Assignment Number:	INN210.3
Assignment Name:	Access Assignment – Part B
Weighting:	7%
Due Date:	Monday, 10th October 2014 Rather than leaving it to the last minute, you are strongly encouraged to start working on this assignment at a much earlier stage. The relevant material on Microsoft Access is covered in Lectures 7 through 9, and in the related Practicals.
Items to be Submitted:	**AccessAssign142_Oly2012.accdb** – *You must upload this specific file.* DO NOT put your database inside a zip file, or inside any other kind of file. If you ignore this requirement, you will receive zero. Make sure that Microsoft Access is CLOSED when you upload your database to Blackboard. Otherwise, your database will very likely be uploaded in a corrupted state. If your uploaded database is corrupted, then you will very likely receive a lower mark.
How to be Submitted:	The assignment must be submitted using Blackboard.

Introduction to Part B

Overview

In this part of the assignment, you are to improve the functionality and appearance of the **EventResults** form that you created in Task 3 of **Part A**. That form illustrates both the *strengths and weaknesses* of the **Form Wizard**: it does a lot of the heavy-lifting work for you by automatically putting all the fields on the main form and the subform – otherwise you would have to do the work of *creating each of them by hand, one at a time* – but the overall visual appearance is *quite rough*. Here, you will improve things.

By the way, if you're not already aware of the importance of a well-designed user-interface, you should read the **PROSKILLS** box at the top of page AC 178 of the textbook.

Note that this Part is *more challenging* than **Part A**, in that it requires you to do more than just using the **Form Wizard.** To create the required form, you must directly manipulate the properties of the form and its subforms – see **Lecture 9** – and more.

Key Approach

As stated in **Part A**, when implementing a form, it is important get it working properly *first*, and *then* fix up the appearance. For example, the final form – see Figure 8.1, near the end of this document – does *not* show the navigation buttons that the **Form Wizard** has already put at the bottom of the main form and the subform. While it is fairly easy to turn these off, it is a bad idea to do that too early, because that makes it harder for you to move from one row to another, to check that your form is working properly.

Do's and Don'ts

See Part A of the Access Assignment.

The Database

Use the **AccessAssign142_Oly2012.accdb** database that you completed for Part A. But make sure that you *take a safe copy first*, in case you accidentally destroy something. One way to do this is by using **Windows Explorer** to copy your database, and then rename the copy to something like **AccessAssign142_Oly2012_PartA.accdb**. *Don't do this when Access is open.*

(If for some reason, you have not yet done assignment Part A, then you must do at least Tasks 1 through 3 of that part, before continuing here.)

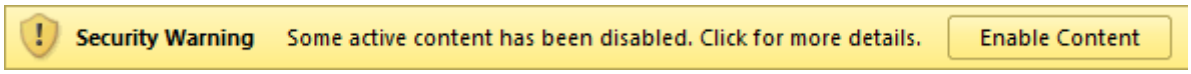
Creating an "Advanced" Copy of Your Form and Subform

To avoid confusion with the form you created in Part A, you are to start by taking a copy of that form. When a form contains a subform, *copying both correctly is a little bit tricky*, so we've provided an easy way to do this, below. (Warning: the alternative of trying to use commands such as **Save As,** or **Copy** and **Paste,** will leave you with

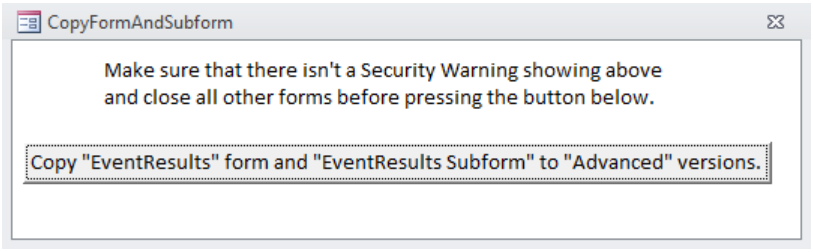
something that *looks ok, but isn't*. Unless you're an expert at Access and already know how to fix the problem that this creates, don't do this.)

1. Open the **AccessAssign142_Oly2012.accdb** database that you completed for Part A.

2. To guard against viruses, Access 2010 disables executable code by default. Here, we need to enable that code. To do this, click **Enable Content** in the Message Bar, as shown below. All executable code is now allowed to run, in this specific database.



