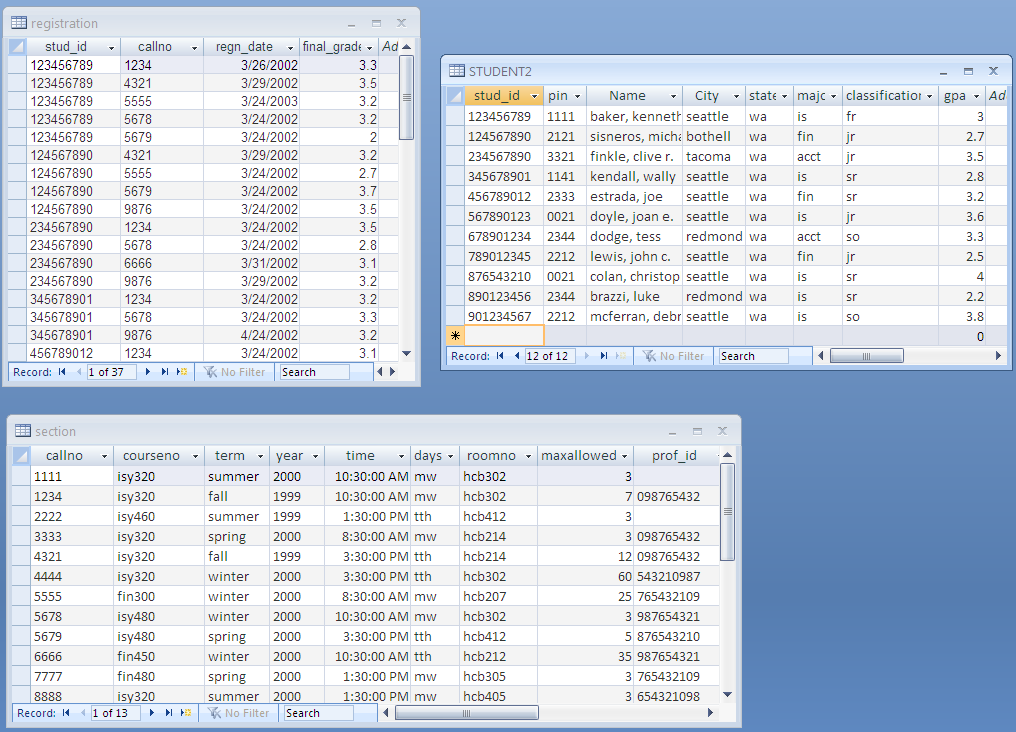
MS Access 2013 Outline

# Databases

# Tables

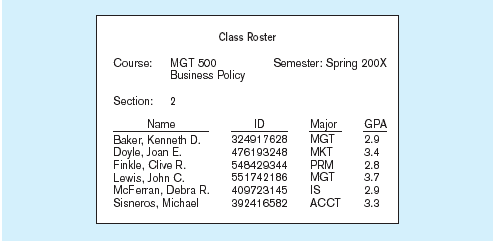


*Data vs. Information*

*Spreadsheet vs. Database*

*Relational Database Management Systems (RDBMS)*

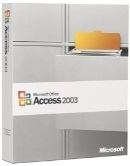
* DBMS
  + Software that permits an organization to centralize data, manage it efficiently, and have shared access to stored data

* Database
* Collection of data centrally organized in storage to serve many applications efficiently
* Relational Model
* Database is a collection of related **tables**
* Tables consist of related **records**
* Records consist of related **fields**; represents all information about one object/thing
* **Field** is a characteristic of an object that is of interest
  + **Primary Key** field uniquely identifies each record in a table

**Database**



**User**

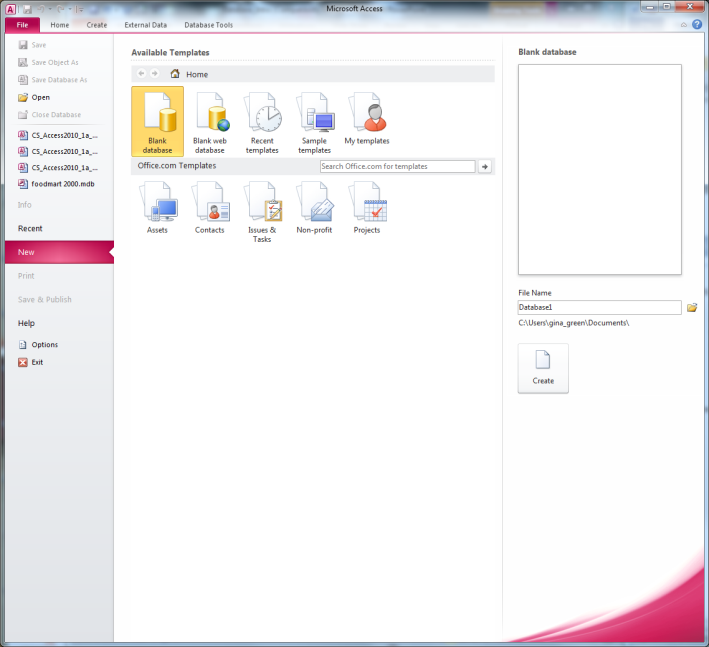


**Employee DB  
NFL DB  
Orders DB, Registration DB, …**

**Student Registration DB  
etc…**

* + Atomic vs. Composite/Concatenated
* **Example: NFL Database**
  + What objects would we need to collect information about?
  + What data would we want to collect and/or analyze about each object?
  + Are any of the objects related?

*MS Access*

* Desktop RDBMS
* Graphical User Interface
* Part of Office suite
* Can “access” data in other RDBMS’s:
  + MS SQL Server

Click here to create the db

Previously-opened db's will be listed here

Click on folder; Save db to mis1305\_

access folder

Change file name to mis1305.accdb

* + Oracle
  + MySQL …
* Objects
  + Tables
  + Forms
  + Queries
  + Reports

*Creating a Database*

* Accdb vs Mdb
* Compact and Repair

*Creating Tables (Design View)*

* Name

* Fields with Data Types, Lengths
* Text

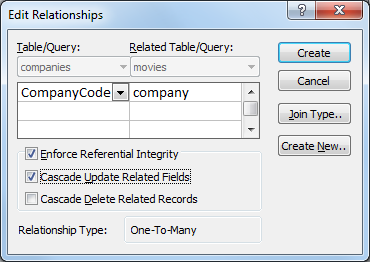
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Title** | **Type** | **Rating** | **Stars** | **MovieID** | **Co.** | **Year** |
| The Untouchables | Action | PG13 | 3.5 | 1011 | MGM | 1991 |
| Far and Away | Drama | PG | 3 | 1212 | PMT | 1991 |
| Lion King | Family | G | 2.75 | 1411 | DIS | 1993 |
| Twister | Action | PG | 3.5 | 2321 | PMT | 1995 |

* Memo
* Number
* Date/Time
* Currency
* AutoNumber
* Yes/No
* OLE Object

*Maintaining Tables (Datasheet view)*

* Enter data records
* Deleting rows of data
* Filter data
* Sort data
* Formatting table
* Adjust column widths
  + Drag
  + Specify Field Width

