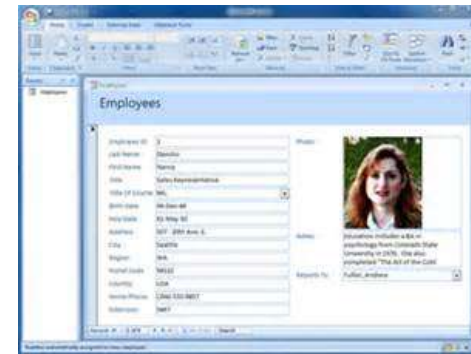


Computer Based Database:

- Allows for **information to be organized** in such a way that a computer program can quickly select specific pieces of data.
- An example of a Database package is Microsoft Access.
- A computer base database is made up of tables, records and fields.

Advantages:

- **Using specific criteria data can be easily found.**
- **Requires no physical storage space and can contain vast amount of data.**
- **Easier to edit and create copies of data.**
- **Reports can be easily generated based on specific records.**



Database Structure - Table

Field Name	Data Type
Customer ID	Number
Customer Name	Text
Address Line 1	Memo
Postcode	Number
Model	Date/Time
Brand	Currency
Date of Purchase	AutoNumber
Price	Yes/No
Sales Person	OLE Object
Extras	Hyperlink
Student Discount	Attachment
Image	Calculated

Fields:
Contain specific data for each record

Data Types

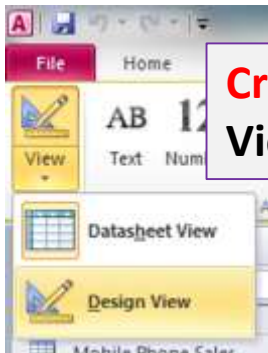
Table:

- A **table** in database will be created to store specific pieces of data (**A number of records**).
- First of all the suitable **field names** will have to be created.
- **Fields** will contain specific data for a record.

Example:

- A **customer sales database** will contain many records.
- Each **customer** in the database will be known as a **record**.
- **Fields** will store specific data for each customer (e.g. Customer Name).

Creating a Table:
View >> Design View



Data Types:

- Will contain **specific types of data** for each field.
- Once the data type has been selected then only that specific type of data can be entered into that field.
- **Example: Data and Time** will only allow for a data to be entered.

TEXT NUMBER (INTEGER) DOUBLE (DECIMAL) CURRENCY
DATE/TIME BOOLEAN OLE OBJECT

Database Structure: Data Types, Fields & Records

Fields: Contain specific data for each record

Code	Movie Name	In Stock	Genre	Date of Release	Type	Price	Sold	Rating	Duration(Min)	Actors
110023	oblivion	Yes	action	05/07/2013	DVD	£15.00	4	PG-13	124	tom cruise morgan freeman andrea riseborough
110024	the hunger games	Yes	action	04/07/2012	blu-ray	£15.25	40	PG-13	142	Jennifer Lawrence josh hutcherson liam hemsworth
110025	the call	No	Crime	05/07/2013	DVD	£15.00	4	R	94	halle berry
110026	Bridge To Terabithia	Yes	Drama	29/06/2007	DVD	£15.00	2	PG-13	96	Josh Hutcherson AnnaSophia Robb
110027	A Walk To Remember	Yes	Drama	24/06/2002	Blue-ray	£15.35	2	PG	101	Mandy Moore Shane West Peter Coyote
110028	Marley & Me	No	Drama	30/06/2008	DVD	£15.00	3	PG-13	115	Owen Wilson Jennifer Aniston Eric Dane

**DATA TYPES
EXAMPLES**

BOOLEAN

DATE/TIME

CURRENCY

**NUMBER
(INTEGER)**

TEXT

Code	Movie Name	In Stock	Genre	Date of Release
110023	oblivion	Yes	action	05/07/2013
110024	the hunger games	Yes	action	04/07/2012
110025	the call	No	Crime	05/07/2013
110026	Bridge To Terabithia	Yes	Drama	29/06/2007
110027	A Walk To Remember	Yes	Drama	24/06/2002
110028	Marley & Me	No	Drama	30/06/2008

Each Movie is a **record** in this table.

6 Records Shown

In a typical database exam question you will be asked to import a CSV file into a suitable database package (Microsoft Access).

30 Using a suitable database package, import the file **N122CARS.CSV**

Assign the following data types to the fields.

<i>VIN</i>	Text
<i>Model</i>	Text
<i>Power</i>	Text
<i>Engine_size</i>	Text
<i>Price</i>	Numeric / Currency
<i>Colour</i>	Text
<i>Discount_applied</i>	Numeric / Integer
<i>Location</i>	Text
<i>Date_sold</i>	Date
<i>Sales_person</i>	Text
<i>Sold</i>	Boolean / Logical

Tip:

Double check the data types. They have to be correct or you may get import errors.

Make sure that you use these field names. The VIN is the Vehicle Identification Number, and **each car will have a different VIN**



Primary Key: This will be the unique field for each record. The VIN will be the primary key as each car will have a unique VIN.

Importing CSV

You are now going to prepare some reports. Make sure all currency values display the £ sign and are to two decimal places.

26. Using a suitable database package, import the file J215VENUES.CSV
Use the following field names and data types:

FIELD NAME	DATA TYPE	FORMAT
Venue Name	Text	
Location	Text	
Telephone	Text	
Best Fish	Text	
Day Permitted	Numeric	Currency
Season Permitted	Numeric	Currency
Access	Numeric	
Depth	Numeric	
Date Opened	Date	dd-mmm-yy
Night Fishing	Boolean/Logical	Display as Yes/No

Tip: Always check the currency and the format of the date.

£ - Pounds

You are now going to prepare some reports. Make sure all currency values display the £ sign and are to two decimal places.

01-Jan-2016

Date_Opened	Date	dd-mmm-yy
-------------	------	-----------

Tip: Always check data types when importing CSV File. If you do not then you run the risk of getting import errors.

NAME	DATA TYPE	FORMAT
ID	Text	
Country	Text	
Number	Number	Integer
Name	Text	
Distance	Number	1 decimal place
Operational	Boolean/Logical	Yes/No
Capacity	Number	Integer
Depth	Number	Integer
Height	Number	1 decimal place
Diameter	Number	Integer

Field Information:

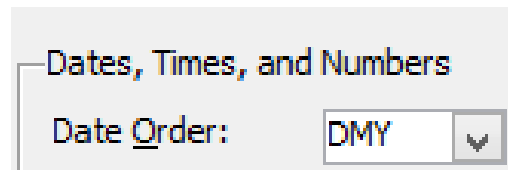
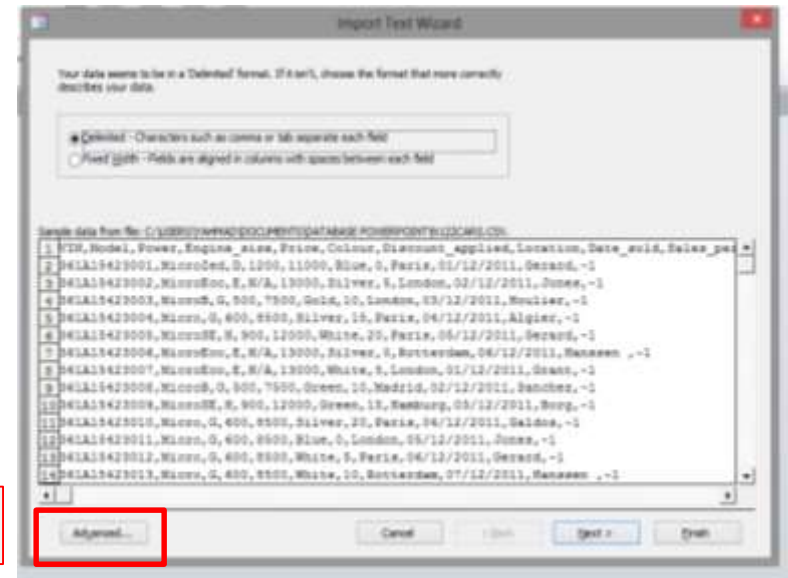
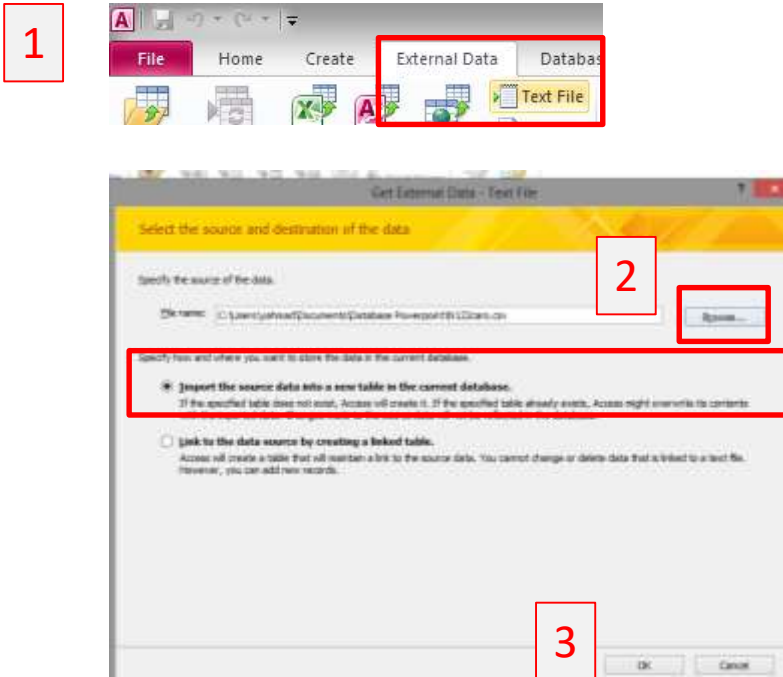
Field Name	Data Type	
ID	Text	Y
Country	Text	N
Number	Long Integer	Y
Name	Text	N
Distance	Double	N
Operational	Yes/No	N

General	Lookup
Field Size	Double
Format	Standard
Decimal Places	1
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Indexed	No
Smart Tags	
Text Align	General

Tip: If it asks for decimal places then during the import leave the data type as double.