3. Open the **CopyFormAndSubform** form (in **Form View**).



4. Click the **Copy …** button on this form.
   If everything is ok, a **Done** message box will appear. Close that message box, and then close the above form.
   If the **Done** message box *does not appear*, check that you have done step 2 correctly.

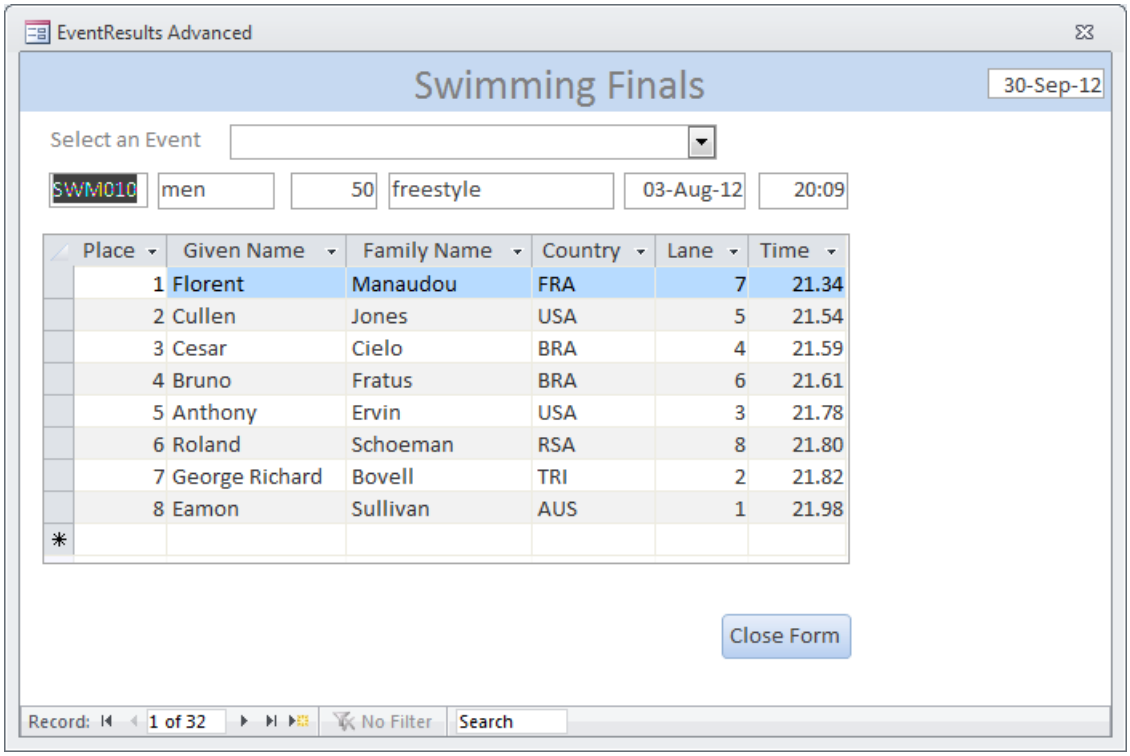
You will have two new forms in the **Navigation Pane**. These are copies of your existing form and subform, with the names: **EventResults Advanced** and **EventResults Advanced Subform**. At the moment, they're just copies so they're not really "advanced", just yet.

You ***must*** use these **Advanced** versions, for the rest of this Part of the Access Assignment.

Task 6 (The tasks in this Part continue on from those in Part A, and are numbered accordingly.)

Modify your **EventResults Advanced** form (including your **EventResults Advanced Subform** subform) – not your **EventResults** form/subform from Part A – to make it better functionally and visually. I.e. make it look like this.

Figure 6.1: An Improved Form



Place	Given Name	Family Name	Country	Lane	Time
1	Florent	Manaudou	FRA	7	21.34
2	Cullen	Jones	USA	5	21.54
3	Cesar	Cielo	BRA	4	21.59
4	Bruno	Fratus	BRA	6	21.61
5	Anthony	Ervin	USA	3	21.78
6	Roland	Schoeman	RSA	8	21.80
7	George Richard	Bovell	TRI	2	21.82
8	Eamon	Sullivan	AUS	1	21.98

Requirements for this main form (EventResults Advanced):

1. The *main form* shows today's date (in the Header section) and the event currently selected by the user (in the form's Detail section).