*Relating Tables (Table Tools Design or Tables tab)*

* Shows that objects have something in common
* Allows us to examine data spread across multiple tables
* Requires a Primary Key (PK) and Foreign Key (FK)
* **Example: Movies and Companies**
  + Ensure related tables closed
  + Create new table: Companies
    - Create tab | Tables group | Table button
  + Fields: CompanyCode; Name; DateStarted; CEO
  + Enter data for DIS, MGM, and PMT
  + Relate Movies table to Companies table
    - Close tables first
    - Database Tools | Relationships group | Relationships button
    - Drag common column from one table to the related table
    - Set PK and FK appropriately
      * CompanyCode = PK in the Table/Query
      * Company = FK in the Related Table/Query

*Printing Tables*

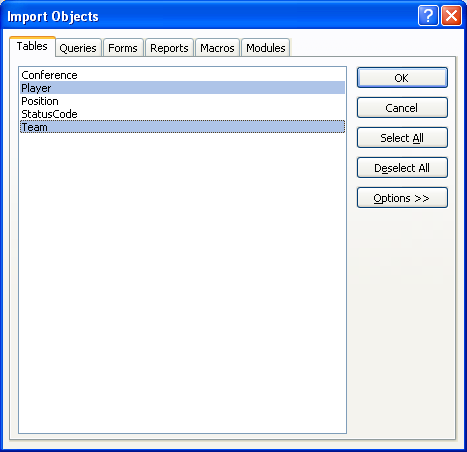
* Two options
  + Open table in datasheet view; File tab | Print | Print (preview)
  + Open table in datasheet view; Select All button | Copy | Paste into Word

*Importing Tables*

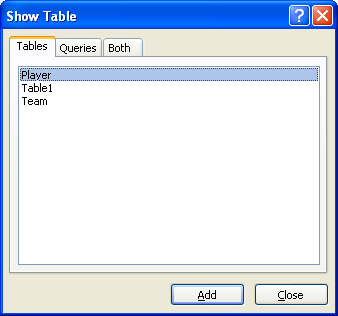
* Can use data that resides outside of Access from within Access
* Import
* Link
* External Data tab | Import & Link group | click appropriate button corresponding to format of source data

MS Access 2013 Outline

# Queries

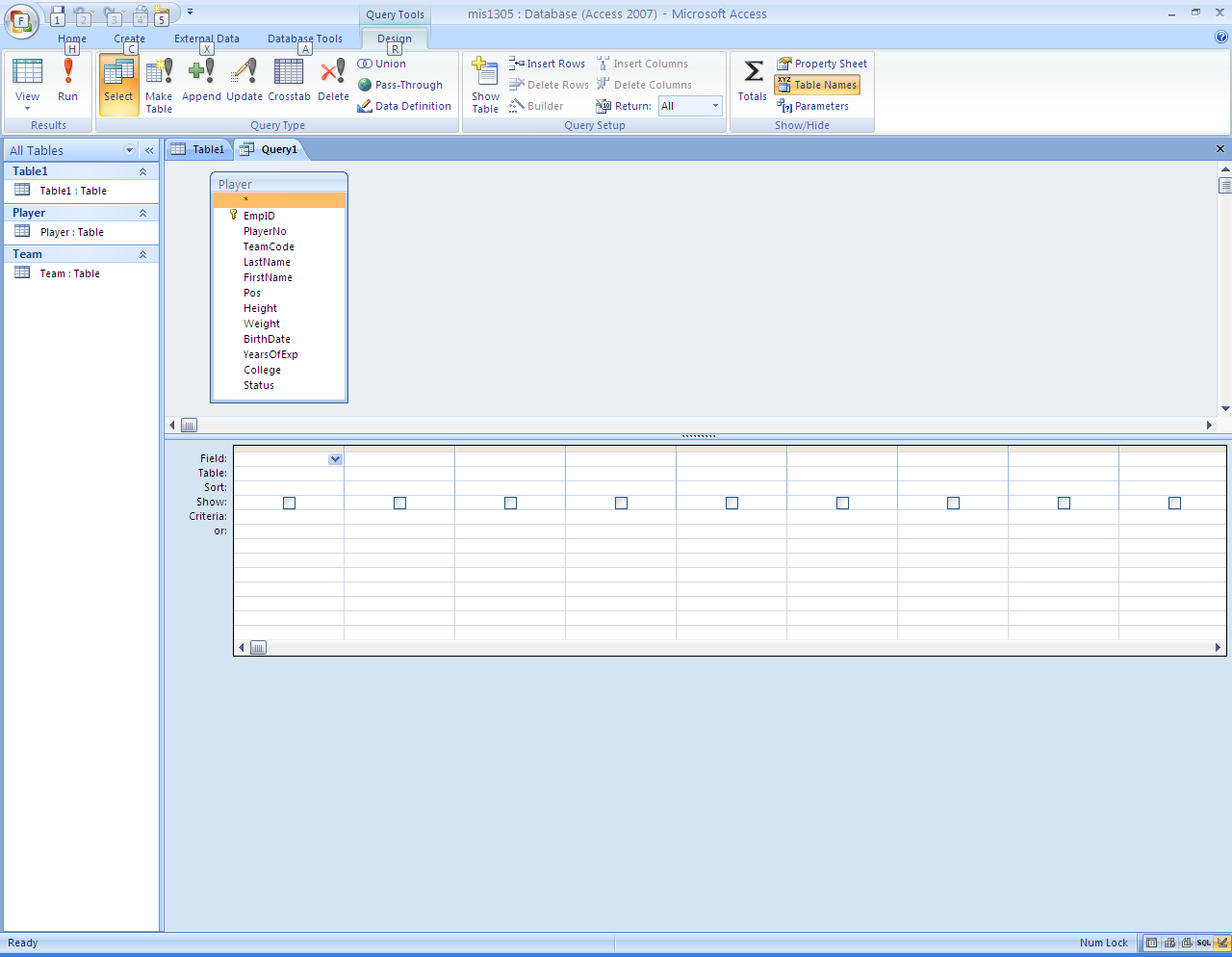


*Import an existing table into our database*

* Open your existing MIS1305 database
* Click External data tab | Import & Link group | Access icon
* Browse to the nfl(2009).accdb database you saved to the desktop; ensure Import tables… is selected; click OK
* Select the “Player” and “Team” tables (click 1st table then hold the Ctrl key to highlight 2nd table); OK; Close

*Create a new Query*

* Start in Design View
* Query Design Grid
* Steps

1. Select the **Tables** involved
2. Select the **Fields**
3. Specify which **Records** you want
4. Specify **Sort** options, if any
5. **Hide** fields that you don’t want to see in the result
6. **Run** (execute) the Query; puts you in Datasheet View
7. **Save** the query

*Operators*

* Typical Mathematical Operators: = > < >= <= <>
* IN 🡪
* LIKE 🡪
* BETWEEN 🡪
* AND 🡪
* OR 🡪
* IS NULL 🡪
* NOT 🡪

*Customize Queries*

* Parameter queries
* Rename query columns
* Calculated Fields, Expressions
* Top Values query
* Unique Values query (**NOTE: SAM will require setting Unique Values property**)

*Sorting Query Results*

*Text in Queries*

* Use single OR double quotes (**NOTE: SAM will require double quotes**)
* e.g., =’mnv’ (or =”mnv”)

