



EPL342 –Databases

Lab 1

Introduction to MS Access



Introduction

- What is Microsoft Access?
 - Microsoft Access or “**Access**” is part of the Microsoft Office Suite since Office 95.
 - Beyond being a basic DBMS, Access is a way to develop application software in any Microsoft environment.
 - Its most common use is for creating an application without having to involve a developer.



2013/2016/365



2000/2003/2007/2010



1995/1997

Introduction



- Some advantages:
 - Access has a powerful, easy-to-use interface.
 - It doesn't require a comprehensive understanding of SQL or other programming languages to get started.
 - Integration with the entire Microsoft ecosystem: Excel, Word, PowerPoint, Outlook, ActiveX Controls, .NET
 - Integration with other non-Microsoft systems and languages: Oracle, Sybase, Java, etc.

Introduction



- Some limitations:
 - Access is not designed to support an enterprise application such as ERP/CRM system or web server.
 - If not designed and/or documented well, it can become obsolete and a silo of business data and logic.
 - Though it supports 2 GB of data and 255 concurrent users, it performs best with databases with 1 GB of data or less and max 100 concurrent users. 1 GB of data is about 250 books.



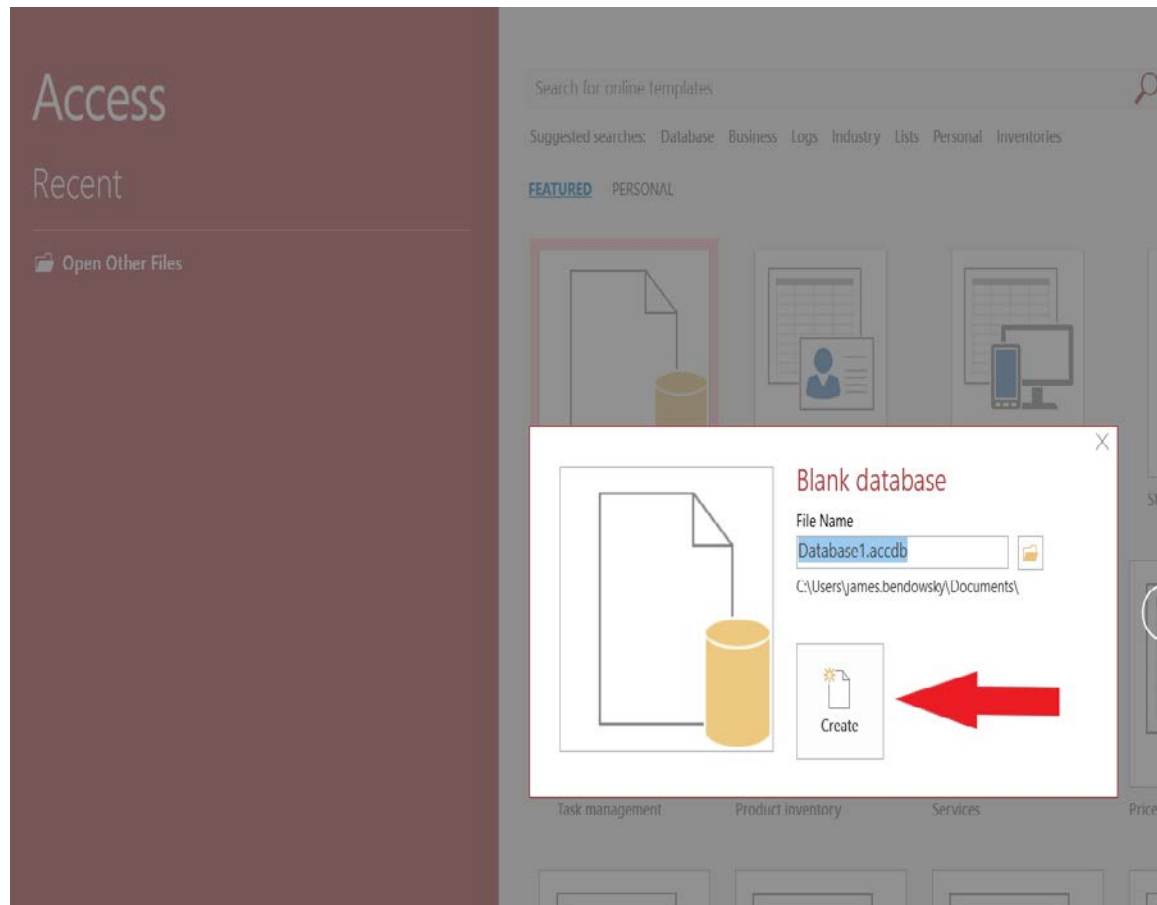
Introduction

- **Start Access.** You will be presented with the choice to create a **blank database** or open a **template** created by Microsoft.
- **Note:** Templates are helpful when you need to create a new application but do not want to start from a completely blank database.
- **Click** “Blank database”



Introduction

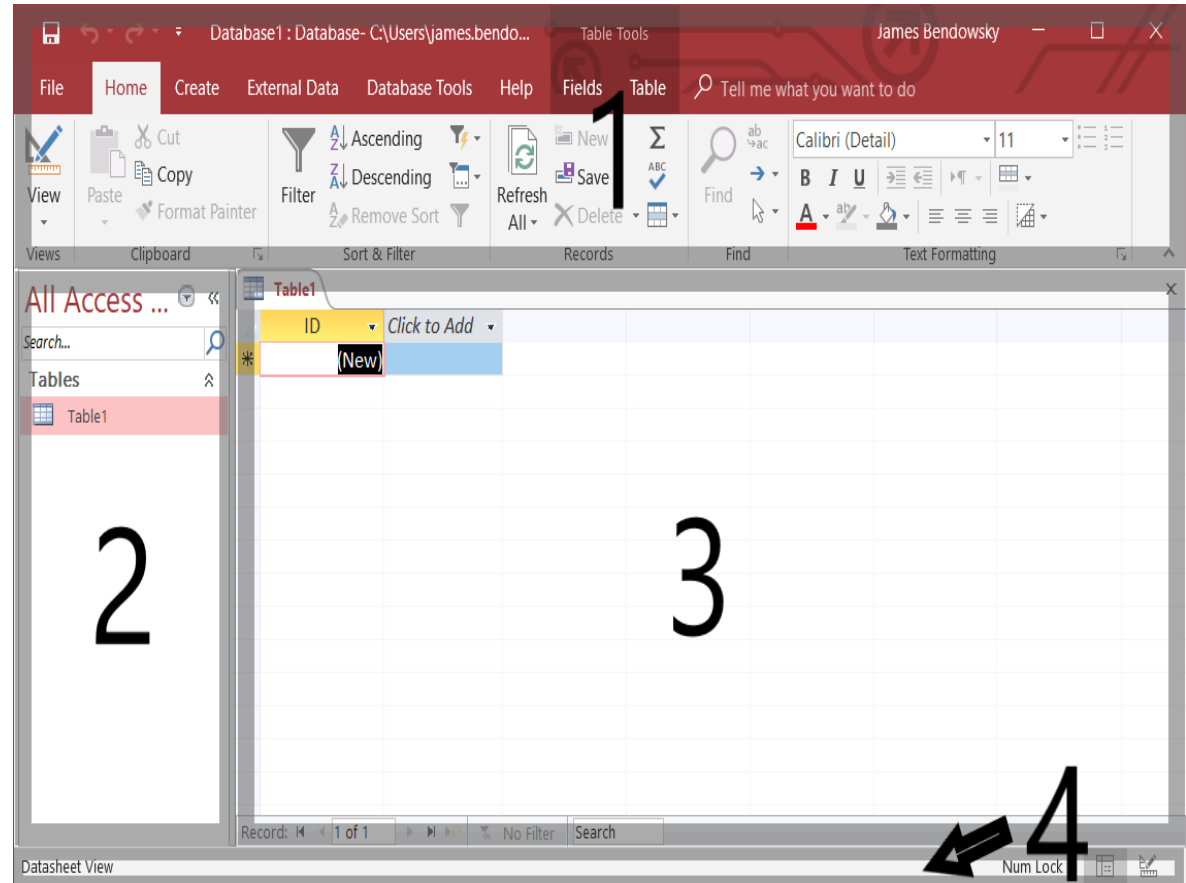
Click
“Create”