   When the form is first opened, the details of the first row[1] in the Event table are displayed but the combo-box will be blank, as shown above. [[1] The first row will be the first physical row – it could be for any event.]

   The main form's properties are such that it doesn't have any min/max buttons (see the top right hand corner), any record selectors (see the left-hand side of the main form), or scrollbars. The main form is presented in **Single Form** view.

   [Hint 1: use the **Date()** function (ref: textbook page AC 396) to obtain today's date. Do *not* use the **Now()** function.]
   [Hint 2: use the **Format** property to control the display of the date. To get help on this property, do the following.
   - In Design View, select a **Text Box**, then open its **Property Sheet** and click on the **Format** tab. Then click in the **Format** property, and then press the **F1** key (the Help key).
   - Access's Help window should open, and one of its suggestions should be **TextBox.Format Property**. (If that doesn't happen, then search for **TextBox.Format** in that Help window.)
   - Click on that, and then click on the **Date/Time Data Type**. Read the Help, especially the examples.]

2. The main form has a combo-box with the label **Select an Event** that lets the user go directly to any desired event. The drop down list of the combo-box (an example is shown in Figure 6.2, below) enables the user to select an event from the **Events** table. When the user selects an event from the drop down list, Access displays the matching details on the main form, and the subform.

   Note that the user doesn't see the **EventId** in the drop down list, and the list is sorted by **EventGender**, then **Style**, and then **Distance**.

Once an event has been selected, the value "men" or "women" (only) will appear in the combo-box. This is ok for now, and will be fixed in a later task.

[Hint 1: refer to **Lecture 9** for information on combo-box usage, and to textbook pages AC 330-333.]
[Hint 2: the combo-box wizard will help to create the basic combo-box, but you will have to modify its **Row Source** to get the correct sorted order. You will also need to modify its **Column Widths** property.]
[Hint 3: this combo-box is in the **Detail** section of the form]

3. The main form also contains a **Close Form** command button that closes the form.

   [Hint: refer to Prac 10 for information on command buttons.]

Requirements for this subform (EventResults Advanced Subform):

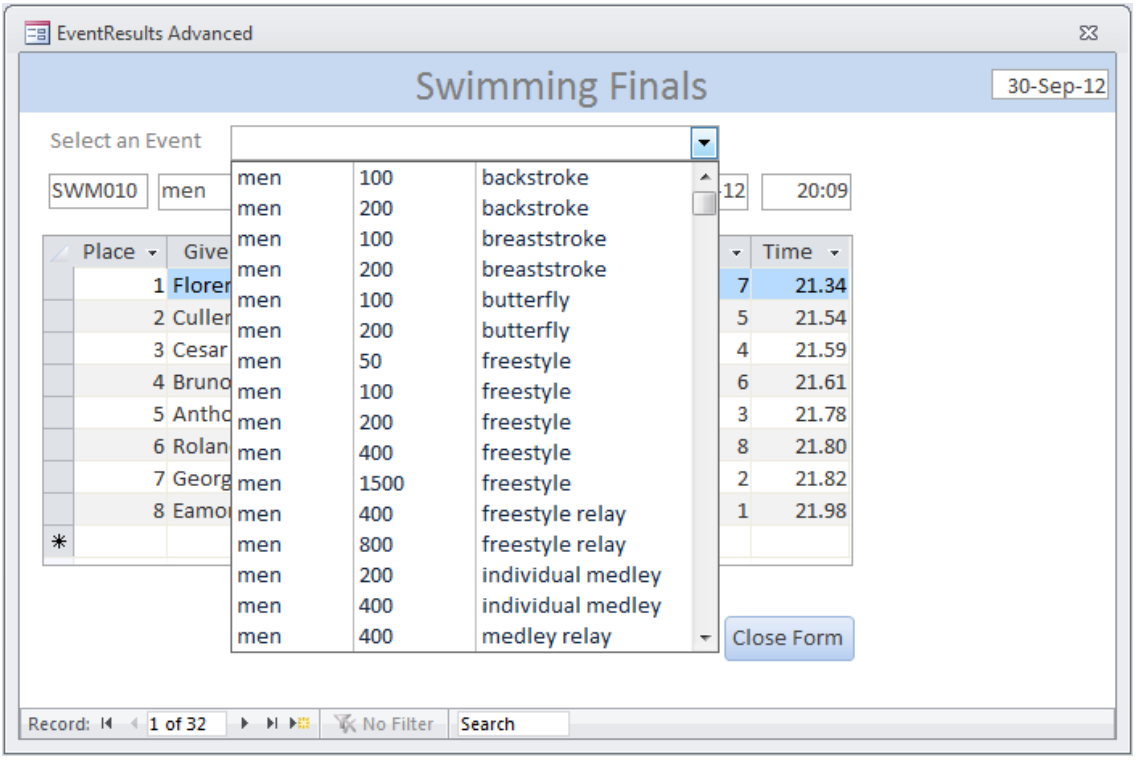
1. For the non-relay events, the subform shows the results in the event selected. The subform is presented in **Datasheet** view, so that we see all eight results at once. The subform's properties are such that it doesn't have any record selectors, navigation buttons or scrollbars.