*Dates in Queries*

* Format is #mm/dd/yyyy#

*Editing the Query*

* Move fields
* Delete fields
* Rename the query

*Totals Button (Σ)*

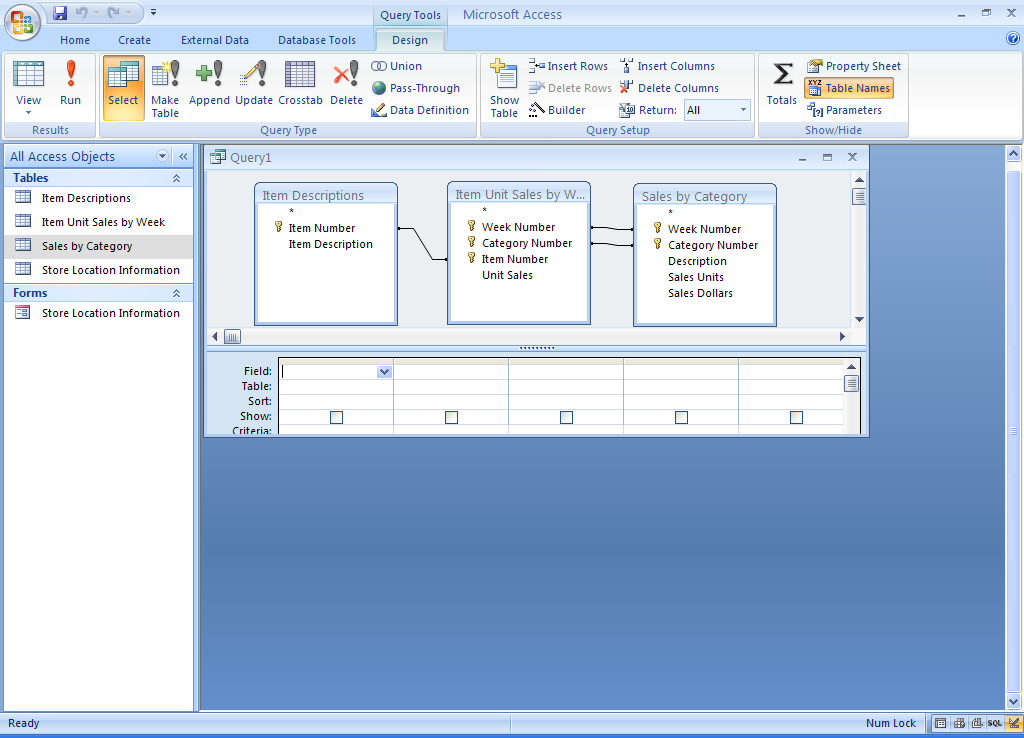
* Total line:
  + Aggregate Functions
    - SUM, AVG, MIN, MAX, COUNT 🡪 works the same as in excel
  + Group By

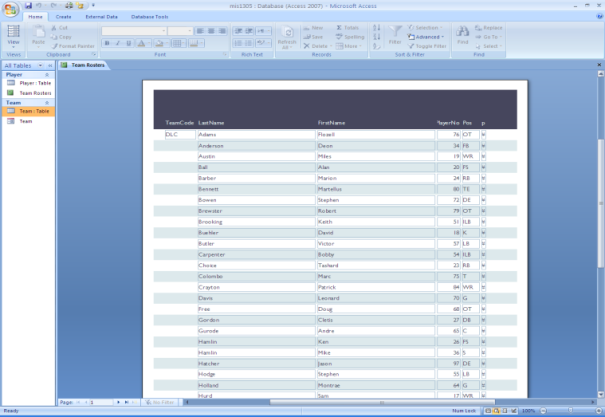
*Crosstab* (like Pivot Table)

* Row heading (can have multiple)
* Column heading (can only have one)
* Value (can only have one)

*Multi-Table Queries*

* Data for query spread across two or more tables
* Tables typically related
* Ensure related tables “connected” on common fields
* Can set “join properties” to modify records that are displayed

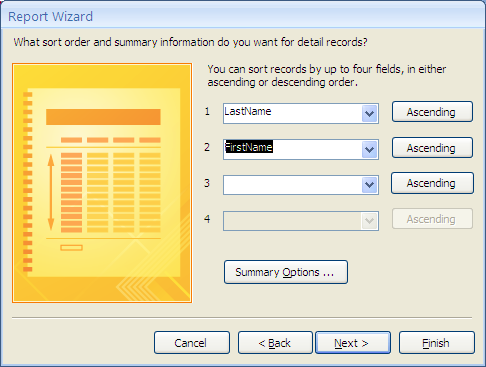
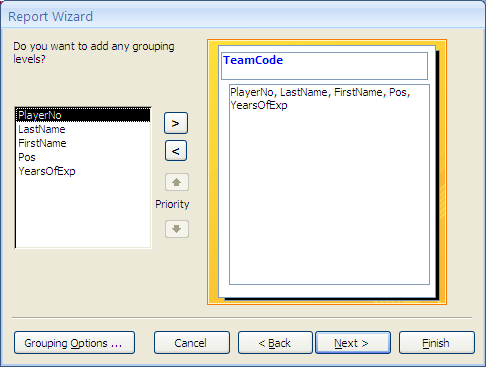
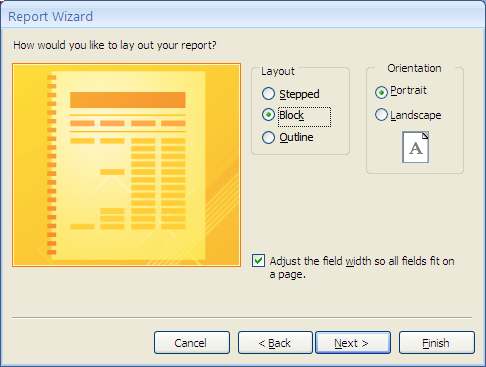


