

Advanced Pit Scouting

WARNING

Access automatically saves whenever any change is made to the table. If a mistake is made, ctrl+z will not save you. Make sure to back up your database before attempting any of these improvements.

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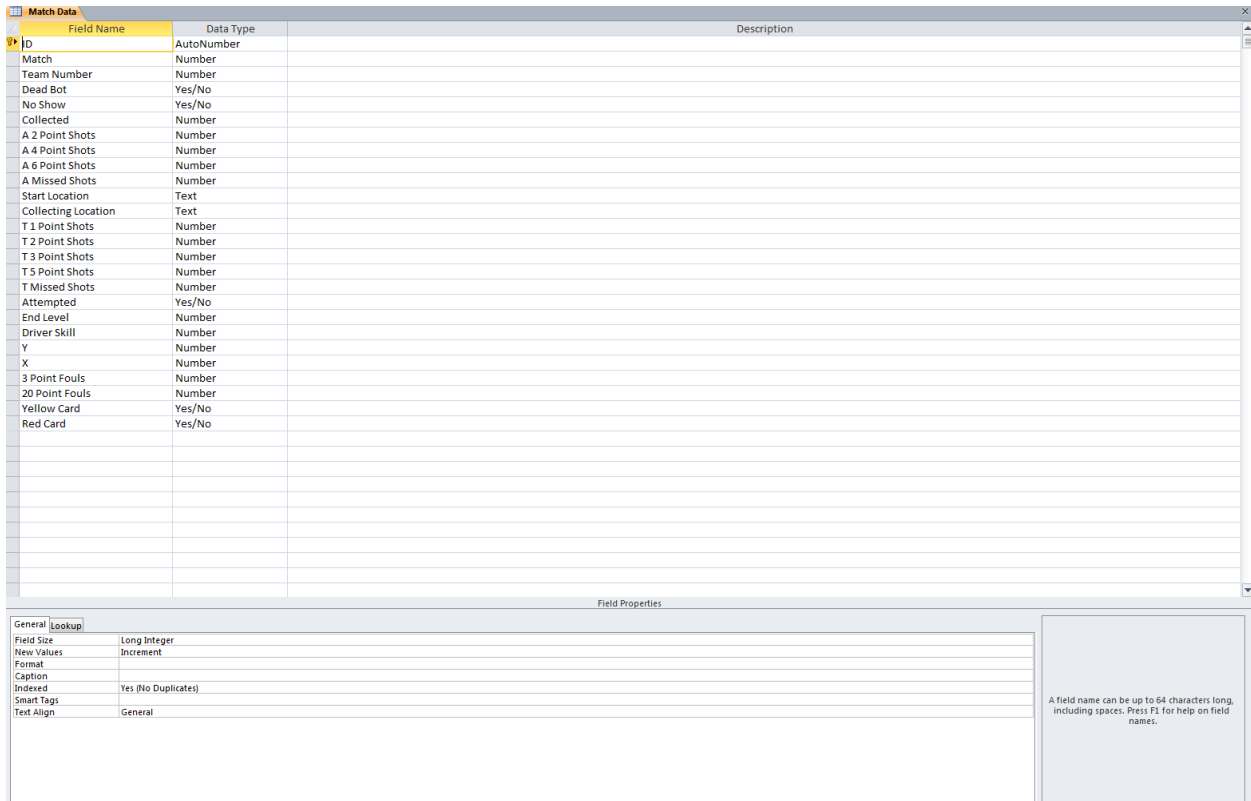
Design View

To use the advanced features in Access, you must first switch to design view.

1. On the lower right hand corner of our table, there are four buttons. Click the far right icon.



2. Now our table should look like this:



| Field Name | Data Type | Description |
|---------------------|------------|-------------|
| D | AutoNumber | |
| Match | Number | |
| Team Number | Number | |
| Dead Bot | Yes/No | |
| No Show | Yes/No | |
| Collected | Number | |
| A 2 Point Shots | Number | |
| A 4 Point Shots | Number | |
| A 6 Point Shots | Number | |
| A Missed Shots | Number | |
| Start Location | Text | |
| Collecting Location | Text | |
| T 1 Point Shots | Number | |
| T 2 Point Shots | Number | |
| T 3 Point Shots | Number | |
| T 5 Point Shots | Number | |
| T Missed Shots | Number | |
| Attempted | Yes/No | |
| End Level | Number | |
| Driver Skill | Number | |
| Y | Number | |
| X | Number | |
| 3 Point Fouls | Number | |
| 20 Point Fouls | Number | |
| Yellow Card | Yes/No | |
| Red Card | Yes/No | |

Field Properties

| Property | Value |
|------------|---------------------|
| Field Size | Long Integer |
| New Values | Increment |
| Format | |
| Caption | |
| Indexed | Yes (No Duplicates) |
| Smart Tags | |
| Text Align | General |

A field name can be up to 64 characters long, including spaces. Press F3 for help on field names.