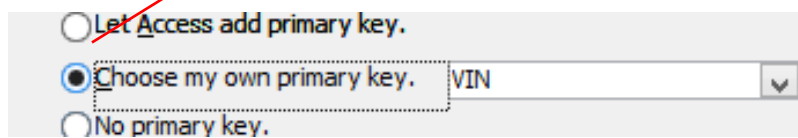
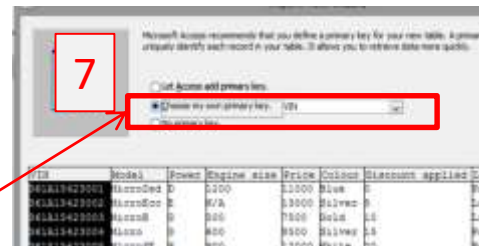
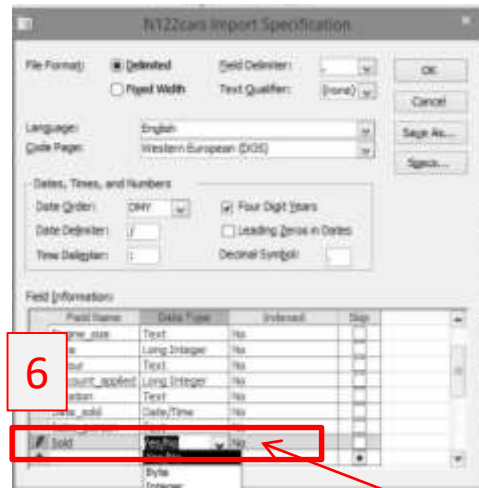
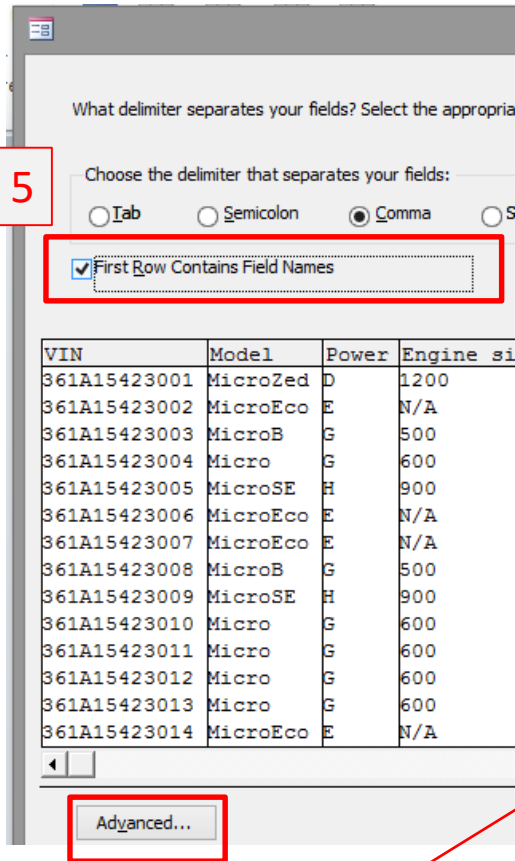
Tip: You can then format the number in design view. If a number is not showing to a certain decimal value then you can set the format to standard.

Importing CSV



- 1) Click on **External Data Tab** and select **Text File**.
- 2) Browse and Select the **CSV File**.
- 3) Click **OK**
- 4) Click on **Advanced** and check the **format of the date** so it is set to **DMY**. Then click **Ok** and **Next**.

Importing CSV

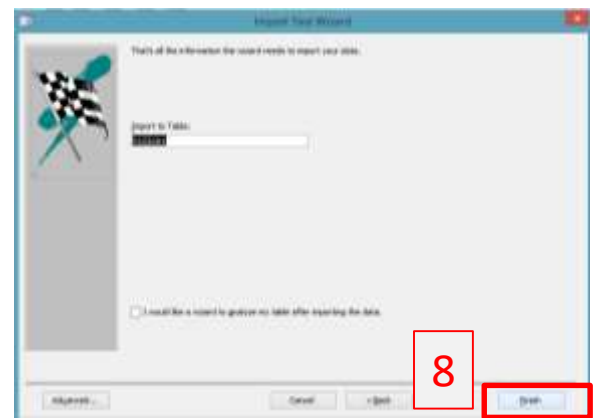


5) Click on **First Row Contains Field Names** and then click on **advanced**.

6) **Double check all the data types**. You would normally always have to change the **Boolean field**.

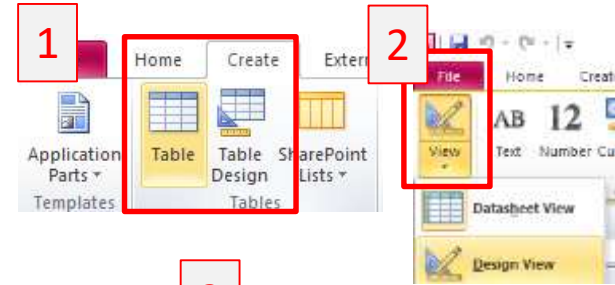
7) Select the **Primary Key** or let **Access choose**. If you have a unique data for each record in a field then select this as your primary key.

8) Click on **Next** then **Finish** to import the **CSV file**.



In this exam question you have to first create the table (Including Fields & Data Types) and then import the CSV file.

You are going to prepare some reports for the company. Make sure all currency values are in pounds sterling (£) to two decimal places.

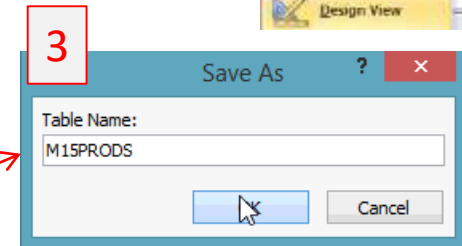


33 Create a database with the following field names and data types:

- Code Numeric/Integer (this field contains unique data)
- Country Text
- Product Text
- Stock Numeric/Integer
- Reorder Numeric/Integer
- Price Numeric/Currency
- Special Boolean/Logical (to be displayed as Yes/No or a checkbox)
- Notes Memo or Text

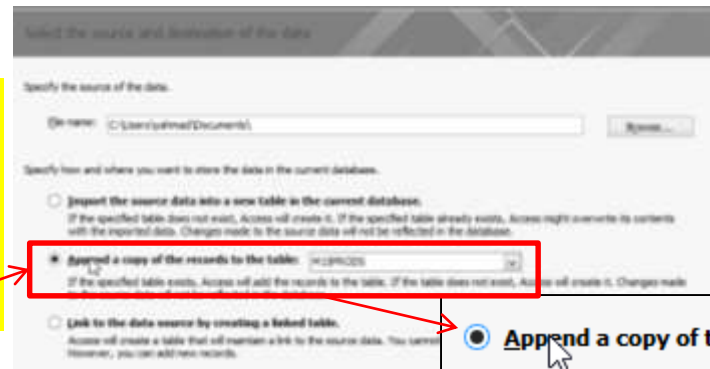
Select an appropriate field and set it as the primary key.

Import the file M15PRODS.CSV to your database.



Field Name	Data Type
Code	Number
Country	Text
Product	Text
Stock	Number
Reorder	Number
Price	Currency
Special	Yes/No
Notes	Text

When importing the CSV file you have to append a copy of the records to the table you created.



Append a copy of the records to the table: M15PRODS

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.

Print Screen Evidence

Place a screenshot showing the field names and data types used into your evidence document.

Tip: When you print screen your data types ensure you also show the formats. Don't crop the bottom part off.

Using a suitable database package, import the file **N122CARS.CSV**

Assign the following data types to the fields.

VIN	Text
Model	Text
Power	Text
Engine_size	Text
Price	Numeric / Currency
Colour	Text
Discount_applied	Numeric / Integer
Location	Text
Date_sold	Date
Sales_person	Text
Sold	Boolean / Logical

Field Name	Data Type
VIN	Text
Model	Text
Power	Text
Engine_size	Text
Price	Currency
Colour	Text
Discount_applied	Number
Location	Text
Date_sold	Date/Time
Sales_person	Text
Sold	Yes/No

Property	Value
Format	Euro
Decimal Places	2

Property	Value
Format	Yes/No

Property	Value
Display Control	Text Box

Formatting

You are now going to prepare some reports for the company. Make sure all currency values display the € sign and are to 0 decimal places.

- 25 • Using a suitable database package, import the file J226YACHTS.CSV
- Use these field names and data types:

Yacht_ID	Text	
Yacht_Name	Text	
Type	Text	
Length	Number	Format to 1 decimal place
Builder_ID	Text	
Price	Numeric/Currency	



Euro



Dollar



Pound

General	Lookup	
Field Size		Long Integer
Format		Euro
Decimal Places		0

General	Lookup	
Field Size		Double
Format		Standard
Decimal Places		1

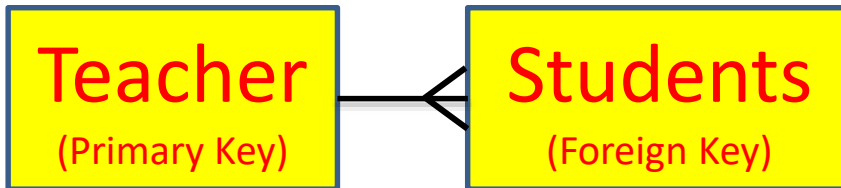
Databases (Access)

Relationship Database

A 'relational' database is one that contains **two or more tables** of data, connected by **key fields**.

