

Information engineering

CREATING TABLES IN ACCESS

B HOLLAND

A solid orange horizontal bar spanning the width of the slide at the bottom.

Understanding the Physical Database

- ❑ Looking at the differences between tables, records, fields and values.
- ❑ Learn why multiple tables are required in a database.
- ❑ Looking at the Access database objects.
- ❑ Thinking about a design approach.
- ❑ Designing the tables and their relationships.
- ❑ Designing Input forms and Menus.
- ❑ Designing Reports.
- ❑ Looking at Queries and SQL.
- ❑ Understanding Macros.

Introduction

- ❑ The fundamental concept underlying the Access database is that the data is stored in tables.
- ❑ Tables are comprised of rows and columns much like an Excel spreadsheet.
- ❑ Each column representing a field and each row a record or record of an entity.
- ❑ We could think of all the tables as a reference to the entities that we included in our design.

Tables

- ❑ An Access table is just a container for raw information (we call it DATA).
- ❑ Each table should contain only the information relating to a single entity.
- ❑ How we build the Access objects around our tables will provide the requirement for the overall DBMS.
- ❑ WHY DO WE BUILD MULTIPLE TABLES ?

Some design considerations

Overall systems Design

- How do we meet the End Users needs.
- What design methods could we use.

Report Design

- Although this may seem odd users are often more interested in output.
- They may want to print an invoice, a register, a sales audit etc.

Data design

- How are you going to store the data, the format and type.
- Field definitions will effect how the user will be able to see their data.

Table Design

- What fields must be input into what table
- Do you require all those fields? Or can some user requirements be calculated

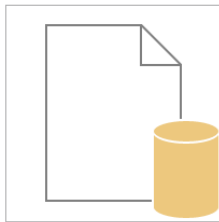
Form Design

- How will the end user finally enter and use the DBMS.

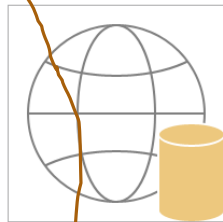
New

Search for online templates

Suggested searches: Database Business Logs Industry Lists Personal Inventories



Blank desktop database



Custom web app



Updated: Asset tracking



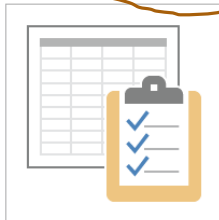
Updated: Contacts



Updated: Students



Updated: Event management



Updated: Task management



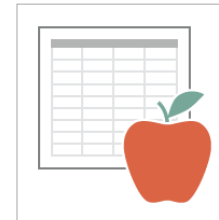
Product inventory



Services



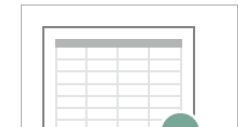
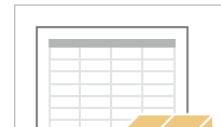
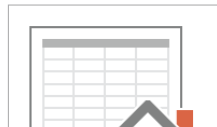
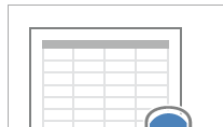
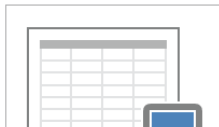
Price comparison



Nutrition tracking



Charitable contributions



Initial Screen Cont...