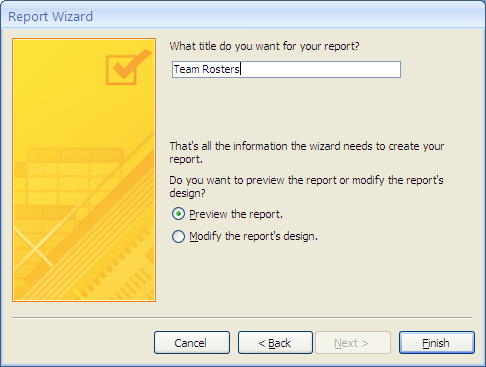
 MS Access 2013 Outline

# Reports

## Create a Report

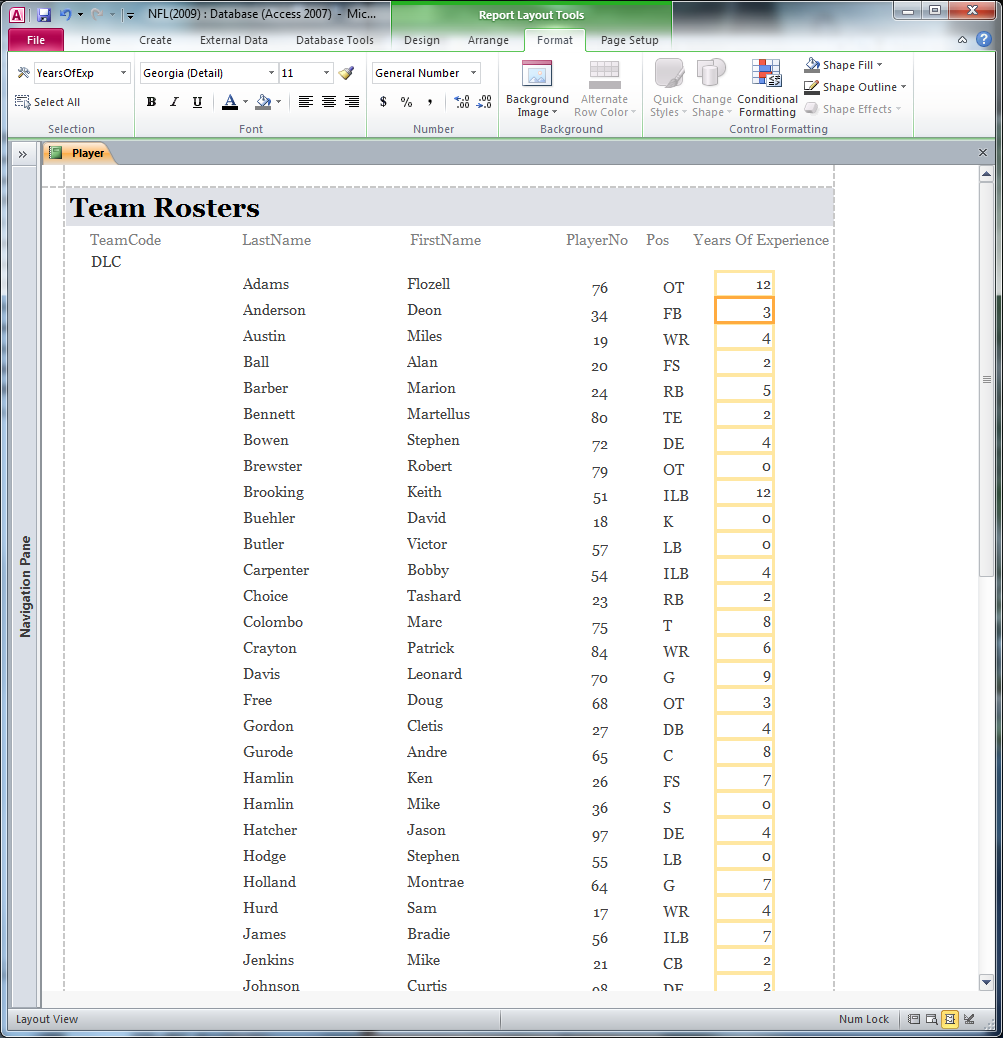
* Create Tab | Report Wizard and select the following:
  + Table Name or Query
  + Fields
  + Grouping
  + Sorting
  + Layout style
  + Orientation