Shops		Book Table		Authors	
Field	Data	Field	Data	Field	Data
Shop Code	Text	BookID	Number	Author Code	Text
Shop Name	Text	Book Name	Text	Author Name	Text
Online	Boolean y/n	Author_ID	Text	Nationality	Text
Headquarters	Text	Genre	Text	DOB	Date/Time
Owner	Text	Shop	Text	University	Text
		Current Stock	Number		
		Sale	Boolean y/n		
		Sold	Number		
		Price	Currency		

Key Fields (Primary)
Key Fields (Foreign)



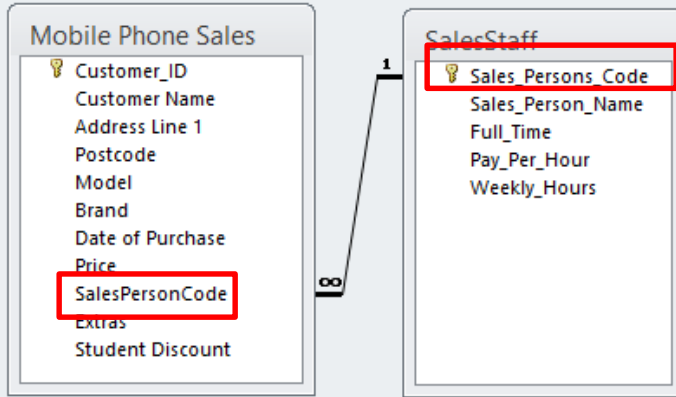
The 'One' side is usually the **primary key**
 The 'Many' side is usually the **foreign key**

A **relational database** has more than **one table** and the tables are linked using **key fields**.

Advantages:

- Teacher details only need to be entered once into the database.
- Mistakes are less likely to happen when entering data if it already exists.
- Avoids duplicating data.
- Data can be accessed using key fields (Primary and Foreign Keys).
- Queries and reports can be created using data (fields) from a number of tables which have a relationship.

Relationship Database



Table/Query: SalesStaff, Related Table/Query: Mobile Phone Sales

Sales_Persons, SalesPersonCode

Enforce Referential Integrity

Cascade Update Related Fields

Cascade Delete Related Records

Relationship Type: One-To-Many

Click the Enforce Referential Integrity. Ensures no orphan records.

Sales_Persons_Code	Sales_Person_Name	Full_Time	Pay_Per_Hour	Weekly_Hours
ALA	Alan Lawson	No	£9.00	15
BJO	Ben Jones	Yes	£12.00	35
HHA	Hattem Hassine	Yes	£13.50	40
YAH	Yasar Ahmad	Yes	£12.00	30

Tip: The same data should appear in both fields

Customer_ID	Customer Name	Address Line 1	Postcode	Model	Brand	Date of Purc	Price	SalesPerson	Extras	Student Disi
1001	Lionel Messi	23 Kings Road	K43 K54	Lumia 525	Nokia	12/12/2013	£175.50	YAH	5 MP camera Wi-Fi GPS	Yes
1002	Cristiano Ronaldo	43 Evergreen Road	E45 EYU	I phone 5	Apple	12/12/2013	£350.00	BJO	LCD display 8 MP camer	No
1003	Xavi	35 Albert Road	A53 P66	I phone 4	Apple	14/12/2013	£250.00	BJO	5 MP camera Wi-Fi GPS	Yes
1004	Andres Iniesta	35 Cresset Road	C32 G84	I phone 5	Apple	15/12/2013	£350.00	ALA	LCD display 8 MP camer	No
1005	Zlatan Ibrahimovic	33 Baker Street	B34 5HG	I phone 4	Apple	15/12/2013	£250.00	ALA	5 MP camera Wi-Fi GPS	No

Relationship Database

Author Code	Author Name	Nationality	DOB	University	email
JD555	James Dashner	American	26/11/1972	Brigham Young University	JD@hotmail.com
JG345	John Green	American	24/08/1977	Kenyon College	JG@hotmail.com
JK100	J. K. Rowling	British	31/07/1965	Exeter University	JK@hotmail.com
JR200	J. R. R. Tolkien	British	07/01/1892	University of Oxford	JR@hotmail.com
RR750	Rick Riordan	American	05/06/1964	University of Texas	RR@hotmail.com
SC450	Suzanne Collins	American	10/08/1962	New York University	SC@hotmail.com
VR700	Veronica Roth	American	19/08/1988	Northwestern University	VR@hotmail.co.uk

BookID	Book Name	Author_ID	Genre	Shop	Current Stock	Sale	Sold	Price
1001	Catching Fire	SC450	Adventure	ama222	5	Yes	45	£4.00
1002	The Fall of Arthur	JR200	Crime	pow554	25	Yes	65	£6.50
1003	Harry Potter And The Go	JK100	Adventure	vin343	3	No	3	£4.00
1004	Insurgent	VR700	Science Fiction	pow554	25	Yes	56	£5.75
1005	The Hunger Games	SC450	Adventure	ama222	17	Yes	34	£4.00
1006	The Heroes of Olympus	RR750	Adventure	pow554	12	No	53	£4.50

Shop Code	Shop Name	Online	Headquarters	Owner
abe123	abebooks	Yes	Victoria British Columbia Canad	Hannes Blum
ama222	Amazon	Yes	Seattle	Jeff Bezos
bam555	Books A Millio	No	Birmingham Alabama United St	Clyde W. Anderson
pow554	Powell's Book	No	Portland Oregon United States	Emily Powell
vin343	Virgin	No	London	Richard Branson

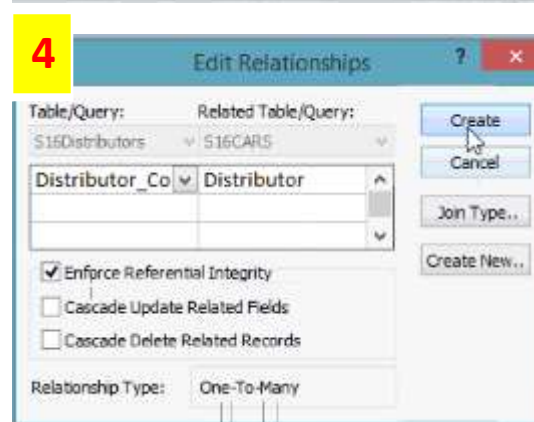
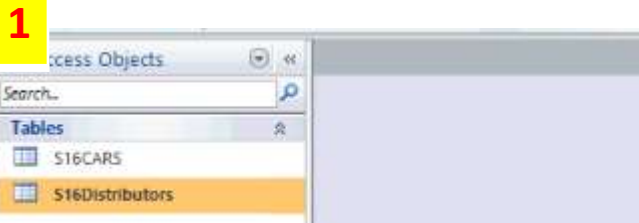
There are more books

Relationship Database

Create a one-to-many relationship as a link between the *Builder ID* field in the *Builders* table and the *Builder_ID* field in the *Yachts* table.

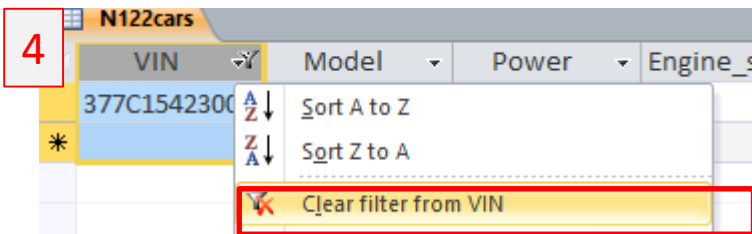
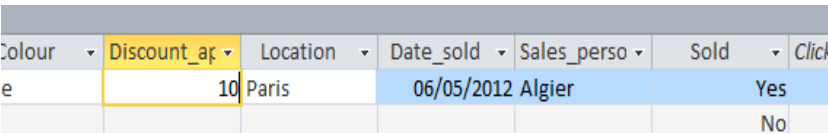
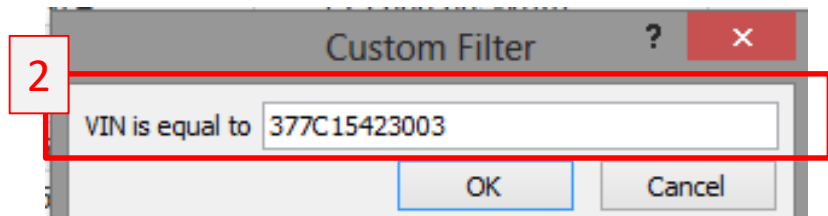
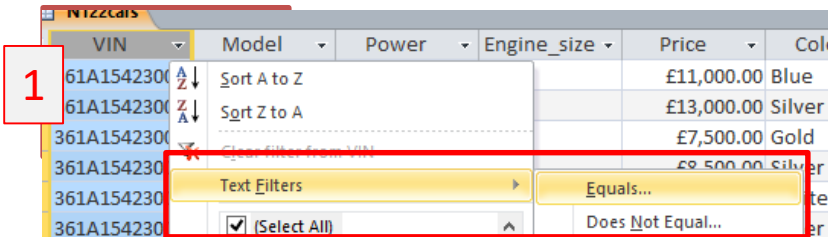
Create a one-to-many relationship as a link between the *Rating* field in the *J216ADSPORTS* table and the *Activity_Rating* field in the *J216RATINGS* table.

Create a one-to-many relationship as a link between the *Distributor code* field in the *Distributor* table and the *Distributor* field in the *Cars* table.



- 1) Close the tables
- 2) Click on Database Tools
 >> Relationships
- 3) Link the Key Fields
- 4) Select **Inforce Referential integrity** and click ok.

Databases (Access)



You will be asked to either add, edit or delete data. In this example you are asked to update **3** records.

The best way to update an existing record is to use the filter tool and search by the **Primary Key** (VIN).

1) Select the **VIN Field** >> **Text Filters** >> **Equals**.

2) Type in the Primary Key (**377C15423003**) and press Ok.

3) Update the record according to the details on the exam paper.

Discount Applied: **10**
 Date Sold: **06/05/2012**
 Sales Person: **Algier**
 Sold: **Yes**

4) Clear the **text filter** and repeat the same process with the next two records.

A Data entry form is used to enter new records into a database table. The form is a more user friendly way to enter new records.