Introduction

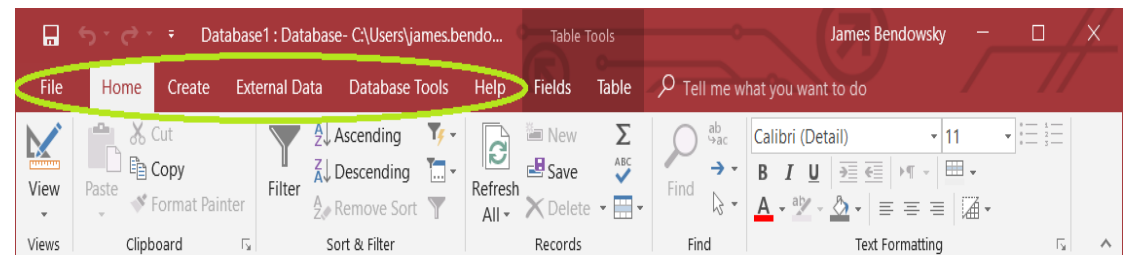
- Next, we will discuss the 4 “frames” of the application and their functions:
 1. Menu (& Ribbon)
 2. Navigation Pane
 3. Workspace
 4. Status Bar (& Views)





The Menu

- The **Main Tabs** are a *customizable* set of menu options that you use most frequently.

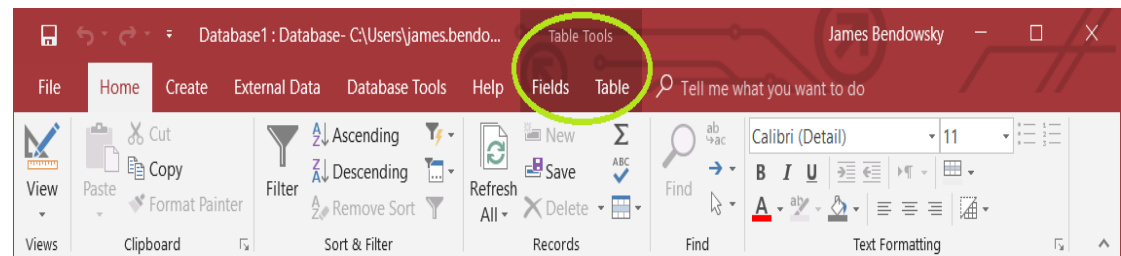


- The standard tabs are File, Home, Create, External Data, Database Tools, and Help.
- The main tabs are always displayed and are considered part of the ribbon.



The Menu

- The **Tool Tabs** are a *customizable* set of menu options that appear depending on what you have selected.