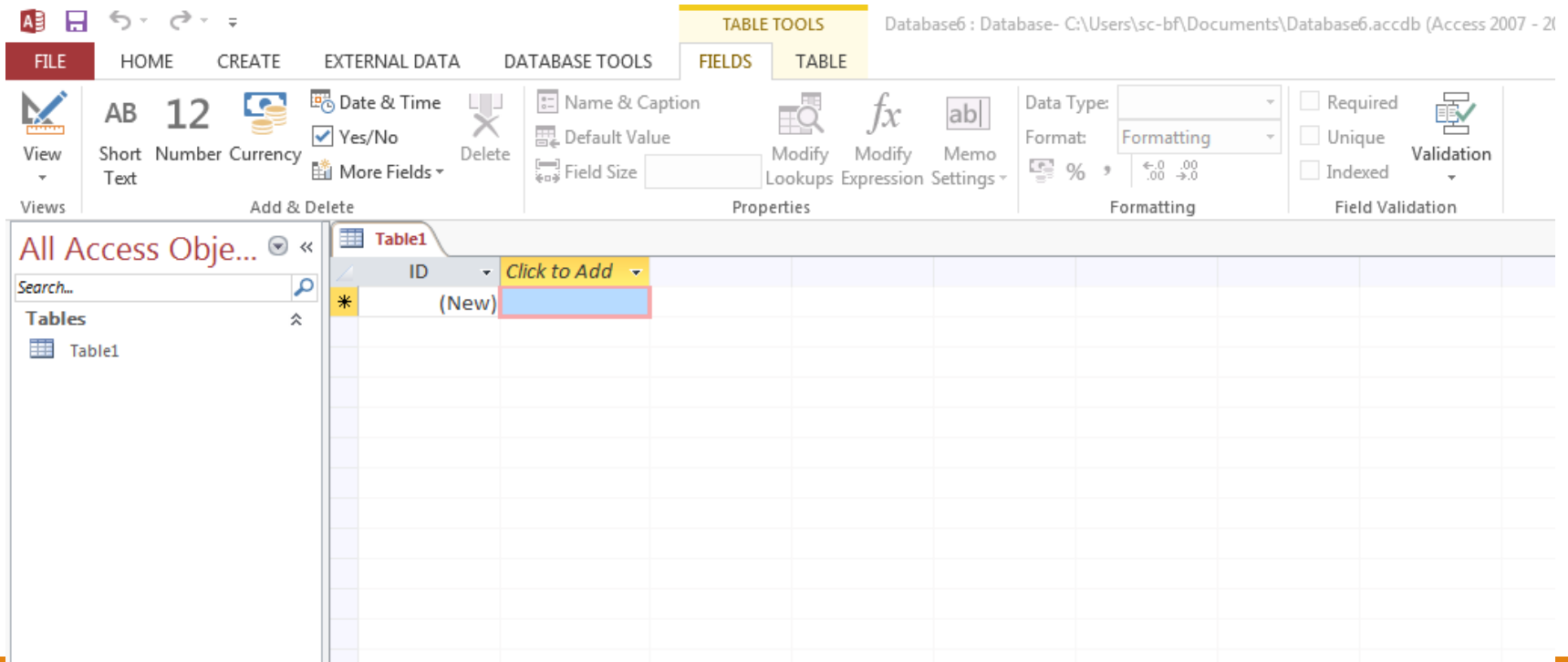
- ❖ You are able to set up a database using Microsoft templates or the preferred option is to choose the Blank database and start to develop your own environment.
- ❖ LETS STOP AND LOOK AT THE TEMPLATES.
- ❖ Remember you should always name your database at this stage. Every time you open an access database development session you are automatically given a database1 default name. Get into the habit or renaming this first otherwise you could overwrite previous work.

Naming Conventions

- Although you could give the same name to a table a form a report and a macro because they are distinctly different objects it is good to follow a naming convention.
- The most popular suggestion is to prefix each object type with a suitable code:
- Tbl – Tables
- Frm- Forms
- Rpt – Reports
- Mcr – Macros
- Mod – VBA visual basic modules