   For the relays, the subform will be empty (because there are no **Results** rows for these events, in the database).

2. The subform does *not* show the **EventId**, because we can already see that on the main form. So you must remove the **EventId** from the subform. **Important**: the **EventId** is still used internally by Access to keep the main form and the subform synchronised, so you *must not* try to remove it from your **ResultsWithNames** query.

3. Note that the *column headings* in the subform are to be as shown above, e.g. **Country** rather than **CountryCode**. Do this by changing the contents of your subform, *not* your **ResultsWithNames** query – see also point (d) in the following.

Figure 6.2: An example of the combo-box's drop-down list.



Specific Hints and Warnings for this Task:

(a) Use the *correct* names for your form and subform.

(b) Remember the *Key Approach* described on page 1.

cont…

(c) See the Hints above (on this page, and the preceding page).

(d) *Do not* change your existing **ResultsWithNames** query from **Part A,** and *do not* try to use a different query for the subform described here.

(e) Remember that you can move a control (e.g. a text box) and its label either as a pair, or separately – see page AC 314.

(f) You must *delete* the labels and textboxes that were created in **Part A** but are not required here, rather than just hiding them.

(g) You will find it easiest to make most of the required changes to your form and subform while in **Design View**. However, you may find it easier to adjust the widths of the columns in the subform by using **Layout View**. (See page AC 191 for an example of using **Layout View**.)

(h) *If you change any of the database rows accidentally* while experimenting with the form, there are a three possible ways to deal with this. Firstly, remember that the **Undo** button is available, if you notice the change early enough. Secondly, you may like to change your form's properties to prevent (accidental) changes. If so, look at the **Allow...** properties, under the **Data** tab in the Form **Properties** dialog box. Thirdly, you may like to restart with a fresh copy of all the tables in the database, without losing all your queries, forms, etc. This is possible, but needs to be done carefully. See the Appendix in **Part A** of the assignment, for instructions on how to move your work to another copy of the database.

(i) While you do not have to place each control in *exactly* the same position as shown in the figures, you should make the appearance of your form close to that shown in those figures. Being able to follow a specification is an indication of your ability to communicate effectively with others in professional life. In addition, it will assist the marking of your assignment. For example, using drastically different fonts etc can influence the look of your form, (and make it harder to mark). However, you are encouraged to try out your form (and other work) by modifying the data in the database, e.g. adding new rows, changing existing rows etc.

(j) Note that changing the data in the database tables can make the output on your form differ from that shown in the figures here.

A Good Time to Think More Deeply about What You've Created So Far

You will find Access's forms easier to understand, if you can relate more of the material in **Lecture 9** to what you and the Wizards have done in this assignment. In particular, you should make sure that you understand the significance of the *important* properties listed below.