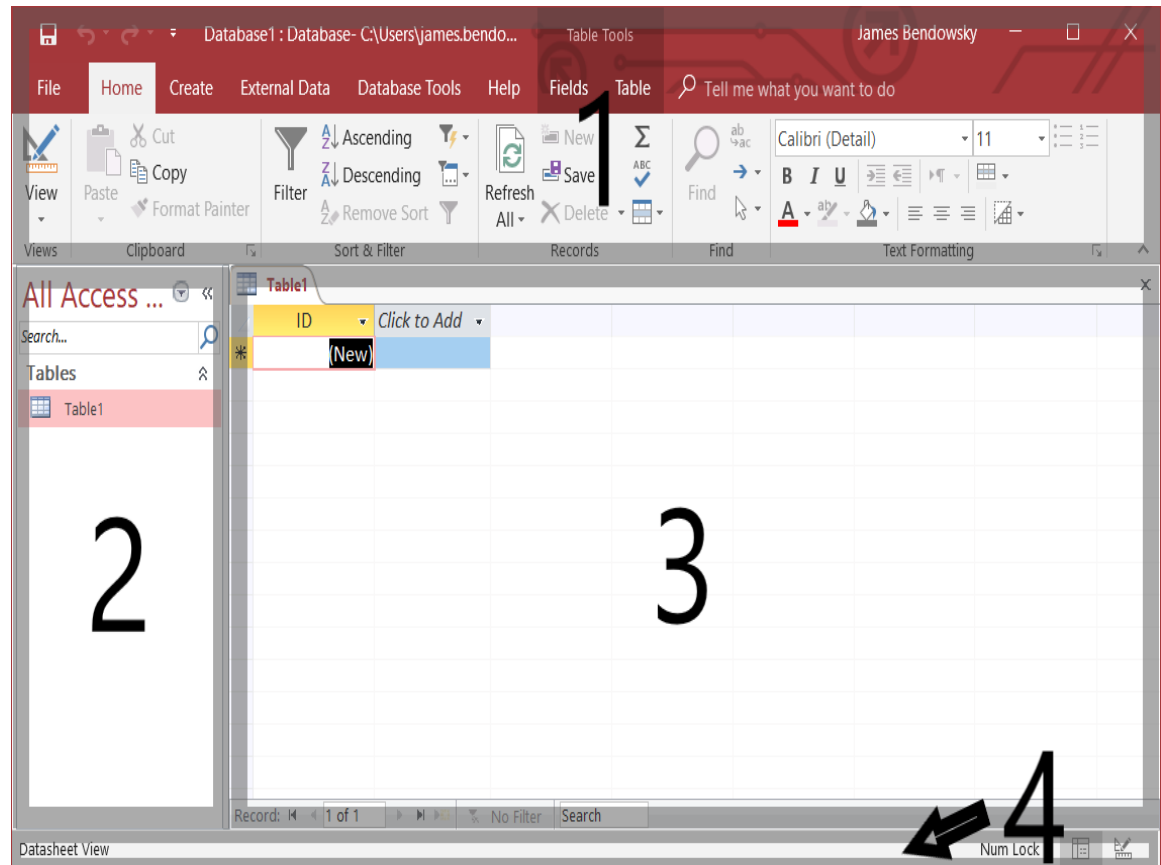


- The standard tabs are View, Form Layout, Form Design, Report Layout, Report Design, Relationship, Query, Macro, Table (2 depending on view), and Form
- The tool tabs are always changing and are considered part of the ribbon.



The Navigation Pane

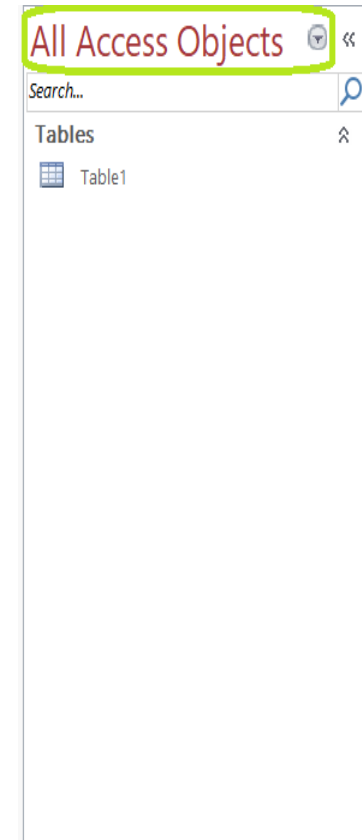
- The second “frame” to familiarize yourself with is the **Navigation Pane** (#2 on the diagram)
- The Navigation Pane helps you find any Access Object in the Database/Project.
- Note: This feature can also be customized when you have more understanding of Access.