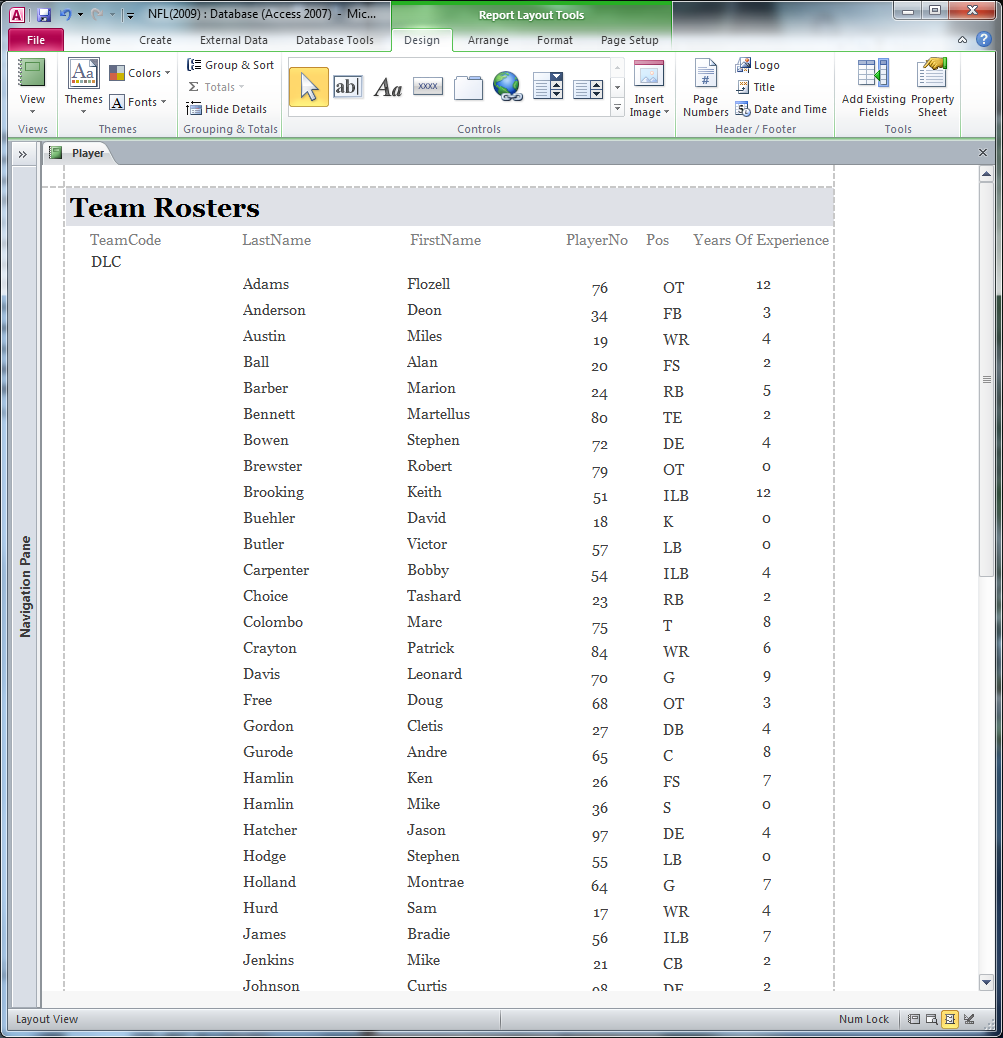




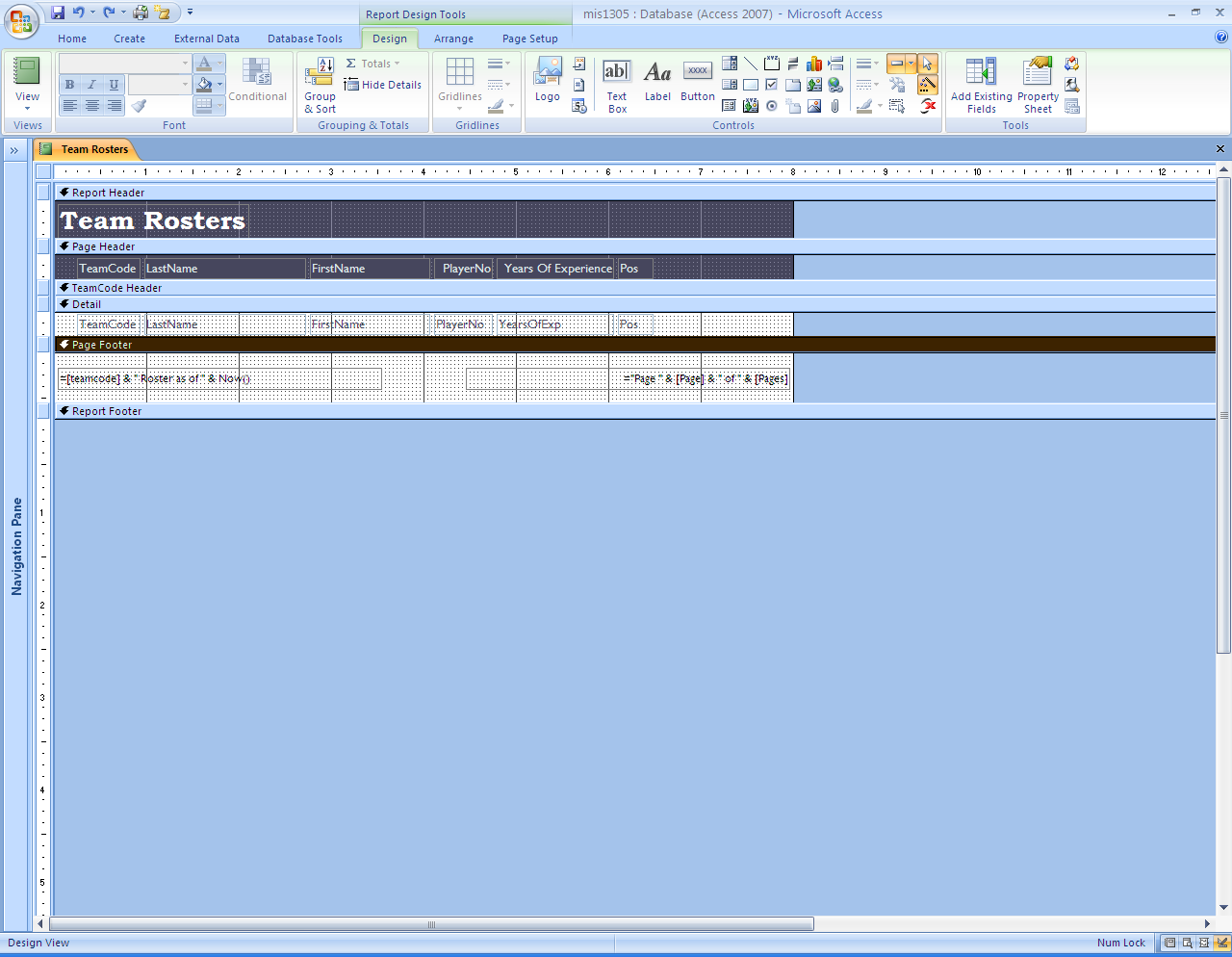
## Views

* Layout View





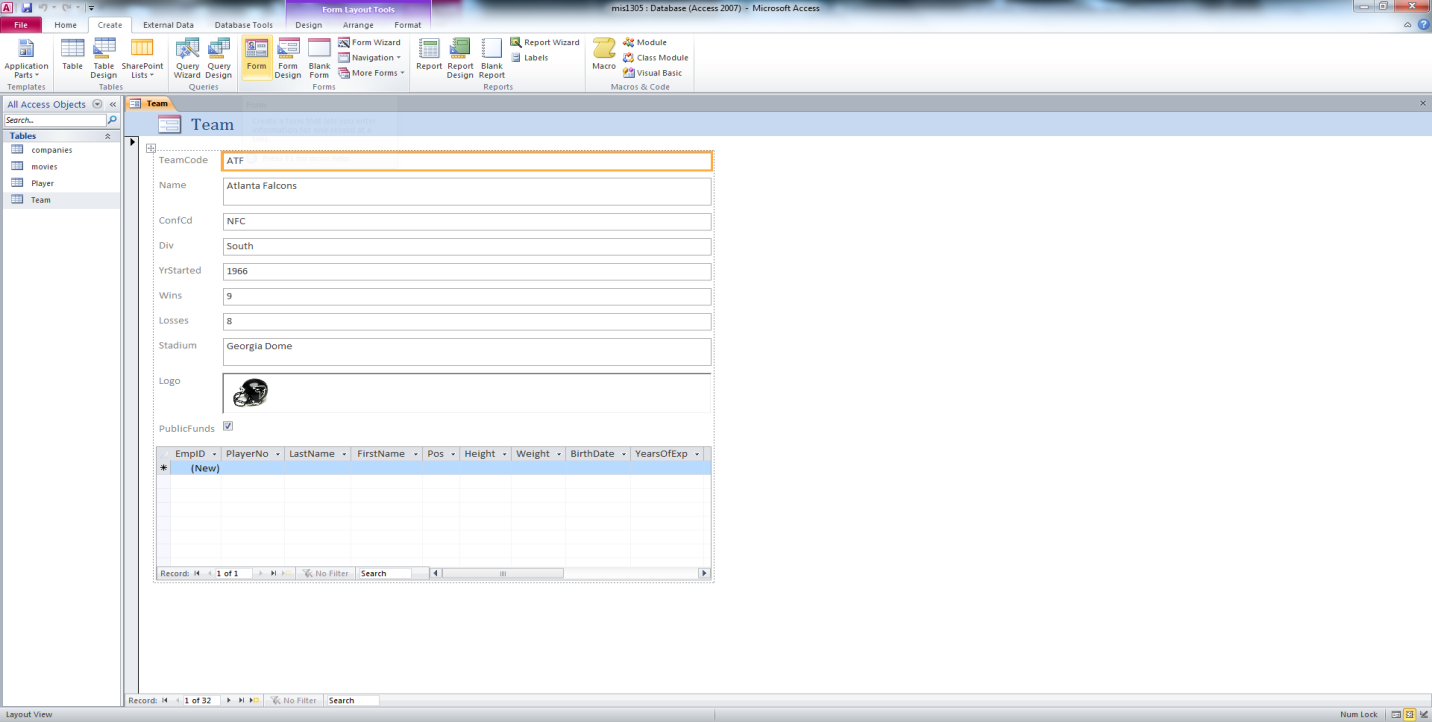
* Design View



* Report View

MS Access 2013 Outline

# Forms

*Forms*

* Graphical representation of table(s)
* Maintain data in table

*Create a new Form (Form button)*

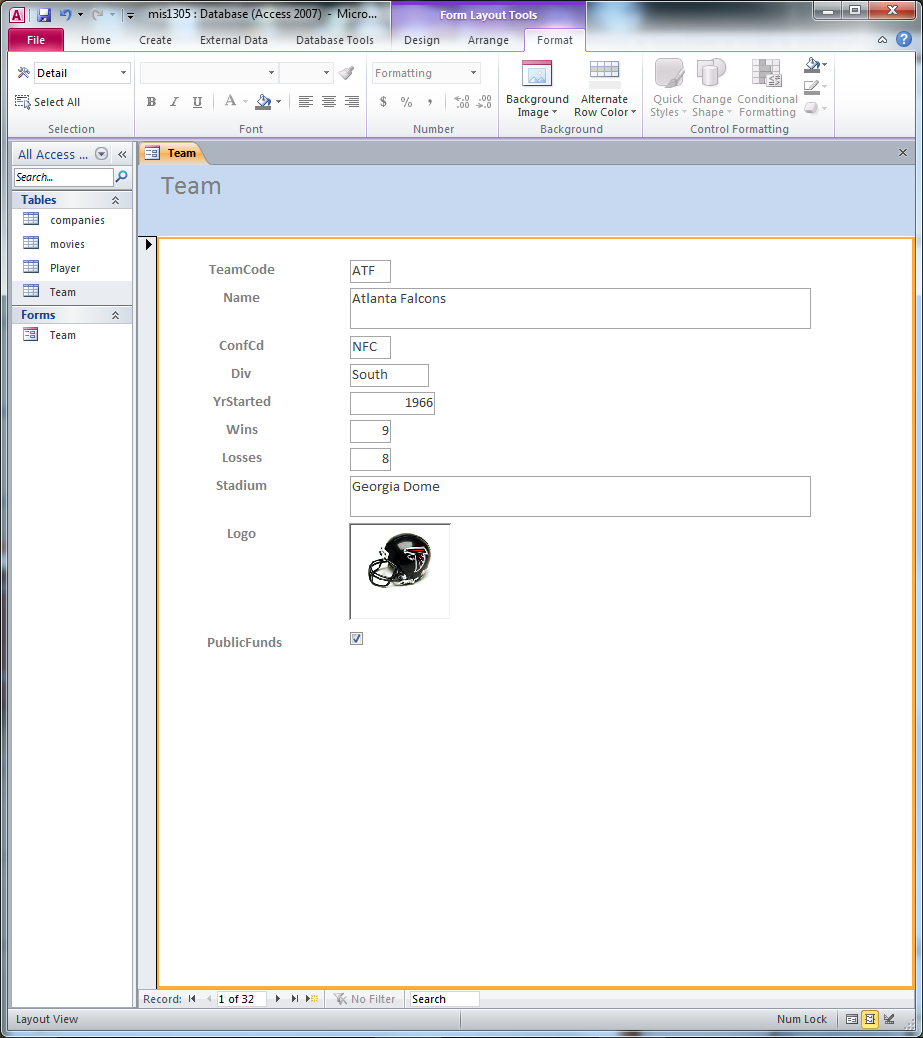
* Ensure desired table is highlighted
  + Eg, Team
* Create tab | Forms group | Form button
* Creates Stacked Design of **fixed textbox widths** with all fields in table; controls “glued” together
* If table has a linked/related “child” table, it is shown by default