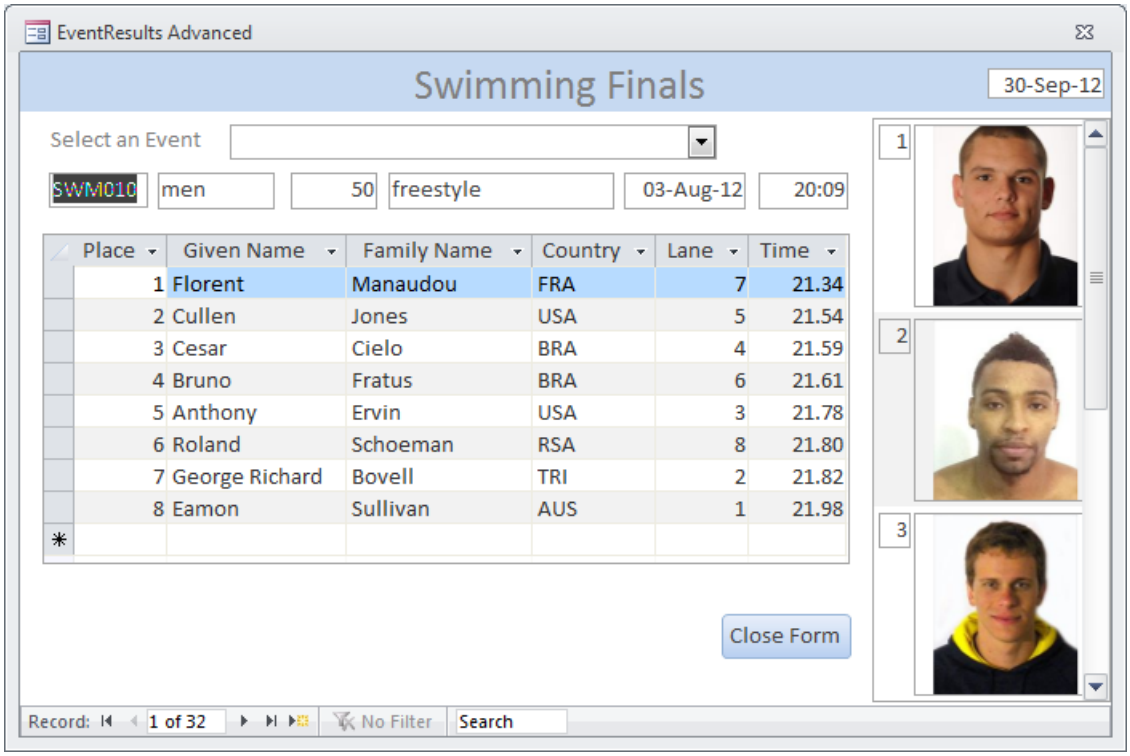
1. The values of these properties of your subform control – see slides 37-41 of **Lecture 9**:
   - **Source Object**
   - **Link Master Fields**
   - **Link Child Fields**

2. The values of these properties of your combo-box – see slides 59-61 of **Lecture 9**:
   - **Control Source** (Yes, it's empty. But why must it be empty, for this kind of combo-box?)
   - **Column Count**
   - **Column Widths**
   - **Row Source**
   - **Bound Column**
   - **Limit To List**
   - **After Update** (It is sufficient to understand that this property has an [Embedded Macro] as its value, and that this macro does the actual work of finding the matching row. You are *not* expected to look into the details of how that macro works.)

Task 7

In this task, you are to extend the form so that it shows the picture of the medal winners of each event, on another subform named **EventPictures Subform**. See Figure 7.1 below. This means that the main form now has *two* subforms – see slides 49-50 of **Lecture 9**.

Figure 7.1: Form with **EventPictures Subform** inserted.



Requirements for this subform (EventPictures Subform):

3. This subform shows the pictures of the competitors *who got first, second, or third place*, in the currently selected event. As the event selected on the main form is changed, the pictures change accordingly.

4. The number to the left of each picture shows the place of that person. Where there is a *tie* in an event – e.g. the tie for second place in SWM012 – two of the pictures have a "2" next to them. In such cases, the order of the pictures (for the tied swimmers) is *not* required to be the same as the order of their rows in the subform on the left of the form. I.e. it is ok if the pictures are swapped, in such cases. (In real-life you would want to handle that differently, but here we're trying to keep things relatively simple.)

5. In general, it is possible to have more than three medal-winners in an event, because of ties. While there were always exactly three medal-winners in each London Olympics individual swimming event, the scroll-bar allows for the general possibility that there could be more than three.

6. This subform is presented in **Continuous Forms** view. Remember the importance of the **Default View** property (see **Lecture 9**).

   The subform has a vertical scrollbar, but not a horizontal one. The subform does not have record selectors or navigation buttons.

By the way, while the supplied database has pictures for all the medal winners, it does *not* have pictures for all the swimmers. This could be done, but would make the database much bigger to download from (and upload to) Blackboard, i.e. make this much slower.

If you are unable to fully complete this task (Task 7), you should still go on to Task 8, to improve your marks. Task 8 is fairly easy and does not really depend on Task 7.