Navigation Pane

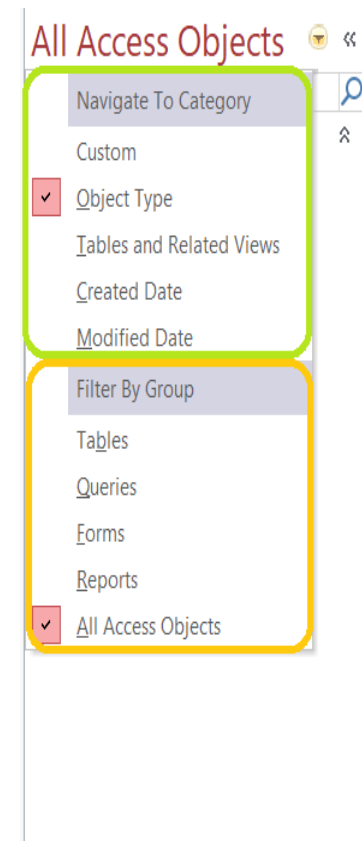
- As an application is built, it will consist of various **Access Objects: Tables, Queries, Forms, Reports, Macros, and Modules**.
- With a blank database, you will only see one Table called “Table1”.
- The circled region in the screenshot displays/controls what objects you can see for the entire project.





Navigation Pane

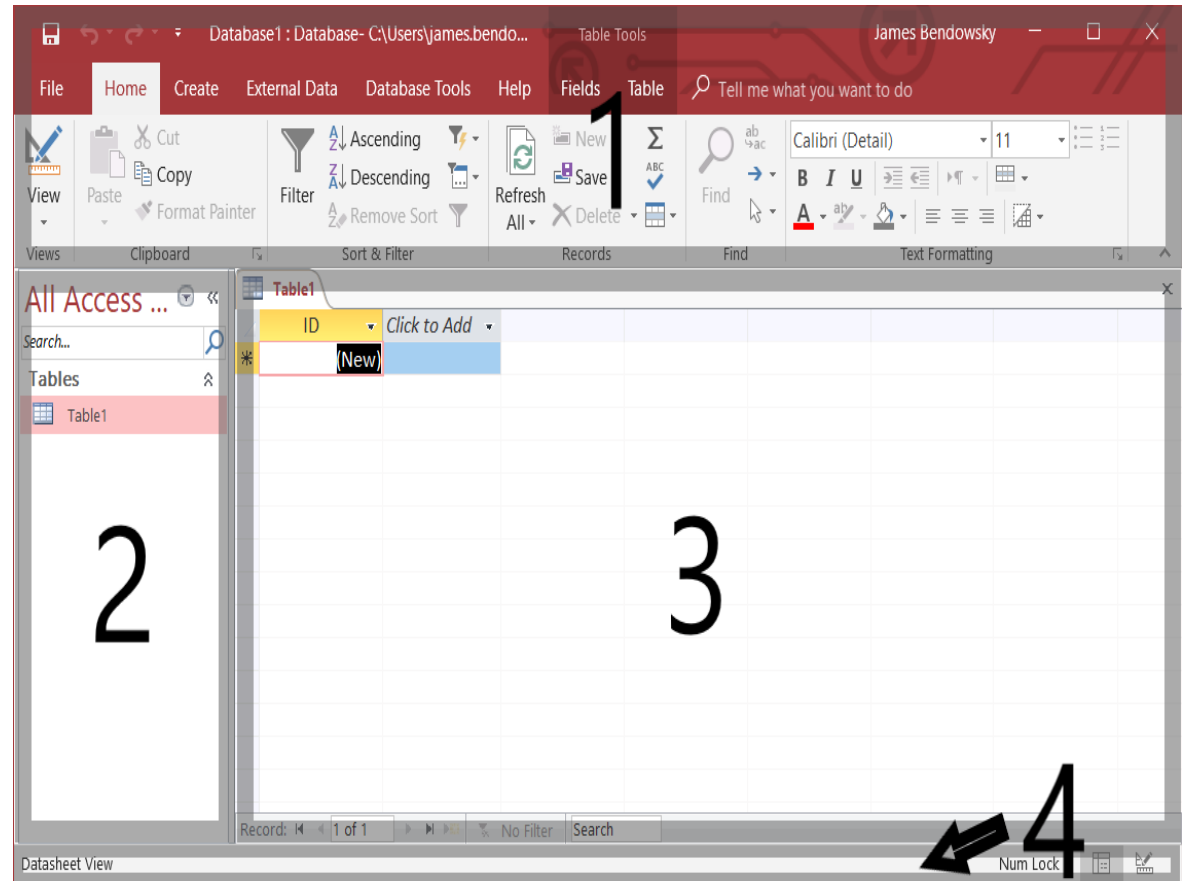
- The **green-circled** area is where you can select the category group you want to see in the Navigation Pane.
- The **orange-circled** area is where you can filter the group more.
- In this example,
 - the category group selected is “Object Type” and shows each object by its type, e.g. Tables, Queries, Forms, Reports, etc.
 - The filter selected is “All Access Objects” which is the same as “show all”.