On-screen forms should:

- Appropriate spacing for each field.
- Screen filled/not too much white space.
- Clearly defined input area for each field.
- An easy to read font/font size.
- A sensible font colour/background colour.
- Drop down lists and tick boxes.
- No overlapping of items.
- Navigation aids

Tick boxes/radio buttons to enter choices

Drop down lists to choose an option

Buttons:

- Go forward or backwards
- Add, Save and delete records

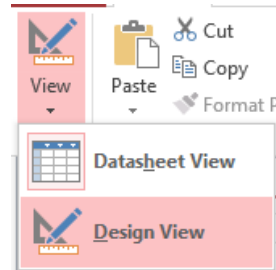
Create a data entry form which will:

- include all fields from the *Adsports* table

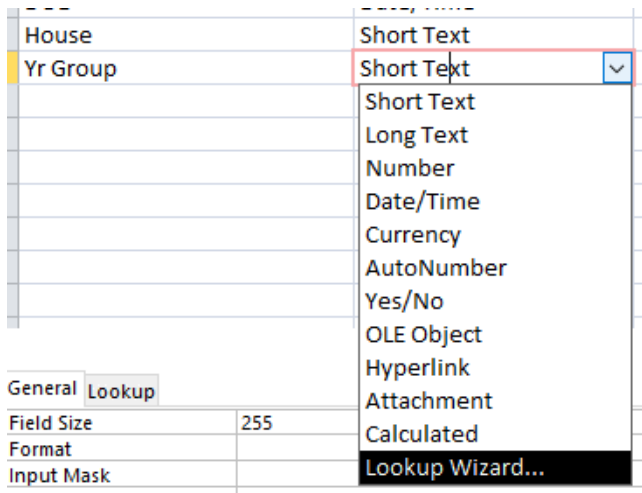
Create Drop Down Menu

- use a drop down menu in the *Location* field to accept only:

Cornwall
Ireland
Scotland
Wales
France



1. Go to **Design View**



2. Select **Lookup Wizard** for the field you would like to add the drop down to.

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.

3. Select **I will type in the values that I want.**

Lookup Wizard

What values do you want to see in your lookup field? Enter the number of columns you want in the list, and then type the values you want in each cell.

To adjust the width of a column, drag its right edge to the width you want, or double-click the right edge of the column heading to get the best fit.

Number of columns:

Col1
7
8
9
10
11
*

4. Type in the **values** for the drop down list.

What label would you like for your lookup field?

Yr Group

Do you want to limit entries to the choices?

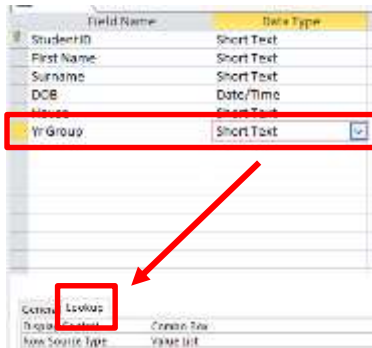
Limit To List

5. Select **Limit to List**

Drop Down Menu Evidence

Evidence 1:
Limit to List Box Ticked

Evidence 2:
Print screen of LOOKUP



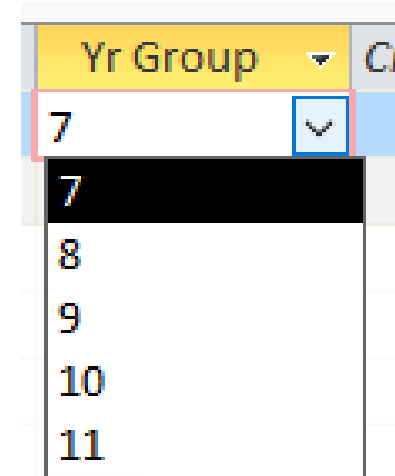
What label would you like for your lookup field?

Yr Group

Do you want to limit entries to the choices?

Limit To List

General		Lookup	
Display Control		Combo Box	
Row Source Type		Value List	
Row Source		7;8;9;10;11	
Bound Column		1	
Column Count		1	
Column Heads		No	
Column Widths		2.54cm	
List Rows		16	
List Width		2.54cm	
Limit To List		Yes	
Allow Multiple Values		No	

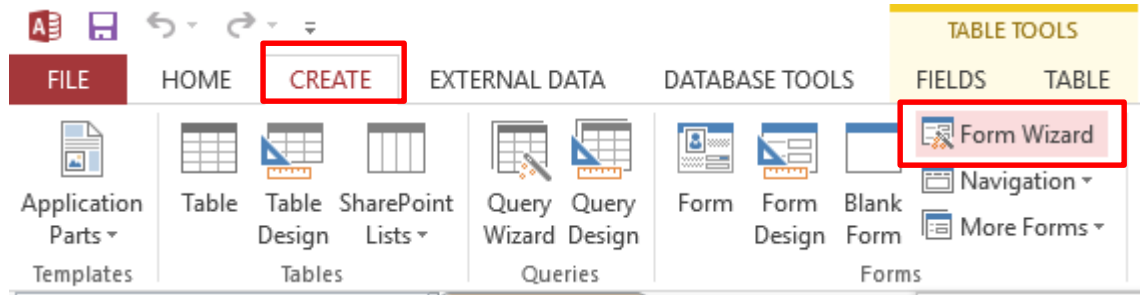


Evidence 3:
Dropdown Menu

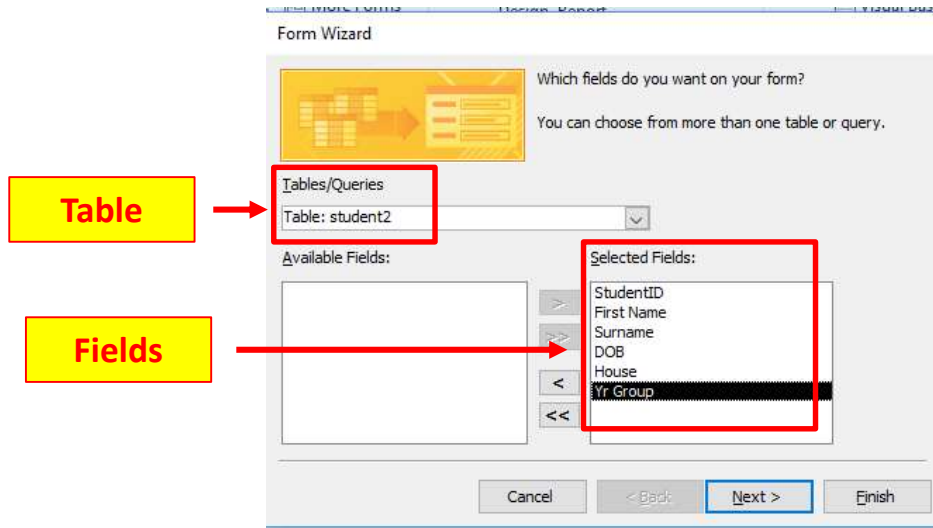
Evidence of Validation

Create Data Entry Form

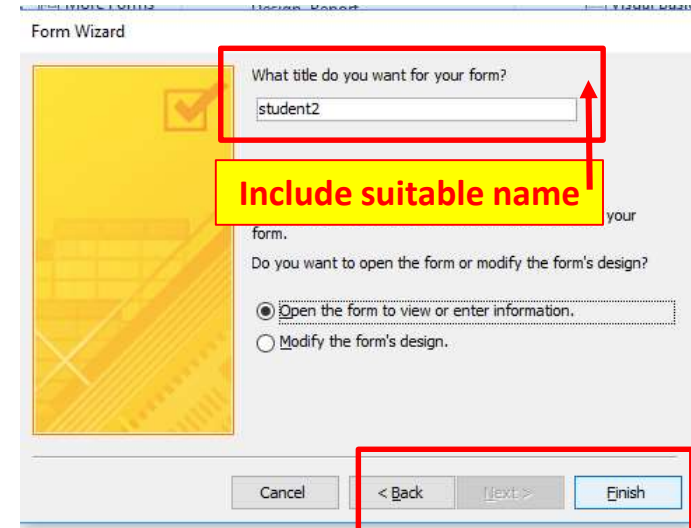
1. Go to **Create >> Form Wizard**



2. Select the **correct table** and then **all fields**.



3. Click on **Next >> Finish**

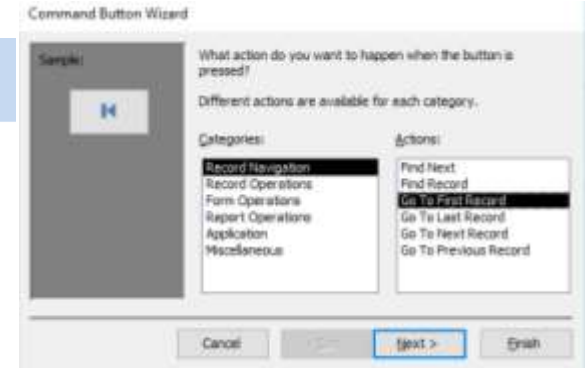


Create Data Entry Form

Navigation Options

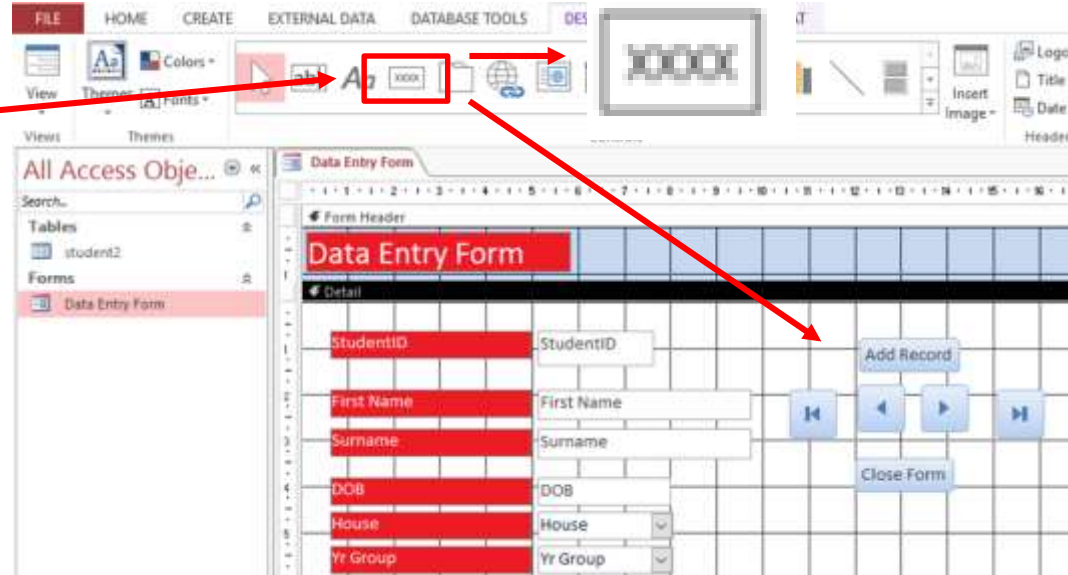
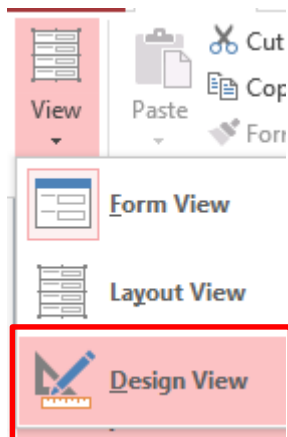
student2

StudentID	112
First Name	Michael
Surname	Jones
DOB	24/07/2009
House	Currie
Yr Group	7



In design view you can format the appearance of the Form.

