Designing and Creating Databases

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12 Database Forms

Forms are the user's view of the database table. They use forms to look at, change and add information. We see how to design, create, modify, use and print a form.

12.1 Design Principles

A user is not necessarily the same person who designed and built the database in the first place. A user does not necessarily have the database development skills that you and I have. In general, we write databases for other people to use. If a user does not like our database, if a user does not like our forms, they are likely to make mistakes and rubbish our efforts. So we take great pains to produce a database that users like and appreciate.

Layout If we expect users to transfer handwritten data from a printed form to a database form, we follow the layout of the printed form exactly. We use space to make the form look well-balanced and to distinguish between different parts of the form. We use headings to help the user. We indent captions under their headings.

Direction We guide users through our forms, from top to bottom, from left to right, without backtracking, without jumping about. We check that by using the tab key, we go through the form in the right order.

Minimise effort Wherever reasonable, we provide drop down lists so the user can choose an appropriate value rather than typing it out in full. This also helps to minimise mistakes in data entry.

Readability We ensure font size is large enough (but not too large) and font style is simple. For example, most people find black Arial size 10 on a white background easy to read. We remember that not everyone has our eyes.

Colour We use colour only where it helps the user, and then only the least possible amount. We consider shades of pale blue (used by professionals such as Microsoft and Google) or shades of grey, or shades of pink, to help distinguish different sections of the form, and also to look good when printed on a black and white printer. We never use background colours or images that make text harder to read.

Distractions Users are seriously distracted and annoyed by irrelevant objects, vibrating texts, moving images, large pictures at the expense of text they are trying to read, and advertisements. We do not use them.

KISSS rules: Keep It Small, Sweet and Simple.

12.2 Database Creation

Forms are usually based on an underlying table, so we use the simplest way to create a form, and then add some formatting. But first, we create the database table.

Scenario TheNewsShop delivers newspapers to the surrounding area. When a customer requests a newspaper be delivered, the title, days published, customer name and address are recorded and a database record is created. A new record is created for every newspaper ordered; this is a bit inefficient because it means recording the customer's name and address more than once if a customer orders several newspapers. This problem is addressed in the next course. One of the advantages of using a database is that the papers required for a particular delivery route on a particular day can easily be printed in a report - but that is another story. Here, we are concerned primarily with creating a user-friendly data input form.

Design As usual, we start with some example data.

Deliveries

Ord	Paper	Mo	Tu	We	Th	Fr	Sa	Su	Name	Address
1	Financial Times	✓	✓	✓	✓	✓			Ivor Banks	3 Sea View
2	Times	✓	✓	✓	✓	✓			Tim Burr	15 Ocean Boulevard
3	Sunday Times							✓	Tim Burr	15 Ocean Boulevard
4	Daily Telegraph	✓	✓	✓	✓	✓			Sue Me	27 The Parade
5	Sunday Telegraph							✓	Dave Wood	19 Ocean Boulevard
6	Daily Express	✓	✓	✓	✓	✓			Sandy Shore	23 Sandiacre
7	Sunday Express							✓	Sandy Shore	23 Sandiacre
8	The Ukton Post						✓		Sal Mond	7 Sea View

Ord means Order Number, a key field.

Create a Text File

  1. create a text file with the sample data shown above. The first line contains the field headings. Each record is on its own line. Each field is separated from the next by a comma. No spaces between fields. In the delivery day fields, Mo, Tu, We, ... use Yes for a ✓, No for a blank. Name the file deliveries.txt and save it in an appropriate place.

Create a New Database

  1. create a blank, new database, name it deliveries.accb and set it in an appropriate place.

Import the Text File

1. under the External Data tab, in the Import group, choose Text File.

2. browse to where your text file, deliveries.txt, is located and rapid double click on the filename itself.

3. choose Import the source data into a new table... OK.

4. specify the file is delimited. Next.

5. specify the delimiter is a comma. Confirm the first row contains field names. Next.

6. choose Ord to be indexed. Yes (No Duplicates). Next.

7. choose my own primary key, Ord. Next.

8. import to Table, tblDeliveries. Finish. Close.

Adjust the Table Structure

1. check out the table. Adjust column widths. Switch to Design view. Make appropriate adjustments to field Size and Data Type. Save (and ignore any error messages).

Check the Data for Accuracy and Completeness

1. Switch to Datasheet view. Carefully check and correct any errors in the data. Save.

We now have a table populated with sample data.

Ord	Paper	Mo	Tu	We	Th	Fr	Sa	Su	Name	Address	Add
1	Financial Times	☑	☑	☑	☑	☑	☐	☐	Ivor Banks	3 Sea View	
2	Times	☑	☑	☑	☑	☑	☐	☐	Tim Burr	15 Ocean Boulevard	
3	Sunday Times	☐	☐	☐	☐	☐	☐	☑	Tim Burr	15 Ocean Boulevard	
4	Daily Telegraph	☑	☑	☑	☑	☑	☐	☐	Sue Me	27 The Parade	
5	Sunday Telegraph	☐	☐	☐	☐	☐	☐	☑	Dave Wood	19 Ocean Boulevard	
6	Daily Express	☑	☑	☑	☑	☑	☐	☐	Sandy Shore	23 Sandiacre	
7	Sunday Express	☐	☐	☐	☐	☐	☐	☑	Sandy Shore	23 Sandiacre	
8	Ukton Post	☐	☐	☐	☐	☐	☑	☐	Sal Mond	7 Sea View	
*		☐	☐	☐	☐	☐	☐	☐			

12.3 Form Creation

We base the form on our table structure, then we add some formatting.