The Access ribbon

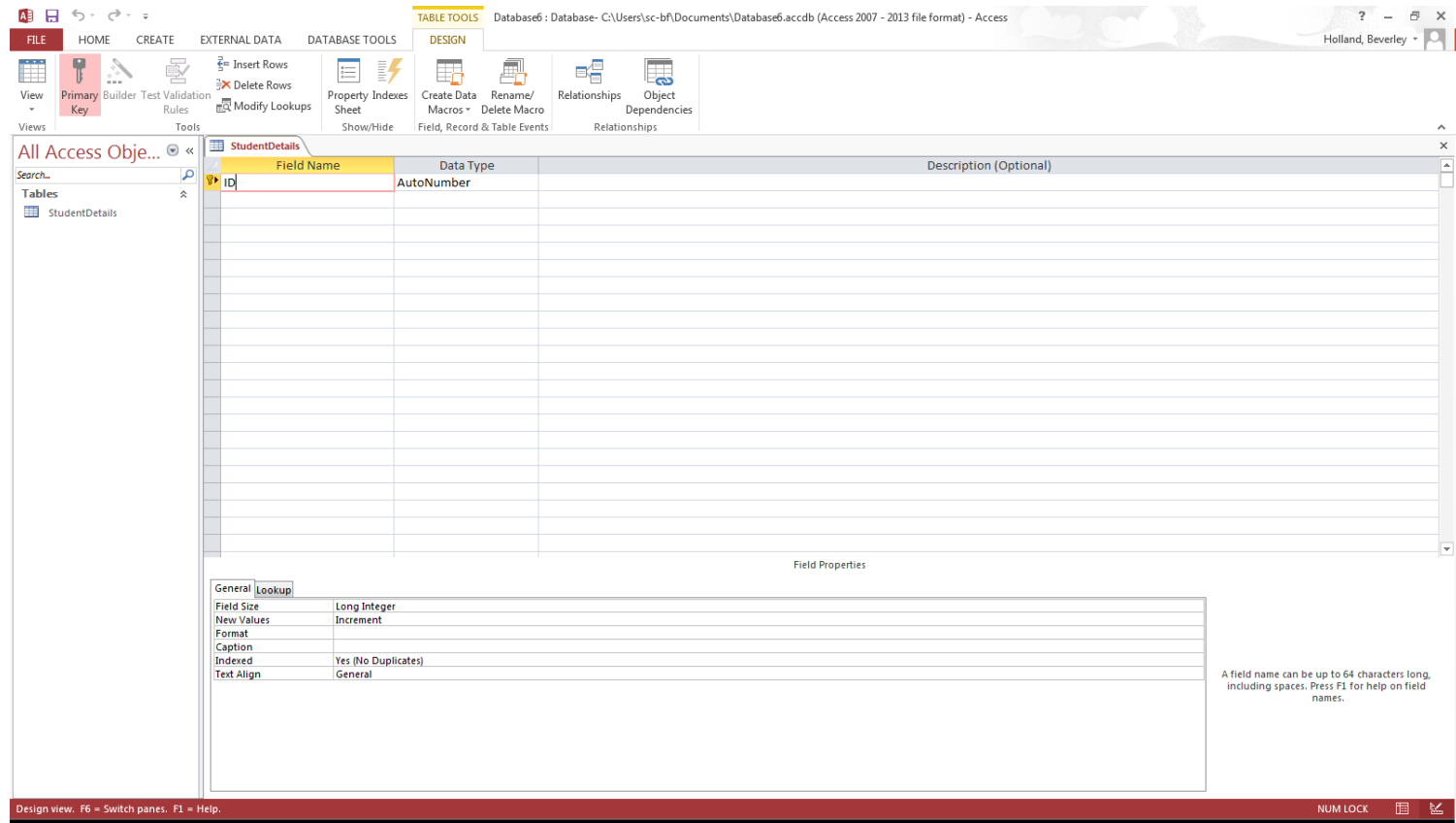
This a completely new feature and a different way of viewing some of the common features that have always been available in earlier versions of Access. The circle in the top left hand corner is now commonly referred to as the Microsoft Button. When we select create>blank> we are provided with the following view and are placed in the DATESHEET area.