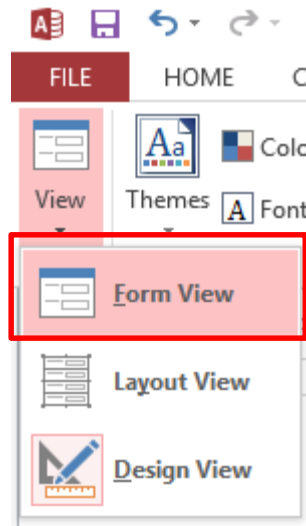
You can also add navigation aids (buttons)



When you are in **Form View** you can **add** or **navigate** through the **existing records** using the buttons. In the exam you could be instructed to add a new record using the form.

Add the following record to the *Adsports* table using your form:

Course_Code	Activity	Type	Rating	Location	Residential	Course_Cost	Duration
CO029	Zap Cat	Water	4	Cornwall	Yes	471	6



A screenshot of a Microsoft Access Data Entry Form for a table named 'student2'. The form has a title bar 'Data Entry Form' and a header 'Data Entry Form'. The form contains several fields with red labels: 'StudentID' (value: 112), 'First Name' (value: Michael), 'Surname' (value: Jones), 'DOB' (value: 24/07/2009), 'House' (value: Currie), and 'Yr Group' (value: 7). To the right of the form are navigation buttons: 'Add Record', 'Close Form', and four arrow buttons (back, previous, next, forward).

Evidence:
You could be asked to print screen the form showing the new record has been added.

Tip: When you are creating a report ensure you have identified all query and reports tasks.

1. Query
2. Report
<ul style="list-style-type: none"> Contains a new field called Turbine_Capacity which is calculated at run-time. This field will calculate the Capacity divided by the Number of turbines Has the Turbine_Capacity field displayed to 1 decimal place Shows only the records where the Sea is North Sea or Irish Sea and Operational is Yes Shows only the fields Country, ID, Name, Number, Distance, Operational, Capacity, Height, Sea and Turbine_Capacity in this order with their labels in full Sorts the data into ascending order of Country and then ascending order of Name Fits on a single page wide Has a page orientation of landscape Calculates the total Number of turbines and places it at the bottom of the report Has a label to the left of this number Total turbines in operation Includes the heading Power from North and Irish Seas at the top of the page Has your name, Centre number and candidate number on the right in the footer.

Search Criteria: When creating the query only select the **fields stated**.

However you may have to **insert additional fields** later to complete your search. These fields must not be shown.

Report Title: Name the query as the report title.

Query	Report
<ul style="list-style-type: none"> Selecting Fields Search criteria Calculated run-time field + formatting 	<ul style="list-style-type: none"> Sort Page orientation Report header/footer Calculation (Count, Sum, Max & Min) Labels for formulas Show labels in full

Annotating Exam Paper

36 Produce a report from all the data which:

$Course_Cost: [Daily_Cost] * [Duration] + [Insurance]$

- Query**
 - contains a new field called **Course_Cost** which is calculated at run-time. This field will calculate the **Daily_Cost** multiplied by **Duration** plus the **Insurance**
- Query**
 - has the **Course_Cost** field displayed as currency
- Query**
 - shows only the records where the **Level is Extreme, Residential is Yes, Duration is 10 days or less** and **excludes those activities located in Ireland**
- Query**
 - shows only the fields **Course_Code, Activity, Type, Location, Level, Daily_Cost, Duration** and **Course_Cost** in this order with all data and labels displayed in full
- Report**
 - sorts the data into **ascending order of Location** and then into **descending order of Daily_Cost**
- Report**
 - fits on a single page wide
- Report**
 - has a page orientation of **landscape**
- Report**
 - calculates the **average Daily_Cost**, positioned below the **Daily_Cost** column and formatted as **currency**
- Report**
 - has a label to the left of this number **Average cost per day**
- Query**
 - includes the heading **Extreme Outdoor Activities** at the top of the page
- Report**
 - has your name, Centre number and candidate number on the **right at the top of the report**.

1) Level - Extreme, 2) Residential - Yes, 3) Duration - <=10, 4) Location - not "Ireland"

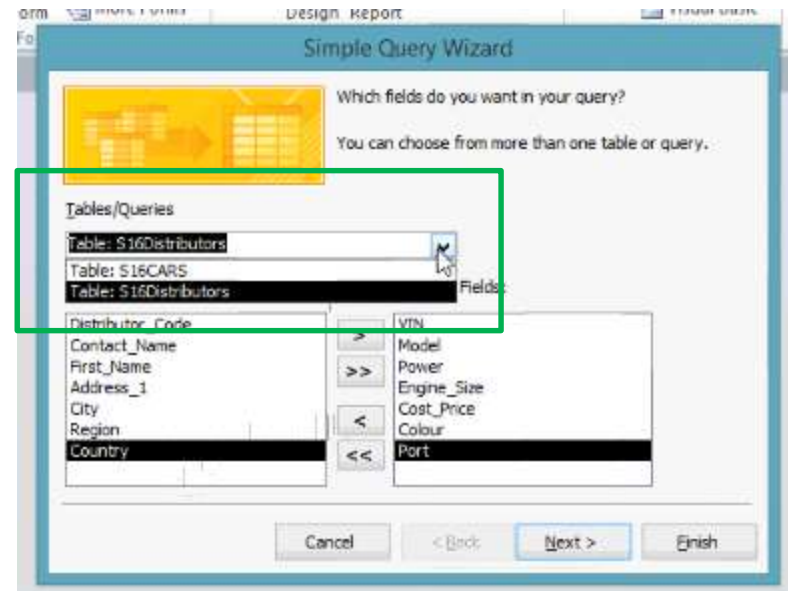
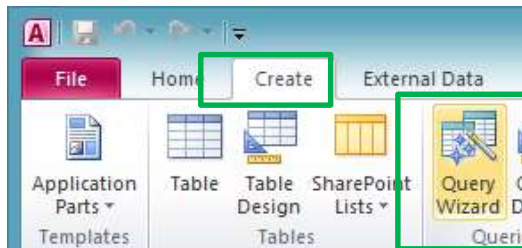
- 1) Write the Run Time Formula
- 2) Identify the search criteria
- 3) Identify Keywords

Query Task 1: Select Fields

shows only the fields *Course_Code*, *Location*, *Activity*, *Level*, *Duration*, *Residential* and *Daily_Cost* in this order with data and labels displayed in full

shows only the fields *Yacht_Name*, *Builder_Name*, *Type*, *Length*, *Price*, *Build_Year*, *Build_Country* and *Total_Berths* in this order with data and labels displayed in full

shows only the fields *VIN*, *Model*, *Power*, *Engine_Size*, *Cost_Price*, *Colour*, *Port*, *Distributor* and *Delivered_Price* with their labels and data fully visible



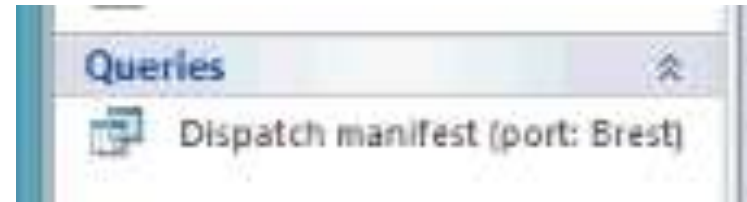
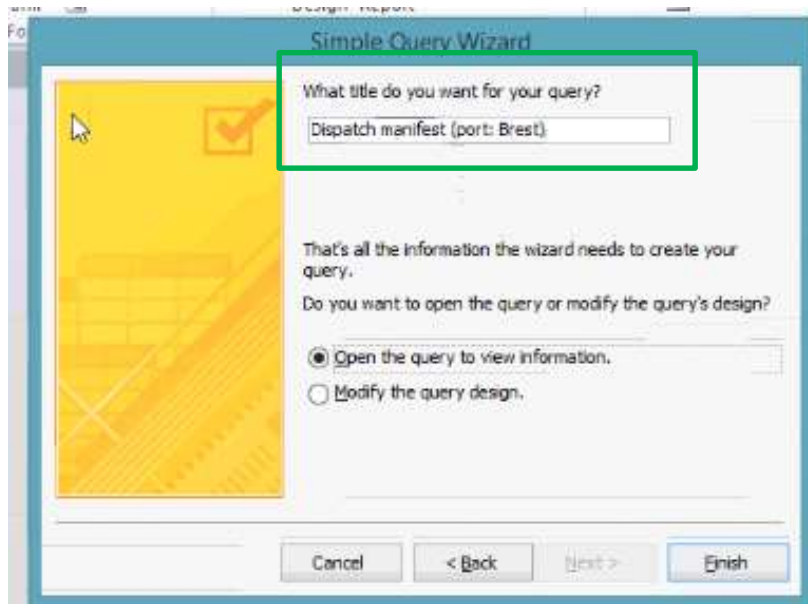
1. Create >> Query Wizard
2. Select Fields
 1. You may select fields from different tables in a relationship database.