Using Combo Boxes for Error Checking and Auto Complete

You can have more control of what can and can't be entered into a box by changing the display control for fields to Combo Boxes.

1. Click on the starting position field.
2. Select the Lookup tab in the Field Properties box.

| General | Lookup |
|---------------------|------------|
| Field Size | 255 |
| Format | |
| Input Mask | |
| Caption | |
| Default Value | |
| Validation Rule | |
| Validation Text | |
| Required | No |
| Allow Zero Length | Yes |
| Indexed | No |
| Unicode Compression | No |
| IME Mode | No Control |
| IME Sentence Mode | None |
| Smart Tags | |

3. Change the Display Control field to Combo Box.

| | |
|-----------------|-----------|
| Display Control | Text Box |
| | Text Box |
| | List Box |
| | Combo Box |

4. There are several different options for Row Source Type.
 - a. **Table/Query** - Creates a list of values from a specified table. This is useful when there are many options or if options change frequently.
 - b. **Value List** - Creates a fixed list of values through manual input. This is optimal for small, static lists (e.g. Pit Scouting or Starting Location).
 - c. **Field List** - Field lists are much like Table/Query, but a field list uses field names from a selected table rather than the actual values.

| | |
|-----------------|-------------|
| Display Control | Combo Box |
| Row Source Type | Table/Query |
| Row Source | Table/Query |
| Bound Column | Value List |
| Column Count | Field List |
| Column Heads | No |
| Column Widths | |

5. For this case, use Value List since starting location options are fixed and limited.
6. Next, type all possible starting location options in the Row Source field.

| | | | | |
|-----------------|------------|---|-----------------|-----------------------------------|
| Display Control | Combo Box | ➔ | Display Control | Combo Box |
| Row Source Type | Value List | | Row Source Type | Value List |
| Row Source | | | Row Source | Front;Front-Left;Front-Right;Left |
| Bound Column | 1 | | Bound Column | 1 |
| Column Count | 1 | | Column Count | 1 |
| Column Heads | No | | Column Heads | No |
| Column Widths | | | Column Widths | |
| List Rows | 16 | | List Rows | 16 |

7. By doing this, scout input will autocomplete to the next word.
8. The next step involves error checking. Consider these two options
 - a. **Limit to List** - If changed to yes, user input is limited to values contained in that list. Entering a value other than those in the list will result in an error prompting the user to change their entry.
 - b. **Allow Value List Edits** - If changed to Yes, scouts will be able to edit the list of allowable options. If no is selected, scouts will not be able to change the list without editing the field on the back end.

| | |
|------------------------|--------------------|
| Display Control | Combo Box |
| Row Source Type | Value List |
| Row Source | Front;Front-Left;f |
| Bound Column | 1 |
| Column Count | 1 |
| Column Heads | No |
| Column Widths | |
| List Rows | 16 |
| List Width | Auto |
| Limit To List | No |
| Allow Multiple Values | No |
| Allow Value List Edits | No |
| List Items Edit Form | |
| Show Only Row Source | No |

This method can be used with any field that is limited to a set of options.

Combo Boxes 2

Now that you've used a Value List, try using the Table/Query Row Source option to make a combo box for Team Number.

1. First, create a new table and input all of the teams present at this regional.
 - a. Download the PDF of this tutorial for an Appendix containing the raw data for Team Number.

| ID | Team Numb | Click to Add |
|----|-----------|--------------|
| 1 | 5021 | |
| 2 | 5030 | |
| 3 | 5036 | |
| 4 | 5064 | |
| 5 | 5068 | |
| 6 | 5079 | |
| 7 | 5083 | |
| 8 | 5088 | |
| 9 | 5106 | |
| 10 | 5116 | |
| 11 | 5138 | |
| 12 | 5175 | |
| 13 | 5176 | |
| 14 | 5191 | |
| 15 | 5221 | |
| 16 | 5223 | |
| 17 | 5264 | |
| 18 | 5276 | |
| 19 | 5277 | |
| 20 | 5286 | |
| 21 | 5325 | |