Specific Hints and Warnings for this Task:

(a) Use the *correct* name for your new subform, i.e. **EventPictures Subform**.

(b) You *must* use a subform. Using another kind of Access object is not allowed, even if it has a similar appearance.

(c) While not the only possible approach, I suggest that you use three steps to create this subform.

i. Create a new query that retrieves the data you need – see item (d) below.
ii. Create a new form that uses the data from your query – see item (e) below.
iii. Insert that new form as a subform onto your main form – see item (f) below.

(d) Your new subform must have a *source of data*. Think very carefully about what must be in this source of data. I suggest that you create a query, named **EventPictures**, that will retrieve the **EventId**, **Place** and **Picture** for each person who gets first, second, or third place. Your query should sort this information by **EventId**, and then by **Place** within **EventId**.

If you use **Design View** to create your query, be careful to select the whole **Picture** column, and *not any of its lower-level components*, such as **Picture.FileData**.

Why do you need the **EventId**? For the same reason you needed it with your other subform. Remember (from **Lecture 9**) that not all the fields in the RecordSource of a subform need be visible on that subform.

Needing the **EventId** does *not* mean that the **Events** table should be in your query. Why not?
You won't need the **MedalMatrix** table in your query. Why not?

Remember point (g) on page 2 of **Part A**, and *do not use any of your earlier queries* in this query.

If you run your query, *do not expect to see any pictures*. Instead you should see something similar to the following.

EventPictures

EventId	Place	
SWM010	1	(1)
SWM010	2	(1)
SWM010	3	(1)
SWM011	1	(1)
SWM011	2	(1)
SWM011	3	(1)

(e) Use the **Form Wizard** to create a new form that uses all the available columns from your above query. Choose a **Tabular** layout. When the Wizard asks **What title do you want for your form?**, enter the name **EventPictures Subform**, because this is the name that the Wizard will use for your new form. (It isn't a subform yet, but it will be soon, so using the correct name now is sensible.)

Once you form is created, you should be able to open it and see the competitors' pictures, to confirm that you're on the right track. The pictures will be for many events, but that's ok, at this stage.

You'll probably find it easiest to then go into **Design View** with this form, and modify it to make it look more like the subform on the right of **Figure 7.1** above.

(f) There is information on using the **SubForm Wizard** to add a subform to a form, on textbook pages AC 333-335. However, the textbook's example does this by using an existing table. Instead, in this assignment, you should select **Use an existing form** when you start running the **SubForm Wizard**, and then select your **EventPictures Subform** from the list of forms available.

You will still have to make some minor adjustments to your form, after using the **SubForm Wizard.**

Task 8

In this task, you are to make the final form look a bit better, as shown in Figure 8.1 below, and prevent the user from making accidental changes. To do this:

1. Remove the navigation buttons from the main form. With the combo-box available for the user to select events, the navigation buttons are not really needed.

2. Change the combo-box so that the event-gender, distance and style are all displayed after a value has been chosen, rather than just the value "men" or "women".

   With this change, it is somewhat redundant to still have the three separate event-gender, distance and style fields on the form. In real-life, you would remove them, and also remove the EventId field. But here, we will leave them on the form, to make it easier for you to check that your form is working correctly.