Query Task 2: Name your Query as the Report Title.

includes the report title **Residential Water Activities** at the top of the page

includes the heading **Yachts less than 6 years old** at the top of the page

includes the heading **Dispatch manifest (port: Brest)** at the top of the page



Flat File Database: Query name will automatically appear at the top of the report.

Relationship Database: Report title will have to be re-entered in report wizard.

Query Task: Search Criteria

shows only the records where **Build_Year** was after 2010 and **Length** is 40 or less

Build_Year: >31/12/2010 or >=01/01/2011

Length: <=40

shows only the records where the **Type** is Water, **Residential** is Yes **Duration** is 12 days or less and excludes those activities located in **Scotland**

Type: Water, **Residential:** Yes

Duration: <=12

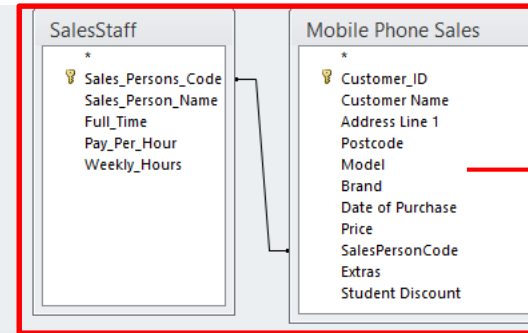
Location: Not "Scotland"

shows only the records where the **Country** is France and the cars have not been dispatched

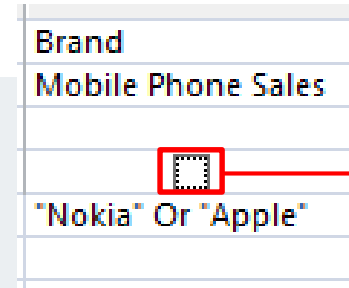
Field:	Power	Engine_Size	Cost_Price	Colour	Port	Distributor	Country	Dispatched
Table:	S16CARS	S16CARS	S16CARS	S16CARS	S16Distributors	S16CARS	S16Distributors	S16CARS
Sort:								
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:							"France"	No

"France"	No
----------	----

Query – Search Criteria

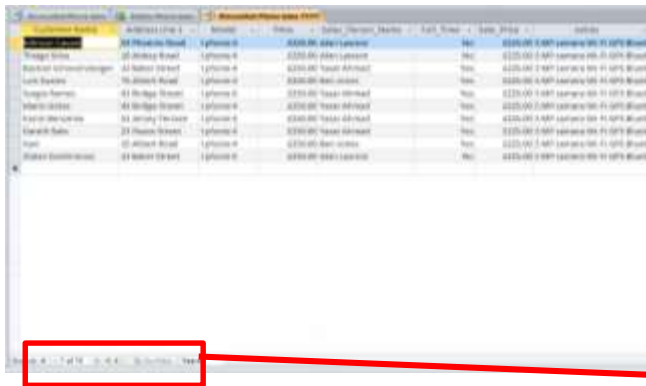


Tip: Extend the tables just in case you may need to select and use another field.

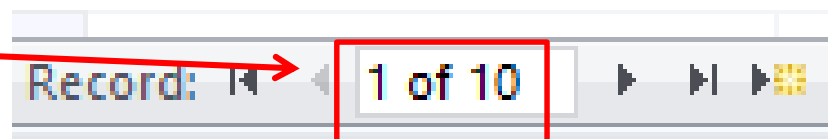


Tip: You can search by a field and then hide it. Before hiding it check to see if the search criteria has worked.

Field:	Customer Name	Address Line 1	Model	Brand	Price	Sales_Person_Name	Full_Time	Sale_Price: [Price]*0.9	extras
Table:	Mobile Phone Sales	Mobile Phone Sales	Mobile Phone Sales	Mobile Phone Sales	Mobile Phone Sales	SalesStaff	SalesStaff		Mobile Phone Sales
Sort:									
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			<> "Lumia 525"	"Nokia" Or "Apple"					Like "5 mp*"
or:									



Tip: Always check the number of records after you have typed in one search criteria. The number of records should reduce every time you type in a search criteria.



Query – Search Criteria

Wild Card – Sometimes a field may contain more than one word. To find something specific you need to write a wildcard search.

Like “*Channing Tatum *”

[Actors]	
Movies	
	<input checked="" type="checkbox"/>
Like "*Channing Tatum*"	

Actors		
14	Allison Miller	Zach Gilford Sam Anderson
13	halle berry	
13	Patrick Wilson	Vera Farmiga Ron Livingston
13	Alden Ehrenreich	
13	Miles Teller	Shailene Woodley Kyle Chandler
13	kristen bell	
13	Dylan O'Brien	
13	Owen Wilson	
13	james franco	
13	brad pitt	mireille enos daniella kertes
13	jesse Eisenberg	
13	max irons	
13	Leonardo DiCaprio	
13	Iulianne Hough	Iosh Duhamel Cobie Smulders

Between Between 01/01/2010 And 02/02/2012
Between 100 And 150

Or North Sea Or Irish Sea

Not Not "Horror"

<90 Less than <90

>90 More than >90

>=90 More than and equal to >=90

37* _____ Fields **starts** with **37**

_____ *37 Fields **Ends** with **37**

Data%20Manipulation/movie%20Task/video%20t...

Actors		
013	Dwayne Johnson	Channing Tatum Adrienne Palicki
013	channing tatum	
012	Rachel McAdams	Channing Tatum Sam Neill
012	channing tatum	Jonah hill eric morson
010	Channing Tatum	Amanda Seyfried Richard Jenkins
008	Robert Hoffman	Briana Evigan Channing Tatum
006	Channing Tatum	Jenna Dewan-Tatum

Only field containing Channing Tatum are shown

Calculated Run Time Formulas in the Query

Calculated Run time is used when we have to calculate specific values using data from existing fields.

Enter New Calculated Run Time Field here

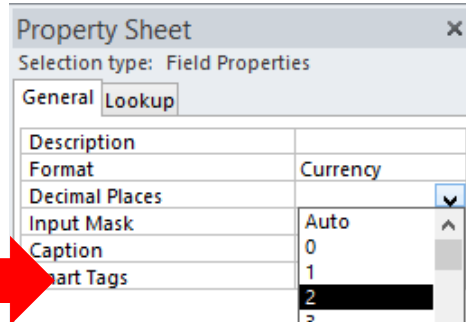
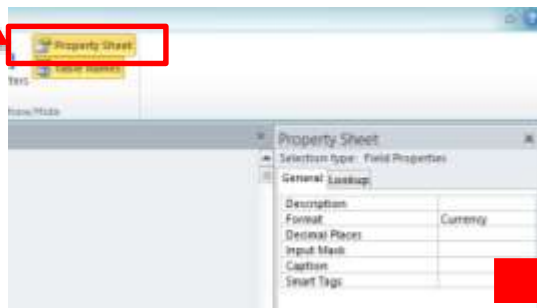
Field:	Book Name	Genre	Shop Name	Current Stock	Sale	Price	Author Name	New Stock Level: [Current Stock]+5
Table:	BookTable	BookTable	Shops	BookTable	BookTable	BookTable	Authors	
Sort:								
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			*amazon*		No			
or:								

New Stock Level:[Current Stock]+5

Number of Books Added to Stock

Name of new field

Required Field in Square Brackets



In Design View using the Property Sheet the formatting can be set for the new field.

Calculated Run Time Formulas in the Query

contains a new field called **Total_Berths** which is calculated at run-time. This field will calculate the total number of berths by adding **Sleeps** plus **Crew**

Total_Berths:[Sleeps]+[Crew]

contains a new field called **Daily_Cost** which is calculated at run-time and displayed as currency. This field will calculate the **Course_Cost** divided by **Duration**

Daily_Cost:[Course_Cost]/[Duration]

contains a new field called **Delivered_Price** which is calculated at run-time. This field will calculate the **Cost_Price** of the car plus a standard delivery charge of **200** Euros

Delivered_Price:[Cost_Price]+200

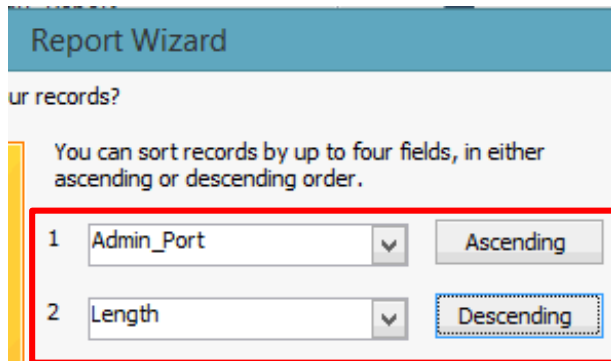
Field:	Distributor	Country	Dispatched	Delivered_Price:[Cost_Price]+200
--------	-------------	---------	------------	----------------------------------

Report – Sort & Page Orientation

sorts the data into ascending order of *Type* and then descending order of *Length*

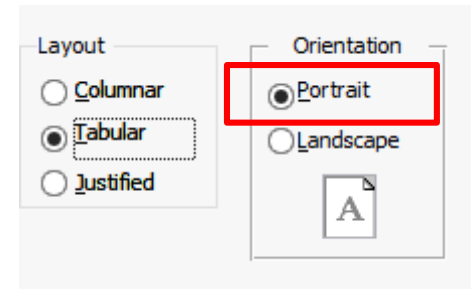
sorts the data into ascending order of *Activity* within ascending order of *Location*

sorts the data into ascending order of *Admin_Port* and then descending order of *Length*



Admin_Port	Length
AYR	38.6
HASTINGS	25.3
HASTINGS	18.2
HASTINGS	17.0
HASTINGS	14.0
HASTINGS	13.9
LOWESTOFT	11.7
MILFORD HAVEN	11.9
PLYMOUTH	14.9
PLYMOUTH	13.7
PLYMOUTH	11.4

has a page orientation of portrait



Remember to put the fields in to the correct order after the SORT.