  + Delete the child table by clicking on the child table, then hitting the Delete key
* Can use form as-is, OR *change the layout and/or design*

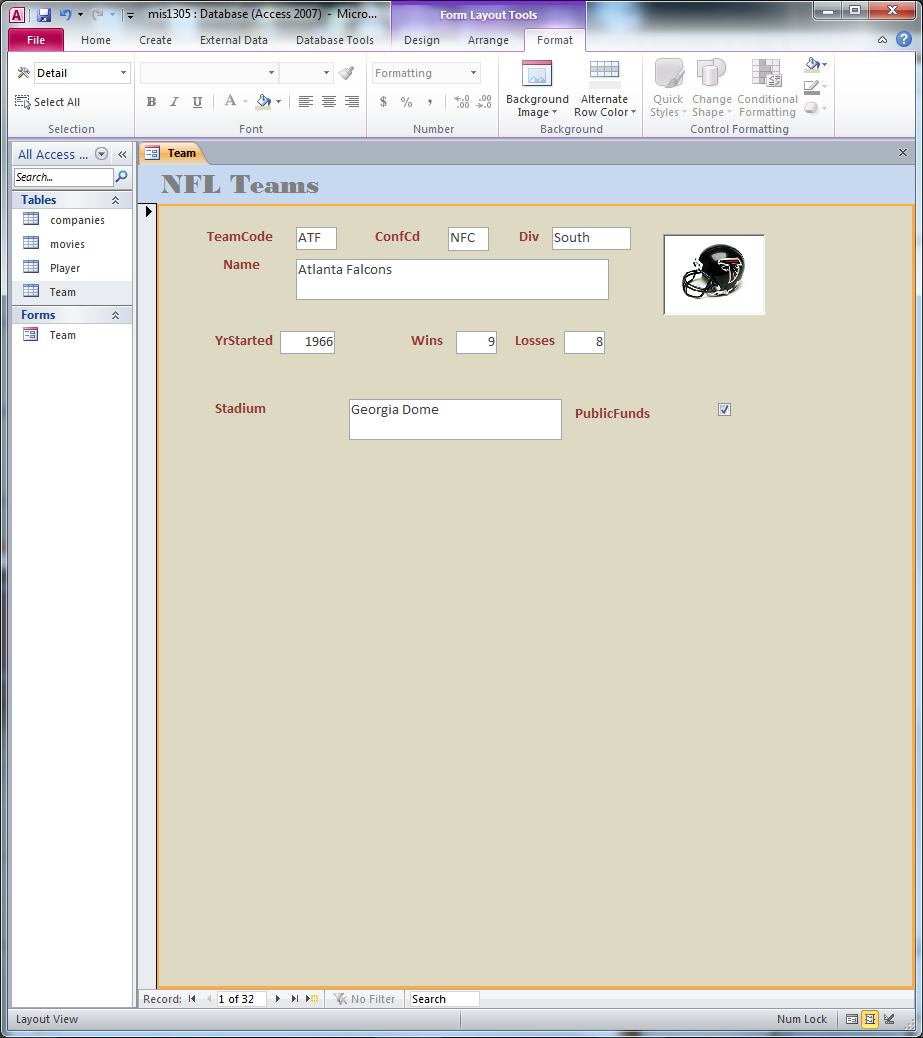
*Create a new Form (Form Wizard)*

* Ensure desired table is highlighted
  + Eg, Team
* Create tab | Forms group | Form Wizard button
* Creates Stacked Design of **varying textbox widths** with all fields in table; controls NOT “glued” together
* Linked/related “child” tables not shown
* Can create form from table(s) or query(s)
* Can use form as-is, OR *change the layout and/or design*

*Form Layout View*

* Change the arrangement and appearance of labels and fields
* Form Layout Tools contextual tabs | Format tab