2. Return to design view of match data to turn the Team Number field into a combo box.
3. Set the Row Source Type to Table/Query.

| General | | Lookup | |
|-----------------|--|-------------|--|
| Display Control | | Combo Box | |
| Row Source Type | | Table/Query | |
| Row Source | | | |
| Bound Column | | 1 | |
| Column Count | | 1 | |
| Column Heads | | No | |
| Column Widths | | | |
| List Rows | | 16 | |
| List Width | | Auto | |

4. Select the table where team numbers are located from the Row Source drop-down list.

| | |
|------------------------|-------------------|
| Display Control | Combo Box |
| Row Source Type | Table/Query |
| Row Source | |
| Bound Column | Match Data |
| Column Count | Pit Scouting Data |
| Column Heads | Schedule |
| Column Widths | Teams |
| List Rows | 16 |
| List Width | Auto |
| Limit To List | No |
| Allow Multiple Values | No |
| Allow Value List Edits | No |
| List Items Edit Form | |
| Show Only Row Source V | No |

5. Now, a team number combo box will be populated by the contents of that table. For this type of combination box, it's recommended to turn on 'Limit to List' while keeping 'Allow Value List Edits' off.

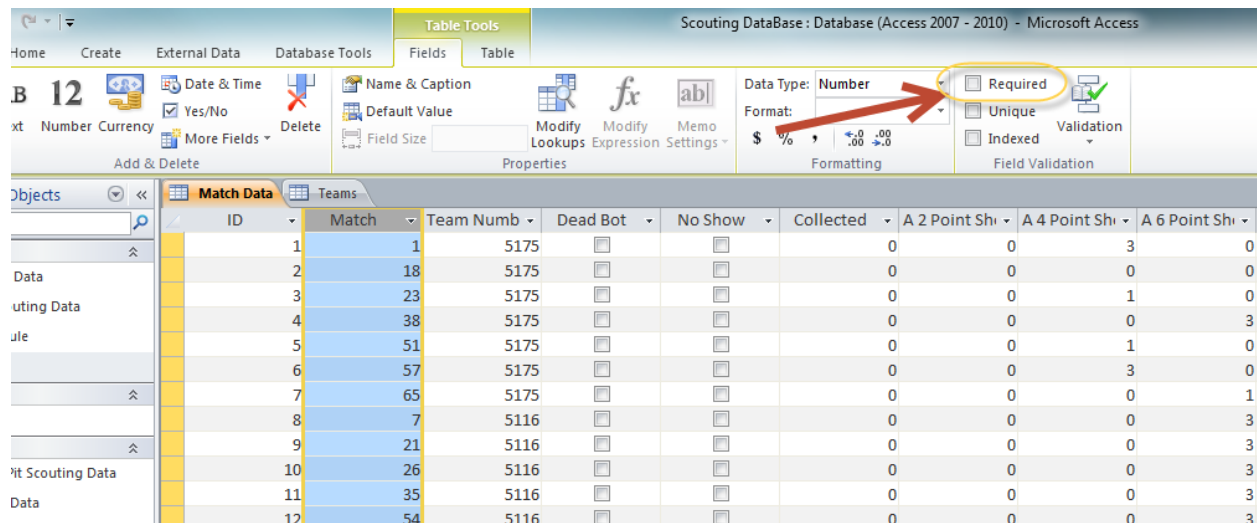
| | |
|------------------------|--------------------|
| Display Control | Combo Box |
| Row Source Type | Value List |
| Row Source | Front;Front-Left;f |
| Bound Column | 1 |
| Column Count | 1 |
| Column Heads | No |
| Column Widths | |
| List Rows | 16 |
| List Width | Auto |
| Limit To List | No |
| Allow Multiple Values | No |
| Allow Value List Edits | No |
| List Items Edit Form | |
| Show Only Row Source V | No |

Other Data Checking Tips

Here are a few other formatting options to improve your data.

Required Fields

1. By checking the box marked 'Required' in the Field Validation section of the Fields tab, Access will prevent record entry when these required fields are left blank. To minimize error messages during data entry, limit using this required field setting to only the most important fields (e.g. Match and Team Number).