Report Wizard:

- If there are **two sorts** in the report then you would do it in **the report wizard**.
- You can also set the **page orientation** in the **report wizard**.

Report – Show Labels and fit to a single page wide

What title do you want for your report?

Discount Phone Sales

What title do you want for your report?

Discount Phone Sales

Make sure all the information the report needs to create your report is included.

Do you want to preview the report? Preview the report. Modify the report design.

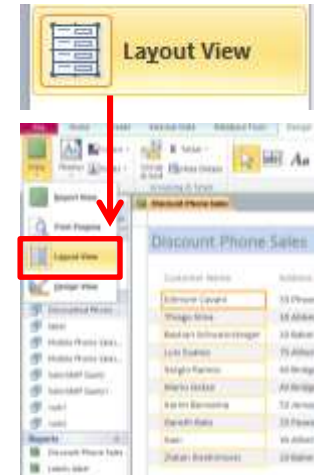
OK Cancel

Discount Phone Sales

Discount Phone Sales

Customer Name	Address Line 1	Model	Price	Sales_Person_Name	Full_Time	Sale_Price	notes
Edmond Cavani	33 Phoenix Road	I phone 4	€250.00	Alan Lawson	No	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Thiago Silva	38 Ashby Road	I phone 4	€250.00	Alan Lawson	No	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Bastian Schweinsteiger	52 Baker Street	I phone 4	€250.00	Yasar Ahmad	Yes	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Luis Suarez	79 Albert Road	I phone 4	€250.00	Ben Jones	Yes	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Tarquin Barrow	43 Bridge Street	I phone 4	€250.00	Yasar Ahmad	Yes	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Mario Gotze	42 Bridge Street	I phone 4	€250.00	Yasar Ahmad	Yes	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Karim Benzema	33 Jersey Terrace	I phone 4	€250.00	Yasar Ahmad	Yes	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Gareth Bale	29 Peace Street	I phone 4	€250.00	Yasar Ahmad	Yes	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Kavi	33 Albert Road	I phone 4	€250.00	Ben Jones	Yes	€225.00	3 MP camera Wi-Fi GPS Bluetooth
Zlatan Ibrahimovic	10 Baker Street	I phone 4	€250.00	Alan Lawson	No	€225.00	3 MP camera Wi-Fi GPS Bluetooth

Total Price: €2,250.00



- 1) Make sure **Report title** is the same as the **Report Header**
- 2) **Format** the report in **Layout View** making sure all field names and data is visible.

Page Footer/Header:
Anything information will appear each printed page either in the (header) or (footer) of the report.

Discount Phone Sales

Report Header

Discount Phone Sales

Page Header

Customer Name	Address Line 1	Model	Price	Sales_Person_Name	Full_Time	Sale_Price	ext
Customer Name	Address Line 1	Model	Price	Sales_Person_Name	Full_Time	Sale_Price	ext

Page Footer

Page Footer

Total Price: €Sum(Sale)

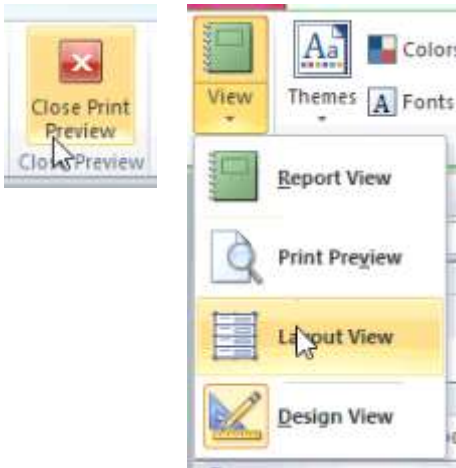
Report Footer/Header:
Anything information will appear on only the first (header) or last page (footer) of the report.

Report – Show Labels and fit to a single page wide

fits on a single page wide

Dispatch manifest (port: Brest)

VIN	Model	Power	Engine_Size	Cost_Price	Colour	Port	Distributor	sd_Price
365B15423017	MicroZed	D	1200	#####	Red	Brest	FMD SA	#####
365C15423016	MicroSE	H	900	#####	Red	Brest	FMD SA	#####
365C15423020	MicroZed	D	1200	#####	Red	Brest	FMD SA	#####
366A15423008	MicroSE	H	900	#####	White	Brest	FMD SA	#####



Dispatch manifest (port: Brest)

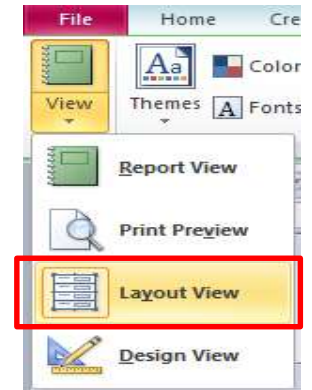
VIN	Model	Power	Engine_Size	Cost_Price	Colour	Port	Distributor
365B15423017	MicroZed	D	1200	€11,000.00	Red	Brest	FMD SA
365C15423016	MicroSE	H	900	€12,000.00	Red	Brest	FMD SA
365C15423020	MicroZed	D	1200	€11,000.00	Red	Brest	FMD SA
366A15423008	MicroSE	H	900	€12,000.00	White	Brest	FMD SA



- In layout view adjust the column widths to ensure all data is shown.
- Press Shift to select the Field Name and Data so you can adjust both pieces of data at the same time.

Formulas in the Report

We can use a number of formula in the report to calculate values from fields including: Sum, Average, Count, Max, Min etc. **You need to ensure you are in layout view.**



Function Tool

The image shows the Microsoft Access interface. The 'Totals' dropdown menu is open, with 'Sum' selected. Below the menu is a report table with the following data:

	Genre	Shop Name	Current Stock	Sale	Price	Author Name	New Stock Level
Harry Potter and the Half Blood Prince	Adventure	Amazon	13	No	£4.00	J. K. Rowling	18
Harry Potter And The Order Of The Phoenix	Adventure	Amazon	12	No	£4.00	J. K. Rowling	17
The Fault in Our Stars	Drama	Amazon	12	No	£3.75	John Green	17
Harry Potter and the Deathly Hallows	Adventure	Amazon	7	No	£4.99	J. K. Rowling	12
Harry Potter and the Prisoner of Azkaban	Adventure	Amazon	0	No	£4.45	J. K. Rowling	5

Selected Fields

The image shows the Microsoft Access interface in Design View. The 'Design' tab is selected. A report footer is visible with the following text:

number Total turbines in operatio =Sum([Number])

In Design View you can add a label for your calculation. Make sue formula is in Report footer.

Formulas in the Report

calculates the **average Length** positioned below the *LENGTH* column and formatted to 1 decimal place

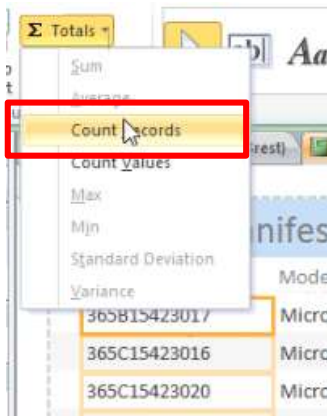
has the label **Average length** to the left of this number

calculates the **total number of Course_Codes** in this selection and positions this number under the *Course_Code* column

has the label **Total water codes** to the right of this number

calculates the **total number of cars** in this selection and places it at the bottom of the report

has a label to the left of this number **Total cars for France**



has your name, Centre number and candidate number at the bottom of the report.

Yasar Ahmad,	1234,	5678			
--------------	-------	------	--	--	--

Labels

34 Produce a report which:

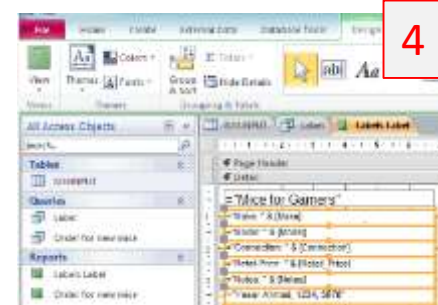
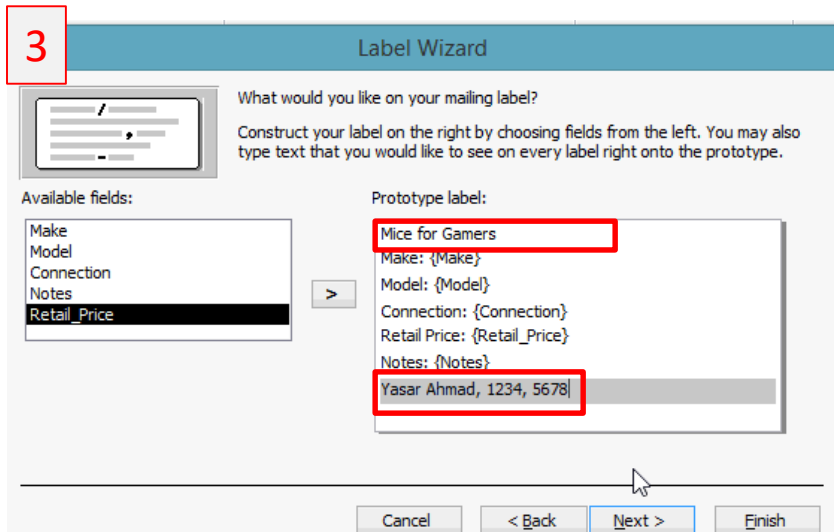
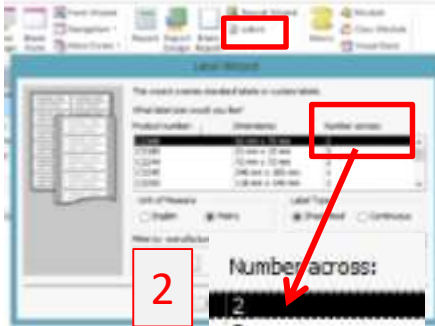
- Query** • contains a new field called **Retail_Price** which is calculated at runtime. This field will calculate the *Cost_Price* plus 20% Retail_Price:[Cost_Price]*1.2
- Query** • shows only *wireless or dual* connected *Gaming* mice Criteria 1) Connection: Wireless or Dual
Criteria 2) Gaming: Yes
- Query** • is sorted into *descending order of Retail_Price*
- Report** • is in label format with *2 labels side by side and 8 labels* to the page When creating the label in report wizard include the title.
- Report** • fits on one page wide in portrait layout
- Report** • includes the title *Mice for Gamers* at the top of each label
- Query** • shows only the fields *Make, Model, Connection, Retail_Price,* and *Notes*
- Report** • shows suitable text to identify the fields
- Report** • has an *increased font size for the title Mice for Gamers*
- Report** • has your name, Centre number and candidate number at the *bottom of each label.*

Create the query first for your labels using the specified fields and search criteria.