 *Controls*

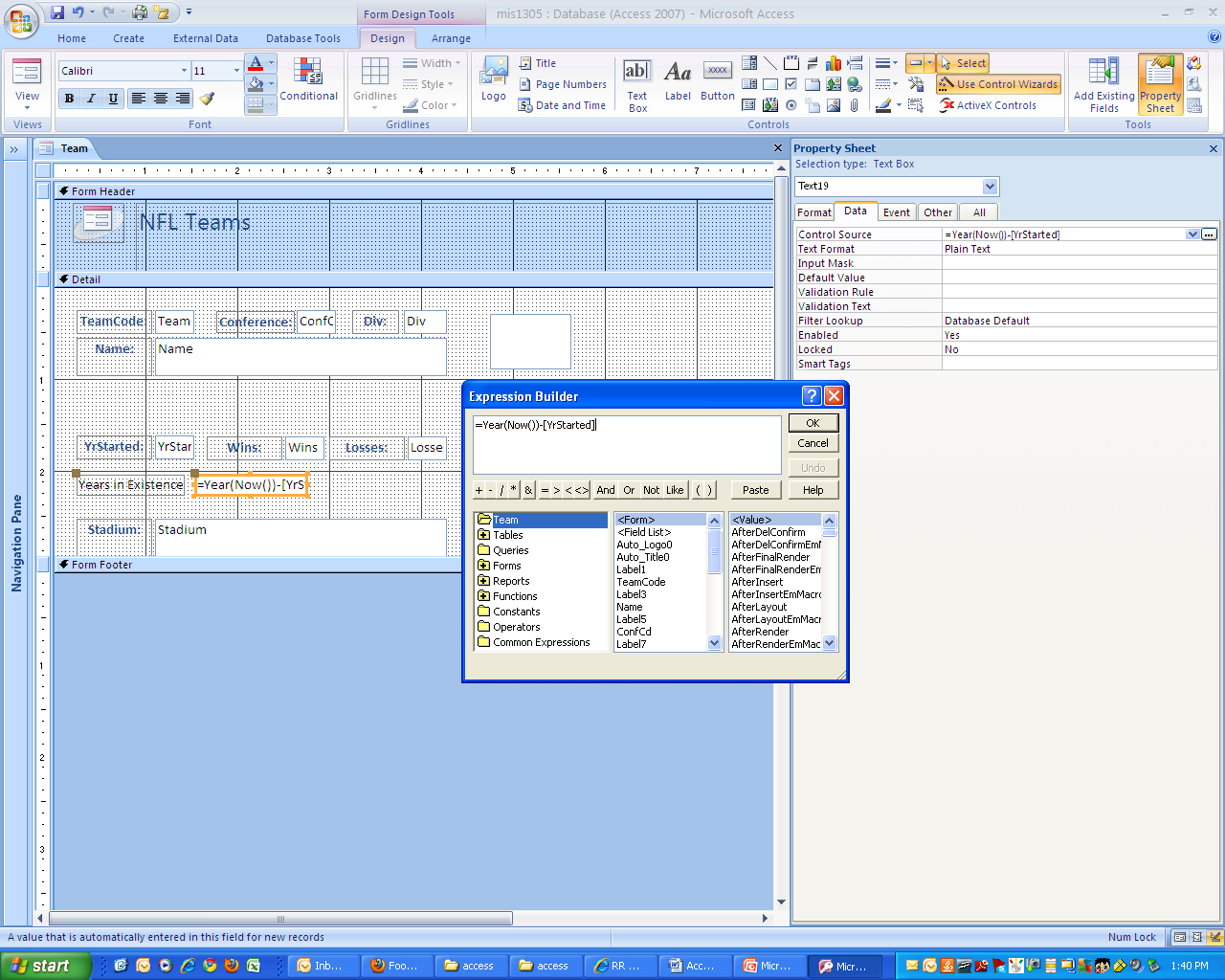
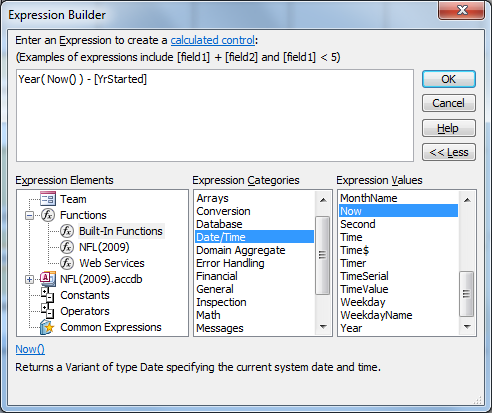
* Format tab
* Controls = Fields
* Can change controls together by selecting desired controls
  + Example: bold and center all labels
* Resizing/Moving Fields
  + Example: Resize Stadium, Logo fields
  + Example: Move ConfCd, Div, Wins, Losses fields
  + Example: Remove Logo label; move logo field
* Changing Colors, Fonts
  + Select the entire form; change Fill/Back Color
  + Select the Form’s title; change Font Style; change title to NFL Teams
  + Select all Labels; change Font Color to dark red