Changing to design view

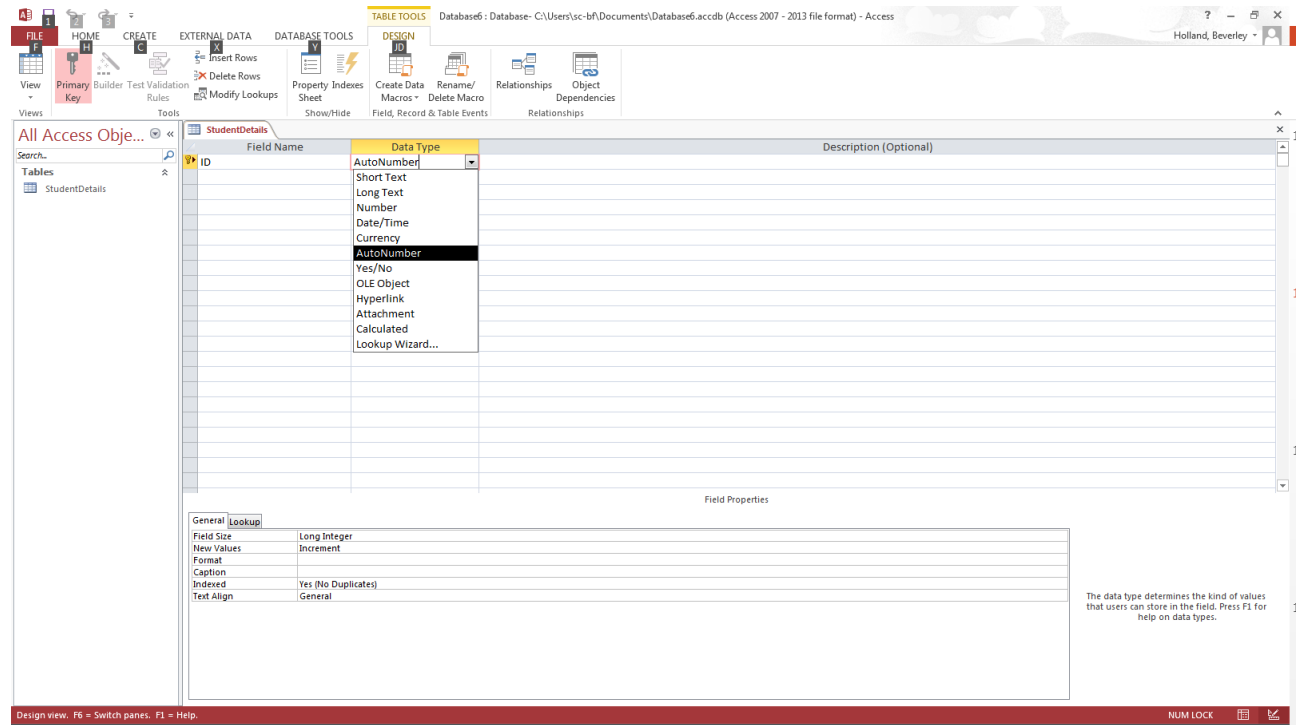
- ❖ Although Access places you into the data sheet view and will recognise any data that you enter, it will form its own opinions on the field design.
- ❖ It is therefore better to change from the datasheet view into design mode which will give you control of you table design.

Changing to Design view



Field definitions

- Notice from the screen, we now have two main areas which control the way in which we can define our fields.
- In the top screen we can simple add the field name and choose a field type from the drop down options.



The field properties area

This is in the bottom window and is used to enhance the fields overall properties.

We can control the field

- Size
- Format
- Input mask
- Default value
- Add validation rules and text
- Captions for use when generating forms
- And to change the indexing and relationships

Using lookup to obtain Data

collegexexample2017 : Database- C:\Users\sc-bf\Documents\collegexexample2017.accdb (Access 2007 - 2013 file format) - Access

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS

DESIGN

Primary Key Builder Test Validation Rules Modify Lookups

Property Sheet Indexes Show/Hide

Create Data Macros Rename/Delete Macro Field, Record & Table Events

Relationships Object Dependencies Relationships

All Access Objects

Tables

- course
- Faculty
- lecturer
- module descriptor
- Module Studied
- School
- Student
- Switchboard Items
- Table1

Queries

- modiduser input
- module query test
- module x123
- Query1
- Query2
- Query3
- Query4
- Query5
- Query6
- Query7
- Query8
- Query9
- student modules

Forms

- course
- course form cis
- coursev2
- coursev3
- coursev4

Module Studied

Field Name	Data Type	Description (Optional)
student id	Short Text	
module id	Short Text	
result	Number	

Field Properties

General Lookup

Display Control	Combo Box
Row Source Type	Table/Query
Row Source	module descriptor
Bound Column	1
Column Count	1
Column Heads	No
Column Widths	16
List Rows	Auto
Limit To List	No
Allow Multiple Values	No
Allow Value List Edits	No
List Items Edit Form	
Show Only Row Source Values	No

The data type determines the kind of values that users can store in the field. Press F1 for help on data types.

Design view. F6 = Switch panes. F1 = Help.

Microsoft Access 2017 interface showing the design view of the 'Student' table. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, and DESIGN. The DESIGN ribbon shows options for Insert Rows, Delete Rows, Property Sheet, Indexes, Create Data Macros, Rename/Delete Macro, Relationships, and Object Dependencies.

The left pane shows the 'All Access Objects' list, including Tables (course, Faculty, lecturer, module descriptor, Module Studied, School, Student, Switchboard Items, Table1) and Queries (modiduser input, module query test, module x123, Query1, Query2, Query3, Query4, Query5, Query6, Query7, Query8, Query9, student modules).