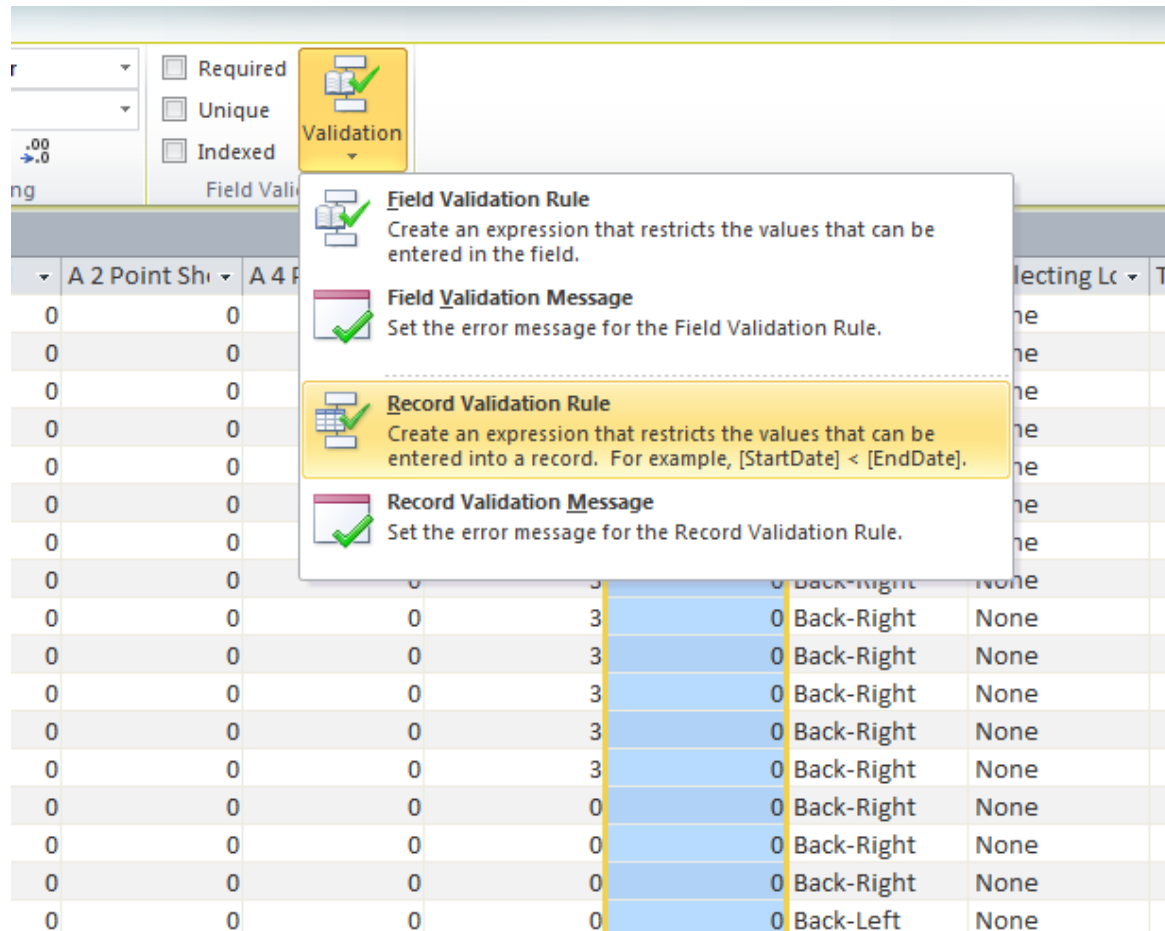


The screenshot shows the Microsoft Access interface for a database named 'Scouting DataBase'. The 'Table Tools' ribbon is active, with the 'Fields' tab selected. In the 'Field Validation' section, the 'Required' checkbox is checked and highlighted with a red circle and an arrow. Below the ribbon, the 'Match Data' table is displayed with the following data:

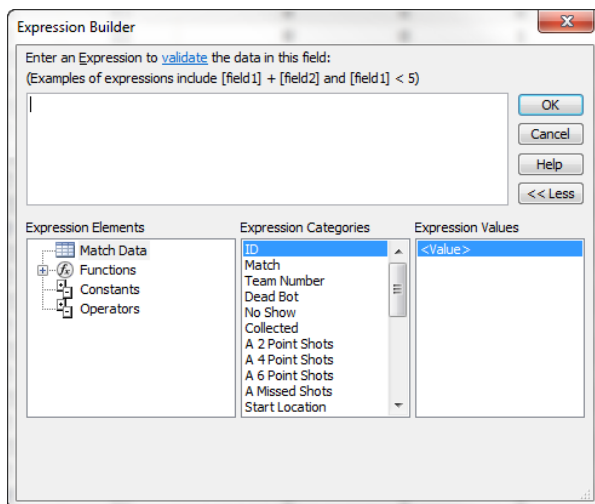
| ID | Match | Team Num | Dead Bot | No Show | Collected | A 2 Point Sh | A 4 Point Sh | A 6 Point Sh |
|----|-------|----------|--------------------------|--------------------------|-----------|--------------|--------------|--------------|
| 1 | 1 | 5175 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 3 | 0 |
| 2 | 18 | 5175 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 0 |
| 3 | 23 | 5175 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 1 | 0 |
| 4 | 38 | 5175 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 3 |
| 5 | 51 | 5175 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 1 | 0 |
| 6 | 57 | 5175 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 3 | 0 |
| 7 | 65 | 5175 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 1 |
| 8 | 7 | 5116 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 3 |
| 9 | 21 | 5116 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 3 |
| 10 | 26 | 5116 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 3 |
| 11 | 35 | 5116 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 3 |
| 12 | 54 | 5116 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 3 |

Field Validation Rules

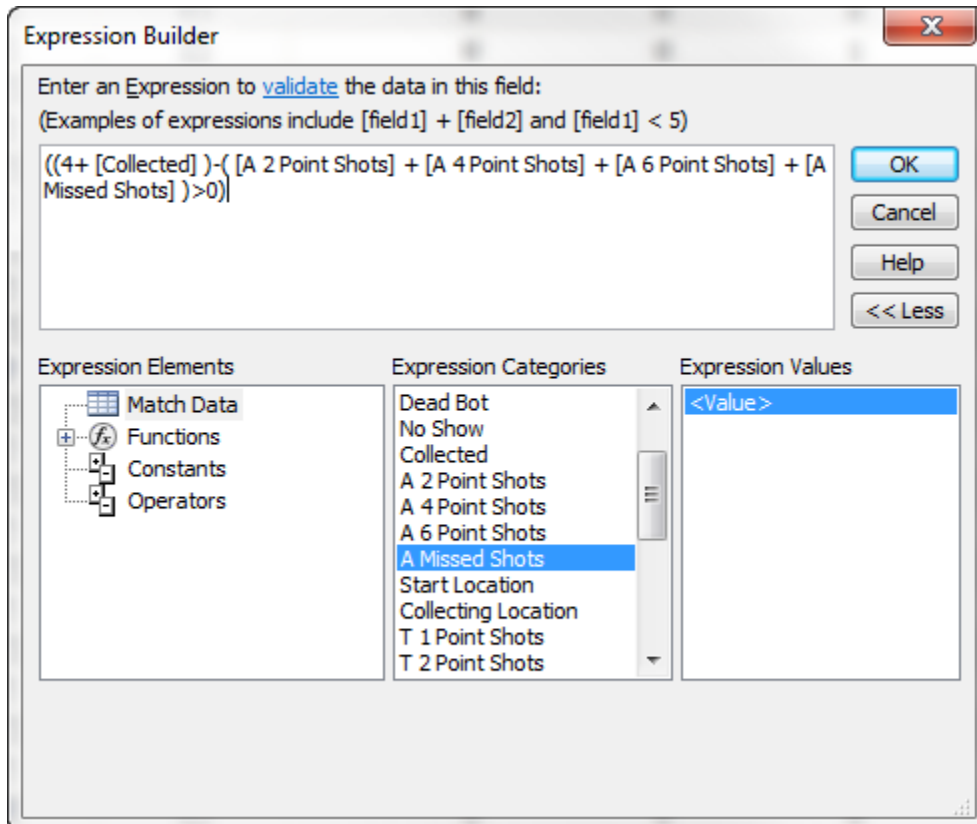
1. To set a field validation, select "Record Validation Rule" from the Validation drop-down menu in the Fields tab.



