

Database Queries: Pets (Access 2003)

- Open Microsoft Access.
- Create a new database called 'Pets'.
- Create a new table, with the following fields:
 - Pet ID
 - Pet Name
 - Type of Animal
 - Colour
 - Age
 - Outstanding Features
- Select appropriate data types for each field.
- Select appropriate field sizes for each field.
- Choose or create an appropriate primary key for the table.
- Save the table as 'Pets'.

Now add 5 records to your Pet table. Copy the records below into your table:

	Pet ID	Pet Name	Type of Animal	Colour	Age	Outstanding Features
▶	1	Samantha	Dog	Black	2	Limps
	2	Mark	Cat	Ginger	7	White Stripes
	3	George	Budgie	Yellow	10	Chirps
	4	Chuckle	Dog	Black	5	White Stripes
	5	Sidney	Hamster	White	4	Smiley
*	(AutoNumber)				0	

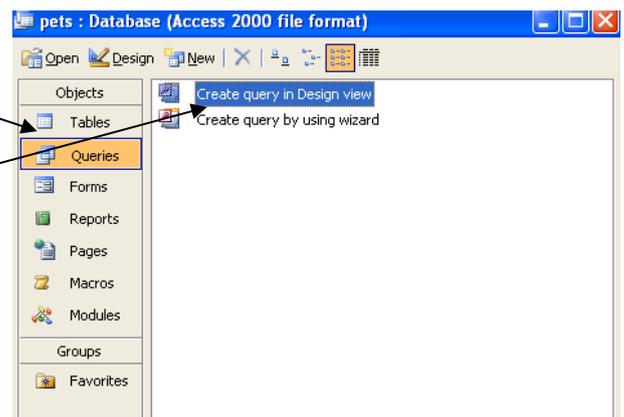
Figure 1: Pet records

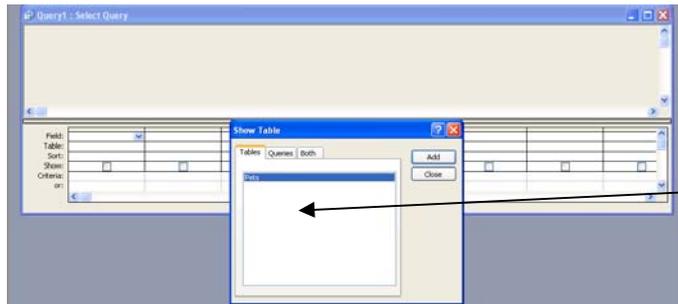
Close the Pets table.

We now want to create a query that will only display a list of all the pet names and the type of animal that they are.

Follow these steps:

- From the main menu, select 'Queries'
- Select 'Create query in design view'
- Either double-click on the selection, or select 'Open'





From the 'Show Table' window is displayed:

- Select 'Pets'
- Click 'Add'

This allows you to select fields from the pets table. If you had other tables in your database they would be listed here for you to choose from.

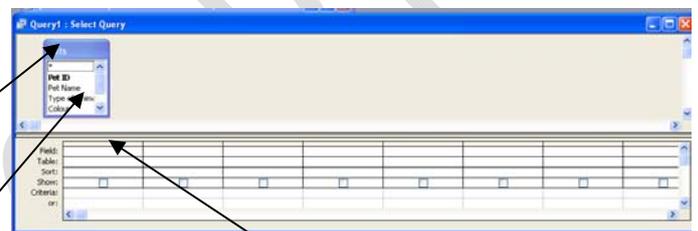
The query design window will be displayed.

You can see that the Pets table has been added to the top of the window.

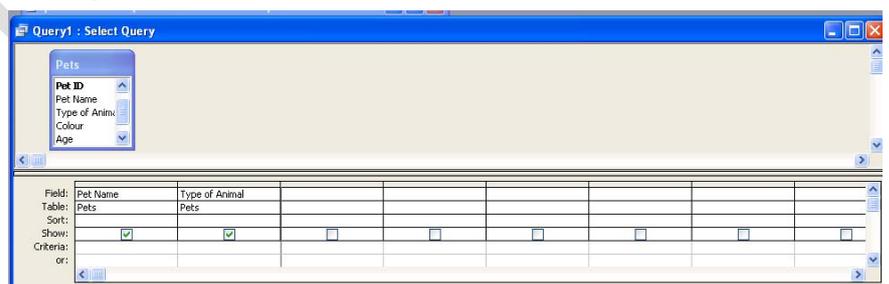
We now need to select the fields that we to include in our query.

Do the following:

- Double-click the pet name field from the list of fields in the pets table.
- The pet name field should be displayed in the first row of the first column.
- Another way of adding fields is by clicking on the field and dragging it - click on type of animal in the list of fields, hold your left mouse button down and drag the field to the first row in the second column.



Your query design should now look like this, with the pet name listed first followed by the type of animal that they are:



Select 'File' > 'Save' to save your query. Call it 'pet names and types of animal'.

Note: It is very important to save your queries with descriptive names. You can end up with many queries and will not know what each does as they are often very similar.

You now need to think about what information will be displayed before you actually run the query.

Go back to *figure 1: Pet records* in this workbook (page 2) and think about the information that you think will be displayed.

With your query open in design view, click on the run icon 

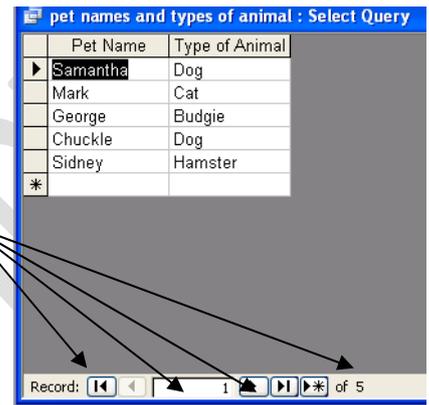
This will run the query and select the data that you have specified, as below:

As you can see, only the pet names and type of animal are listed. The query has selected only the fields that you selected.