The main area displays the 'Student' table structure with the following fields:

Field Name	Data Type	Description (Optional)
StudentID	Short Text	
FirstName	Short Text	
MiddleName	Short Text	
LastName	Short Text	
DOB	Date/Time	
ParentsNames	Short Text	
Address	Short Text	
PostalCode	Short Text	
EmailName	Short Text	
Notes	Long Text	
Course_id	Short Text	
StudyMode	Short Text	
registration data	Date/Time	
Gender	Short Text	

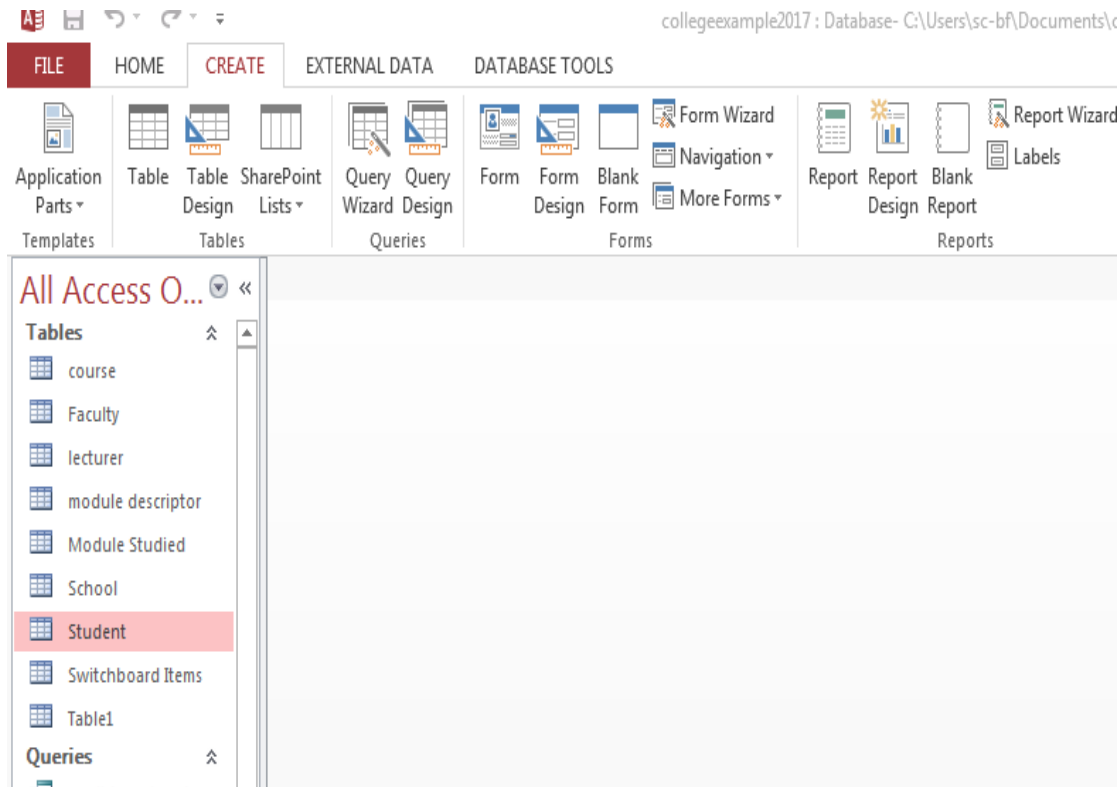
The 'Field Properties' pane is open for the 'PostalCode' field, showing the following properties:

Property	Value
Field Size	30
Format	
Input Mask	> LL09\,0LL;_
Caption	Postal Code
Default Value	
Validation Rule	
Validation Text	
Required	No
Allow Zero Length	No
Indexed	Yes (Duplicates OK)
Unicode Compression	No
IME Mode	No Control
IME Sentence Mode	None
Text Align	General

A note on the right states: 'A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.'