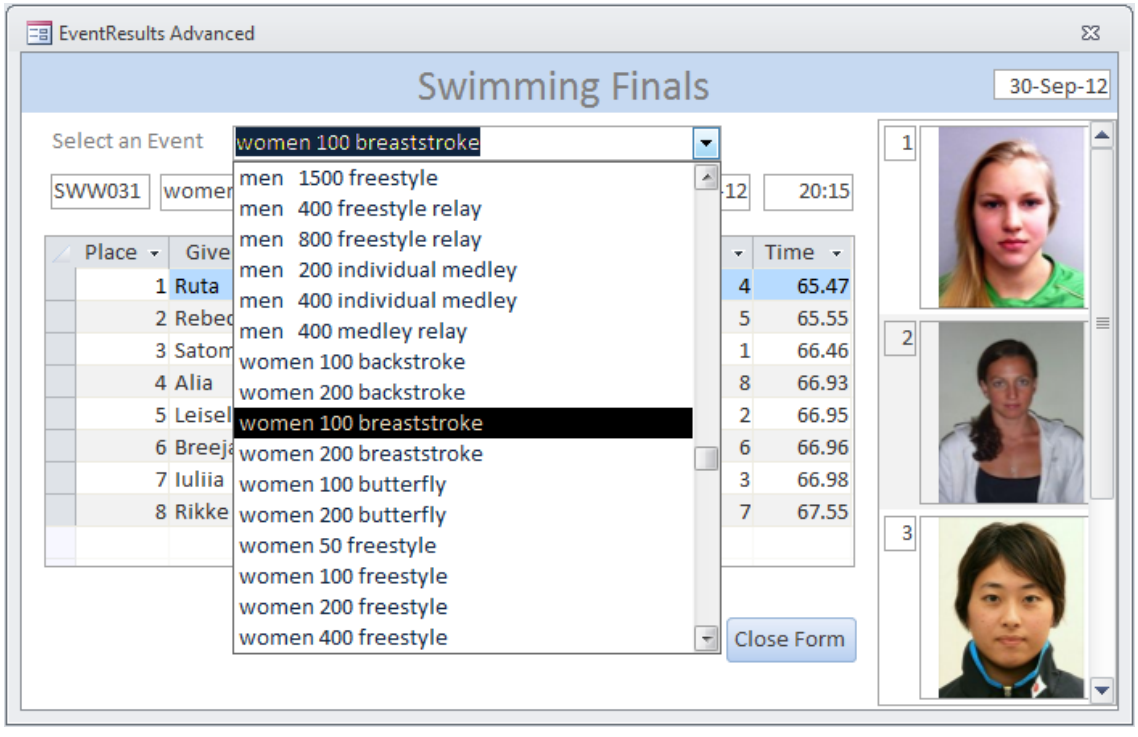
3. Prevent new rows being added in either subform.

   [Hint: investigate the use of the **Allow Additions** property.]

4. Prevent the data on any part of the form being changed. That is, change your form so that data shown on the form and its two subforms cannot be changed.

   [Hint 1: investigate the use of the **Locked** property.]
   [Hint 2: do not lock your combo-box. (What happens if you do?)]
   [Hint 3: like other types of controls, **subform controls** have this property. What does it do?]

Figure 8.1:



Specific Hints and Warnings for this Task:

(a) Microsoft Access supports string concatenation in SQL – see page 69 of the **Lecture Notes** PDF (from the first half of the semester) for the basic idea. But Access uses an ampersand (&) instead of the double vertical bar (||), described as one of the "non-standard SQL features" in **Lecture 8**. By the way, some other programming languages use "+" to do the same thing, e.g. Python, C#, Java.

(b) You will have to modify the **Row Source** of your combo-box. Once you've changed the **Row Source**, you'll also need to change the **Column Count** and **Column Widths** values, to match.

cont…

(c) You must use the **Locked** property in step 4 above. Using a form's **Allow...** properties is not a substitute (except that the **Allow Additions** property is allowed to be used, in step 3 above.)

When you have finished the form, take a few seconds to think about it from a non-technical user's perspective. Which looks better and is easier to use: the form created by the Wizard in **Part A**, or the form you've created here?

Reminders: before submitting your assignment:

(a) Check that you have met all the requirements under the **Do's and Don'ts** listed in **Part A**, and under *each* **Specific Hints and Warnings for this Task** section above. You don't want to lose marks for things that you think are unimportant, but which the marker views differently.

In particular, just because your answer "looks right" on the screen does ***not*** mean you will get full marks. As a simple example, if you use the wrong name(s) for your form or subforms, then you will lose marks.

(b) Remember to use the **PAT Add-in** to check whether your assignment is correct or not.

(c) Remember to use **Compact and Repair** just before you submit your database to Blackboard, so that your database is smaller and uploads more quickly. (Click the **File** tab in the Ribbon, make sure that the **Info** tab is selected and then click **Compact & Repair Database**.**)**

Distribution of Marks

Main form: **EventResults Advanced**	1.50%
Main form: **Select an Event** combo-box	1.50%
Subform 1: **EventResults Advanced Subform**	2.00%
Subform 2: **EventPictures Subform**	2.00%
Total Marks	**7.00%**

The marks here are allocated to the various components of the completed form, rather than on a task-by-task basis. Part marks will be given for a partly correct solution.

Marks are given for the work required in this Part of the assignment. That is, work that was (or should have been) previously completed in Part A will *not* be rewarded here (again).

A late penalty will be deducted for late assignments, in accord with Faculty policy.