With the database open:

1. click on the name of the table, tblDeliveries, in the Navigation pane

2. on the Create tab, in the Forms group, choose Form. Access creates a form based on the selected table.

12.4 Formatting

By default, the form is shown in Layout view, and each element of the form, labels, text boxes, tick boxes, are glued together by a control layout that stacks each item one above the other. So, if you try to reduce the width of the Order Number (Ord:) text box to better fit its value for example, the whole form is reduced in width. Pooh. So our first job is to disconnect the glue that holds the various parts together.

1. click on the select all icon. It is a pair of crossed arrows top left of form

2. on the Arrange tab, in the Control Layout group, click Remove. Now we can drag and drop components, and adjust individual text box widths as we like.

3. adjust the width taken up by all the tick boxes: click on a tick box - its space is shown by an arange border. Hold down the shift key and click on each of the other tick boxes in turn. This selects them all. Position the cursor on the right

hand border of the selected tick boxes - the cursor becomes a two-headed arrow - then drag the border to the left to make the space allocated to a tick box just big enough.

4. now take each tick box label (Mo, Tu, We, ...) in turn and position them in a row below the paper

5. take each click box in turn, and position it beneath its label.

6. make other appropriate adjustments to the layout. Here, I have written out Ord: in full, right aligned the captions, made text field widths more appropriate, and right aligned the order number itself. The arrow keys on the keyboard were helpful for nudging selected components into their right place.

7. right click on the form tab and save the form as frmDeliveries, OK.

I am quite happy with the default colour scheme (captions in blue, data in black - but the title needs changing. So, with the form in Design View:

8. click on the title tblDeliveries in the Header section

9. change the title to Newspaper Orders

10. revert to Layout View, check and Save.

OK. All that looks out of place now is the icon (top left of form) - but I leave that to yourselves to deal with as you please.

12.5 Views

There are three ways to view a form:

- Layout view - used to see what your form looks like with data, allows you to apply some formatting

- Design view - used exclusively to apply extensive formatting

- Form view - used exclusively to view and edit data. We use Form view when printing, adding new records, or making changes to existing records.

12.6 Printing

With the form open in Form view, choose Office Button, Print

12.7 Navigation

The navigation tools are found at the bottom of the form. With them you can go directly to the first, next, last and previous record in the database table. You can add an entirely new record - just click on New (Blank record). And you can enter a search term e.g. Tim Burr, and, if found, the record with that term is displayed.
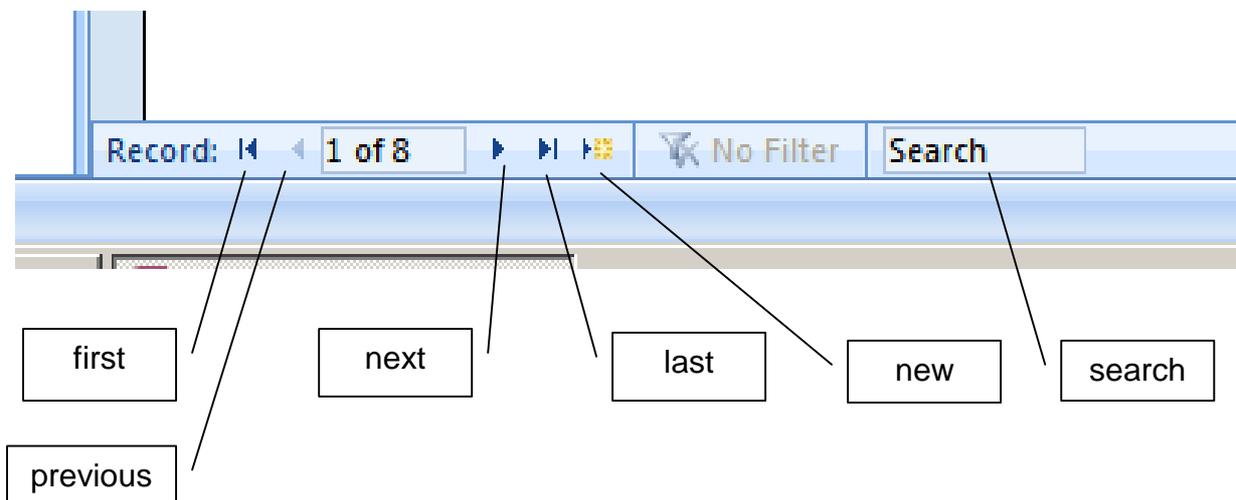
Exercise 12.1

With the form open in Form view:

1. use the Quick Search box (among the Navigation tools) to find Sue Me's record

2. click on New (Blank record) and add a new record: Martha Matics, The Sun, Mo, Tu, We, Th, Fr, 16 Sea View

3. Sandy Shore has moved to 17 Smugglers Cove. Make the appropriate changes to her record.

4. Dave Wood has left the area. Delete his record - first locate his record, then choose Home, Records, Delete Record.

We have seen how to design, create, modify, use and print a form, and go some way to making our databases pleasant to use.

We could continue the usability theme with switchboards, startup forms, protecting database structure, automating processes with macros, charts and graphs. But we leave these subjects to a more advanced course.

All that remains now is some practice and the final assessment. Good luck.

Bibliography

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