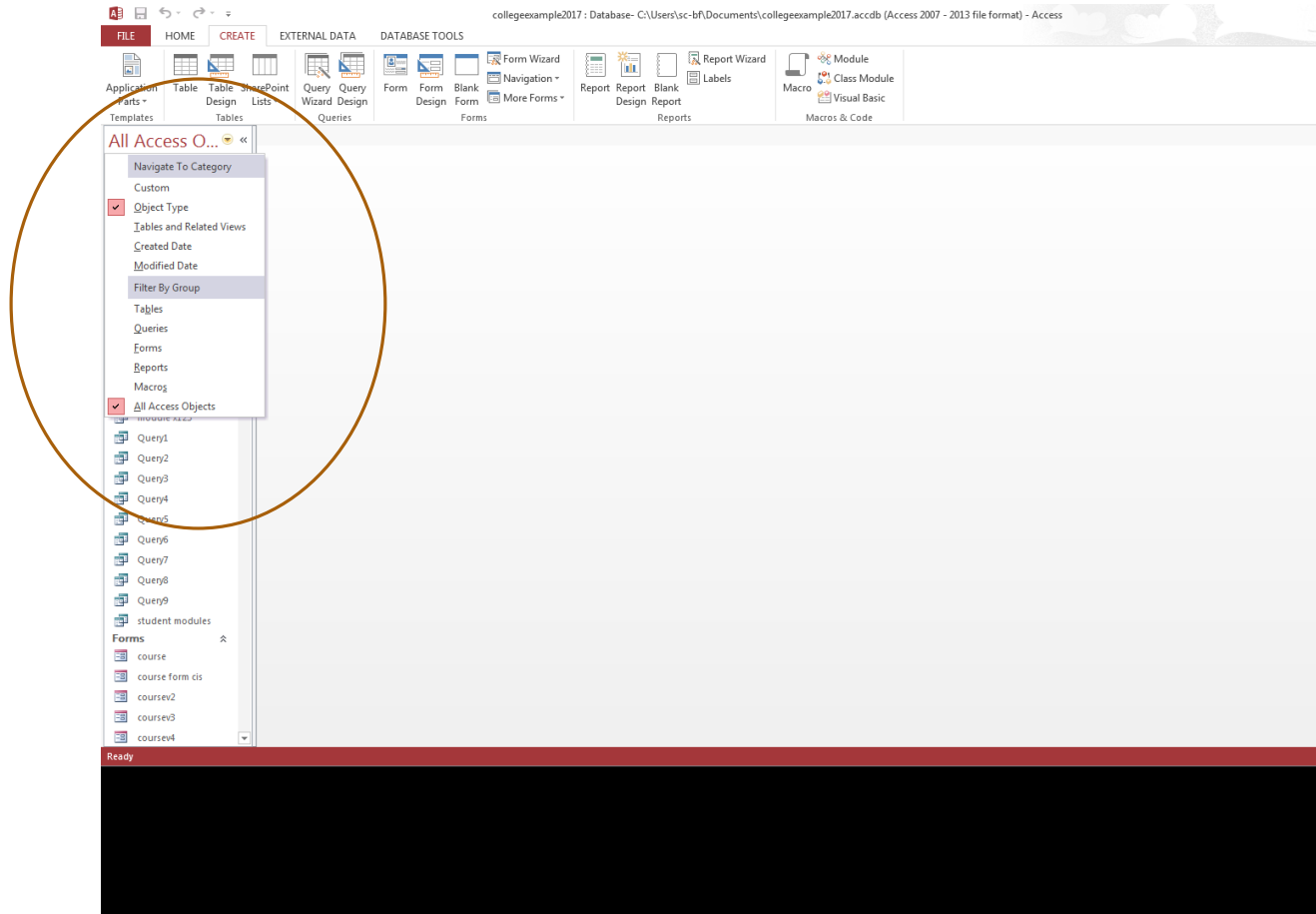
Design view. F6 = Switch panes. F1 = Help.

Adding Tables



- The *create* tab on the ribbon is probable the most important.
- Here you can create your tables, forms, reports and queries.
- I.e. You can build your database

The Navigation Pane



The navigation Pane cont...

This is your primary navigation aid. The default list provides a list of the table in the current database.

Navigation options are

- Custom – creates a new tab in the navigation pane. You can drag and drop objects into your defined group.
- Object type – traditional list of the usual Access object types e.g. Table.
- Tables and Relationships – here Access will list the ways in which table data is used through the DBMS.
- Created data – modified data
- Filter by Group