1. Select the labels icon.
2. Select the dimensions and the number across (2).
3. Write in the heading, Field names and select the field data.
4. In design view can you format the label.

Report Wizard

Labels 1



Mice for Gamers
Make: Razer
Model: Naga
Connection: Wireless
Retail Price: 65.988
Notes:
Yasar Ahmad, 1234, 5678

Labels 2016 March

You are going to prepare attendance badges for a meeting.

- 23 • Produce labels from all the data which:
- are arranged in two columns
 - only include employees whose *Job_Description* contains *Engineer* and who work in the offices in *Mumbai* or *Bangalore*
 - show only the fields *First_Name* and *Family_Name* on one line, with their *Job_Description* on the next line.
 - include this heading, in a larger font size, at the top of each label:
Mana Project Development
 - include your name, Centre number and candidate number at the bottom of each label.

Search Criteria

Field:	[Family_Name]	[First_Name]	[Job_Description]	Office
Table:	M16EMPLOYEES	M16EMPLOYEES	M16EMPLOYEES	M16OFFICES
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:			Like "*engineer*"	"Mumbai" Or "Bangalore"
or:				

engineer

Field is hidden

Labels 2016 March

You are going to prepare attendance badges for a meeting.

- 23 • Produce labels from all the data which:
- are arranged in two columns
 - only include employees whose *Job_Description* contains *Engineer* and who work in the offices in *Mumbai* or *Bangalore*
 - show only the fields *First_Name* and *Family_Name* on one line, with their *Job_Description* on the next line.
 - include this heading, in a larger font size, at the top of each label:
Mana Project Development
 - include your name, Centre number and candidate number at the bottom of each label.

Available fields:

Family_Name
First_Name
Job_Description



Prototype label:

Mana Project Development

{First_Name} {Family_Name}
{Job_Description}

Yasar Ahmad, 1234, 5678

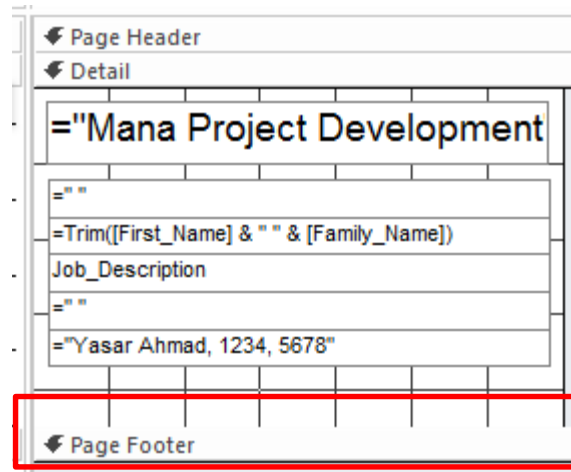
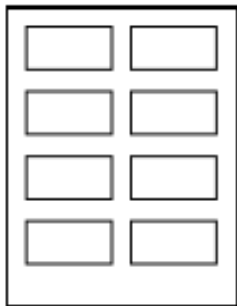
No fields names are displayed

Labels 2016 March

You are going to prepare attendance badges for a meeting.

- 23 • Produce labels from all the data which:
- are arranged in two columns
 - only include employees whose *Job_Description* contains *Engineer* and who work in the offices in *Mumbai* or *Bangalore*
 - show only the fields *First_Name* and *Family_Name* on one line, with their *Job_Description* on the next line.
 - include this heading, in a larger font size, at the top of each label:
Mana Project Development
 - include your name, Centre number and candidate number at the bottom of each label.

The page layout may look like this:



Adjust the label size to ensure you fit 8 labels per page

Summary Query

Find only the **MicroEco** cars that have been **sold** in **Madrid**

Using this selection produce a new report which:

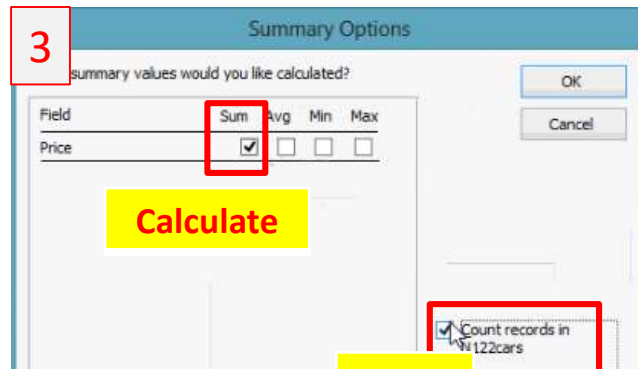
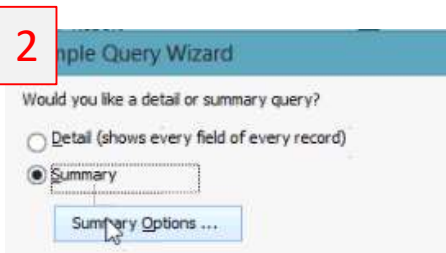
- shows only the *Sales_person*, *Model* and **Price**
- **calculates** the total value of these sales for each *Sales_person*
- **counts** the number of these cars sold by each *Sales_person*

Save this report in a form which can be imported into another document.

Model	Sum Of Price: Price	Count Of N122cars: C	Sold	Location
N122cars	N122cars	N122cars	N122cars	N122cars
Group By	Sum	Expression	Group By	Group By
MicroEco	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You can also enter search criteria into the summary query

On most occasions a summary query will ask for **calculation** and a **count**. One of the fields will contain numerical values which can be calculated.



Total Value of records

Sales_perso	Model	Sum Of Price	Count Of N1
Leon	MicroEco	£39,000.00	3
Machado	MicroEco	£52,000.00	4
Marcos	MicroEco	£52,000.00	4
Sanchez	MicroEco	£195,000.00	15
Villalobos	MicroEco	£91,000.00	7

Number of Records

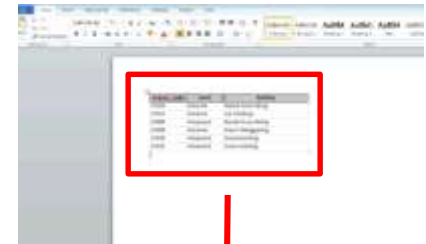
Extracting Data

- 37 Save and print this report.
- 38 Produce an **extract** from all the data which:
 - Query**
 - selects only those activities
 - containing Snow or Ice
 - located in Scotland
 - where the *Type* is Thrill
 - Query**
 - shows only the fields *Course Code*, *Level* and *Activity* in this order
 - Query**
 - sorts the *Activity* in ascending alphabetical order.
- 39 Save this data in a form which can be imported into the document that you saved in step 28.
- 40 Import this data into your document as a table after the paragraph which ends: ... *even the most demanding thrill seeker.*

This Extract will be imported into a Word Document

Criteria 1) Activity - Like "snow" or "ice"
 Criteria 2) Location - Scotland
 Criteria 3) Type - Thrill

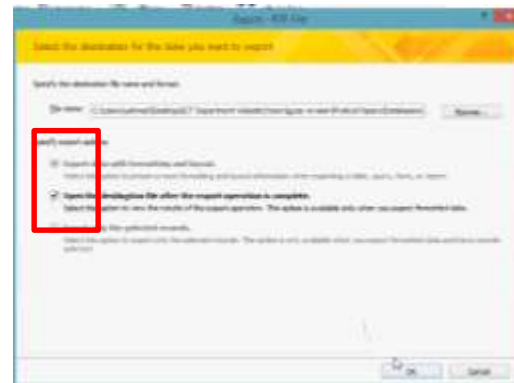
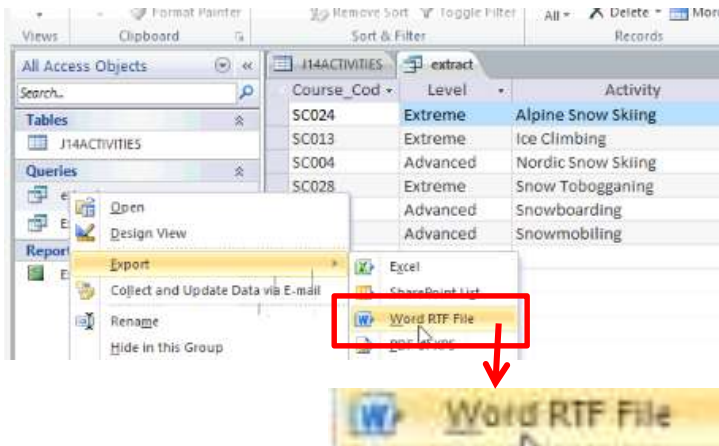
Tip: To extract a query or report you have to right click and select the export option. You may be required to export into Excel to create a graph.



equipment is the latest available.

WINTER SNOW SPORTS

During the winter months you can enjoy a unique and unforgettable experience in the stunning highlands of Scotland. We offer a variety of exciting outdoor snow sports which are ideal for those who like their sport to be exhilarating. From snowmobiling to ice climbing we have a winter sport to meet the needs of even the most demanding thrill seeker.



Course_Code	Level	Activity
SC024	Extreme	Alpine Snow Skiing
SC013	Extreme	Ice Climbing
SC004	Advanced	Nordic Snow Skiing
SC028	Extreme	Snow Tobogganing
SC026	Advanced	Snowboarding
SC033	Advanced	Snowmobiling