2. This will open the Expression Builder window.



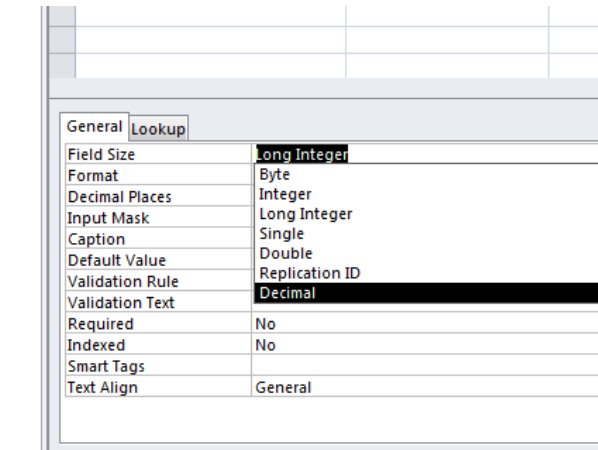
3. In the Expression field, enter a logic test for impossible values.
 - a. For instance, in this example, teams were only allowed 4 Frisbees at the start. By creating this validation rule, any entry showing more Frisbees than the starting amount plus those collected during the match will result in an error.
 - b. Logic tests for validation rules are written exactly like inequalities in math. Any entry that breaks this rule will raise an error.



Setting Fields to Allow Decimals

This function is useful for fields specifying ratings or coordinates (Driver skill, X, or Y)

1. First, switch to design view
2. Under the General tab, change the Field Size option to Decimal.



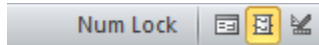
3. Once Field Size is changed to Decimal, enter the desired number of decimal places in the Scale and Decimal Places fields.

| Property | Value |
|-----------------|---------|
| Field Size | Decimal |
| Format | |
| Precision | 18 |
| Scale | 0 |
| Decimal Places | 0 |
| Input Mask | |
| Caption | |
| Default Value | 0 |
| Validation Rule | |
| Validation Text | |
| Required | No |
| Indexed | No |
| Smart Tags | |
| Text Align | General |

Adding Shortcuts to the Entry Form

Entry form shortcuts save time during data entry.

1. Open a form and switch to layout view in the bottom right corner.



2. Select the label of the field for which you would like to create a shortcut.

| | |
|----------------|------------------------------------|
| End Level | <input type="text" value="1"/> |
| Driver Skill | <input type="text" value="3"/> |
| Y | <input type="text" value="6"/> |
| X | <input type="text" value="1.000"/> |
| 3 Point Fouls | <input type="text" value="0"/> |
| 20 Point Fouls | <input type="text" value="0"/> |

3. Input an ampersand (&) in front of the word selected.

| | |
|----------------|------------------------------------|
| Attempted | <input type="checkbox"/> |
| End Level | <input type="text" value="1"/> |
| Driver Skill | <input type="text" value="3"/> |
| &Y | <input type="text" value="6"/> |
| X | <input type="text" value="1.000"/> |
| 3 Point Fouls | <input type="text" value="0"/> |
| 20 Point Fouls | <input type="text" value="0"/> |
| Yellow Card | <input type="checkbox"/> |
| Red Card | <input type="checkbox"/> |

4. The first letter of the label should now be underlined which indicates a shortcut.

| | |
|-----------------|------------------------------------|
| End Level | <input type="text" value="1"/> |
| Driver Skill | <input type="text" value="3"/> |
| <u>Y</u> | <input type="text" value="6"/> |
| X | <input type="text" value="1.000"/> |
| 3 Point Fouls | <input type="text" value="0"/> |

5. Now by pressing Alt+[underlined letter] while entering data, the cursor will jump to that field.
Creating shortcuts on the last field is a great way to accelerate entry of teams with little match data.

APPENDIX

Below is the team number data used for this tutorial. Copy and paste team numbers into access to complete the Combo Boxes 2 exercises.

Team Numbers:

| | |
|------|------|
| 5021 | 5508 |
| 5030 | 5533 |
| 5036 | 5544 |
| 5064 | 5545 |
| 5068 | 5546 |
| 5079 | 5560 |
| 5083 | 5570 |
| 5088 | 5571 |
| 5106 | 5608 |
| 5116 | 5622 |
| 5138 | 5636 |
| 5175 | 5645 |
| 5176 | 5648 |
| 5191 | 5663 |
| 5221 | 5664 |
| 5223 | 5726 |
| 5264 | 5729 |
| 5276 | 5809 |
| 5277 | 5810 |
| 5286 | 5817 |
| 5325 | 5828 |
| 5331 | 5832 |
| 5332 | 5840 |
| 5333 | 5873 |
| 5354 | 5884 |
| 5371 | 5903 |
| 5400 | 5908 |
| 5424 | 5921 |
| 5436 | 5937 |
| 5443 | 5938 |
| 5447 | 5954 |
| 5485 | 5986 |