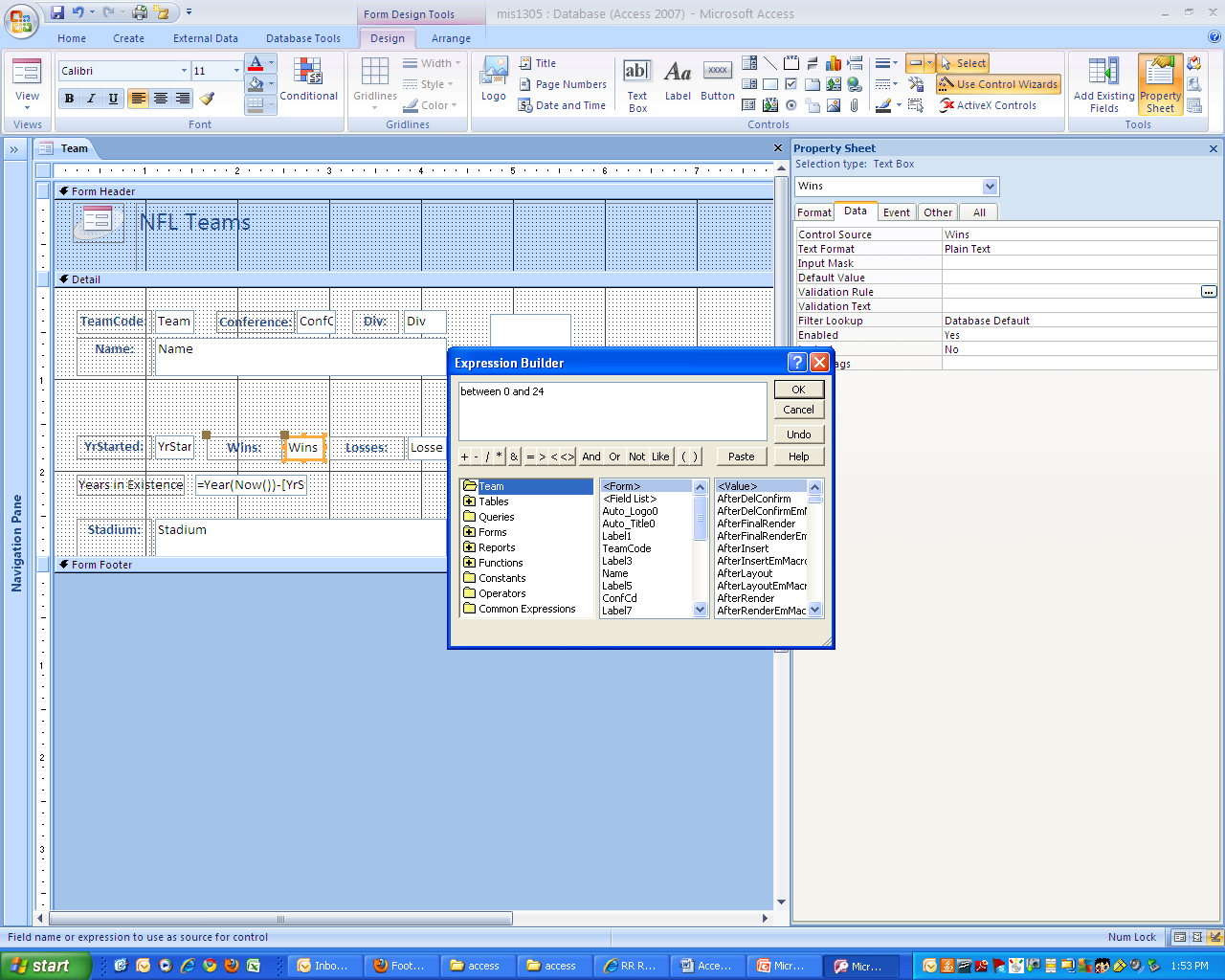
*Form Design View*

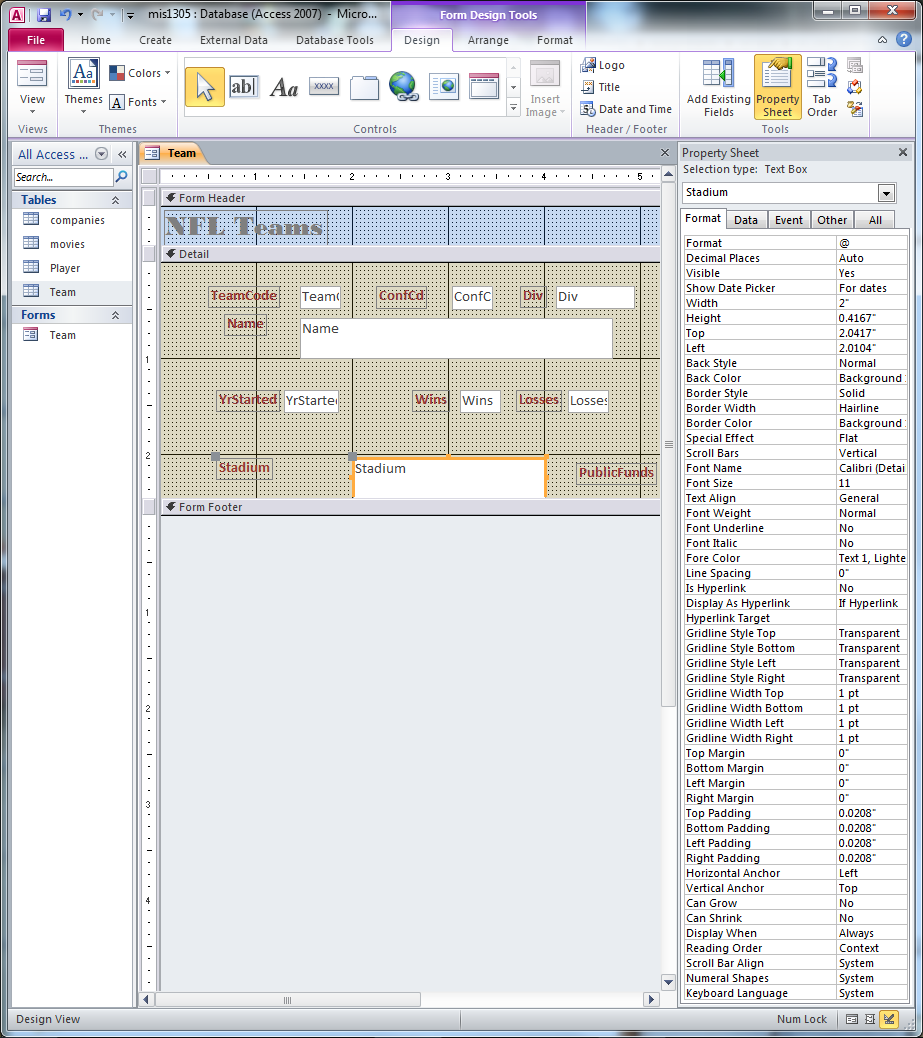
* Format tab | View icon | Design view
* Can remove control layout
* Can change what gets displayed/entered on a form
* Can add controls (e.g., additional fields, buttons, …) to a form
* Property Sheet: Can further describe, validate fields. For example, can limit values entered into fields

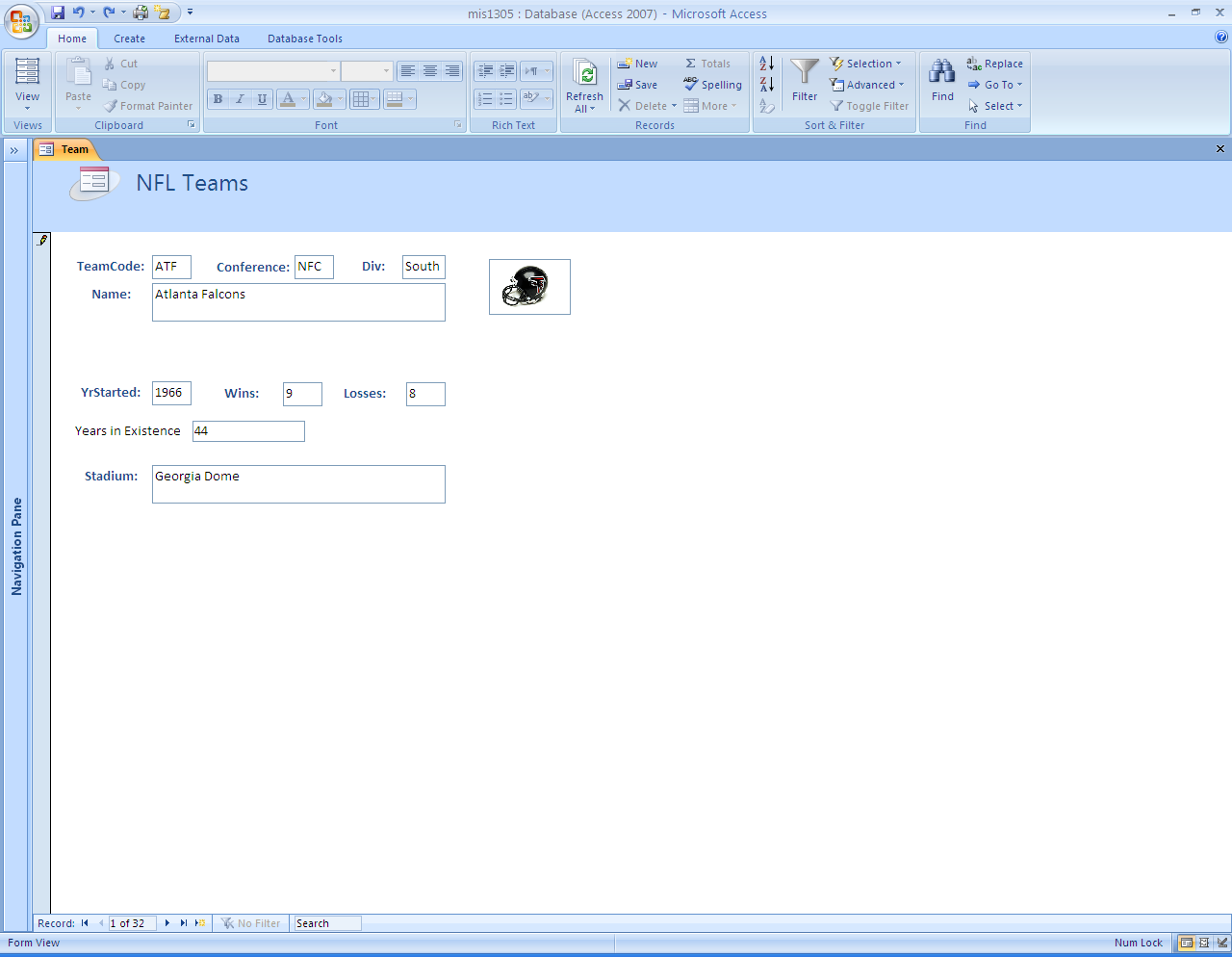
(NOTE: IN operator is not supported)

* + Example: Add a new, calculated control labeled “Years in Existence”



* + Example: limit values in Wins field to values between 0 and 24.
  + Example: Set width of Stadium text box to 2 inches.

*Form View*

* User’s view
* Add, Change, Delete records
* Example: add a new record, change some fields, then remove (ie, delete) the record