At the bottom of the window you can move between records and it shows you how many records there are in the selection.

Try clicking on the arrows to move between records.

Close this query, saving any changes that have been made.



Pet Name	Type of Animal
Samantha	Dog
Mark	Cat
George	Budgie
Chuckle	Dog
Sidney	Hamster

TASK 1

Create a new query that lists only the types of animal and the colour field.

Save the query as types of animal and colour.

Run the query to observe the results.

Close the query, saving any changes.

SELECTING CRITERIA IN A QUERY

Within a query, it is possible to narrow down the selection even more.

In the previous tasks, you have narrowed down results, by selecting fields. It is also possible to narrow down the results by selecting specified records.

To do this we will specify *criteria* in the query.

The main criteria types are:

< > = <= >= OR AND wildcard

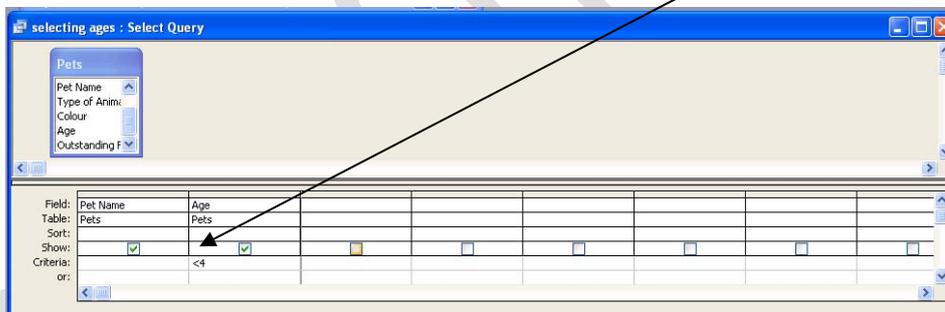
We will work through each of these:

- Create a new query, selecting only pet name and age from the list.
- Save the query as 'selecting ages'.

LESS THAN (<)

We want to select all the pets that are younger than 4.

Under the age column, in the criteria box, type <4



Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed. You should select all the pets whose age is less than 4.

With the query selected, click on the run icon.

Do the results of the query match your predictions?
Only one record should have been selected – Samantha.
As you have only selected the pet name and age, these are the only fields that will be displayed.

Pet Name	Age
Samantha	2
*	0

We now want to change this query. Rather than close the window,

click on the design icon, to re-open the query in design view.



LESS THAN or EQUAL TO(<=)

We now want to select all the pets that are 4 or younger.

Where you have entered the criteria <4, delete this and type <=4.

Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed. You should select all the pets whose age is less than or equal to 4.

With the query selected, click on the run icon.

Samantha and Sidney should be the records that are displayed.

GREATER THAN (>)

We now want to select all the pets that are older than 10.

Open the query in design view.

Where you have entered the criteria <=4, delete this and type >10.

Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed. You should select all the pets whose age is greater than 10.

With the query selected, click on the run icon.

There should be no records displayed.

GREATER THAN or EQUAL TO (>=)

We now want to select all the pets that are 10 or older.

Open the query in design view.

Where you have entered the criteria >10, delete this and type >=10.

Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed. You should select all the pets whose age is greater than or equal to 10.

With the query selected, click on the run icon.

George should be the record that is displayed.

OR

We now want to select all the pets that are either 2 or 10.

Open the query in design view.

Where you have entered the criteria ≥ 10 , delete this and type $= 2$ OR 10.

Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed. You should select all the pets whose age is either 2 or 10.

With the query selected, click on the run icon.

Samantha and George should be the records that are displayed.

AND

We now want to select all the pets that are older than 4, but younger than 7.

Open the query in design view.

Where you have entered the criteria $= 2$ OR 10, delete this and type > 4 AND < 7 .

Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed. You should select all the pets whose age is greater than or equal to 10.

With the query selected, click on the run icon.

Chuckle should be the record that is displayed. He is the only pet who is older than 4, but younger than 7.

Close the query. Save any changes.

WILDCARD

We now want to select all the pets whose name begins with the letter S. This is where we use the wildcard feature.

Create a new query, with only the pet name field. Save the query as 'pets beginning with S'.

In the criteria for the pet name, type S^* . The * represents all letters that follow the letter S.

Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed. You should select all the pets whose name begins with S.

With the query selected, click on the run icon.

Samantha and Sidney should be the records that are displayed.

Save and close the query.

MORE...

So far most of the queries that we have performed are using numbers as the selection criteria.

- Create a new query, save it as outstanding features
- Add the pet name and outstanding features fields to the query design
- In the criteria for the outstanding features field type = "White Stripes"
- Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed.
- Mark and Chuckle should be the records that are displayed.
- Save and close the query.

It is also possible to narrow down your results by entering criteria for more than one field. For example, we could select all dogs that are black.

Do the following:

- Create a new query, save it as black dogs.
- Add the pet name, type of animal and colour fields to the query design.
- In the criteria for the type of animal type = "Dog"
- In the criteria for the colour type = "Black"
- Go back to *figure 1: Pet records* in this workbook (page 2) and determine the records that you think will be displayed.
- Samantha should be the record that is displayed.
- Save and close the query.

TASK 2

Create another **three** queries that incorporate one or more of the criteria types e.g. < > = OR AND wildcard, to select different records. Save your queries with appropriate names.

Write down the queries that you have carried out and the criteria that you have used.

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