The Workspace

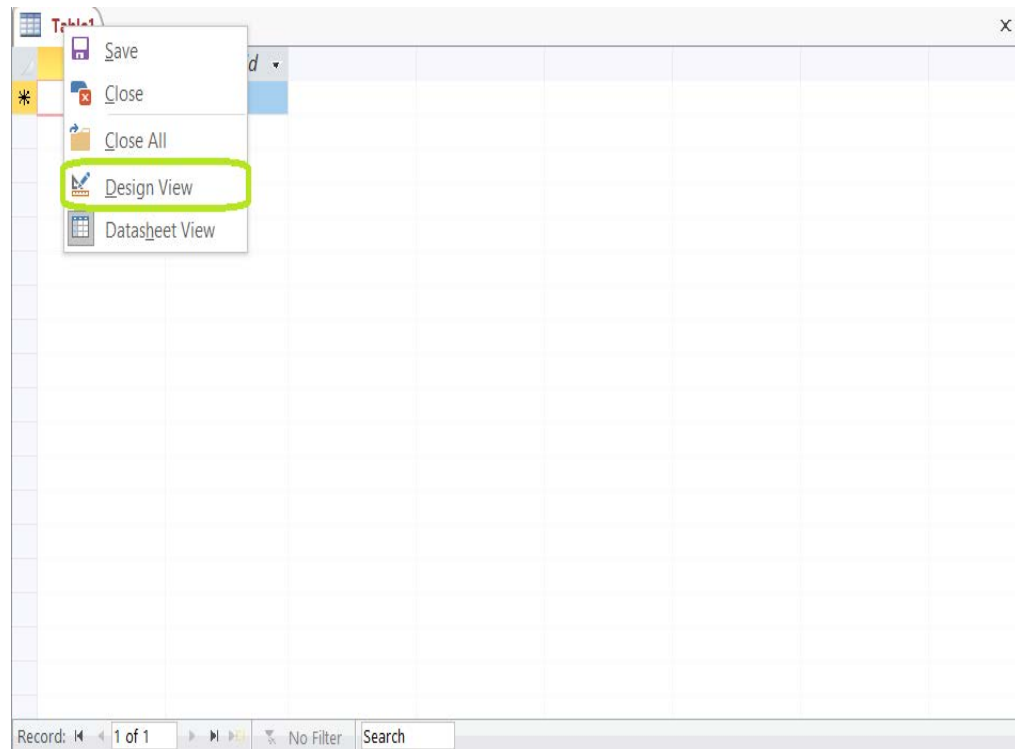
- The third “frame” to familiarize yourself with is the **Workspace** (#3 on the diagram).
- All objects that you open from the navigation pane are visible in the **tabs area**.
- The currently selected object’s contents are displayed below.





The Workspace

- For “Table1”, we can also “Save” and switch to the “**Design View.**”
- Note: **Datasheet View** is greyed out because this is the view we are currently on.
- **Click** “Design View”.





The Workspace

- The content displayed in the workspace depends on the type of Access Object and the View that is currently selected.
- Note: the **Property Sheet** is a pane that shows up commonly on the right side for various Objects and Views.

The screenshot shows the Microsoft Access workspace with a table named 'Table1'. The table has one field, 'ID', with the data type 'AutoNumber'. Below the table, the 'Field Properties' pane is visible, showing the 'General' tab with the following properties:

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

To the right of the workspace, the 'Property Sheet' pane is open, showing 'Table Properties' for the selected table. The 'General' tab is active, displaying the following properties:

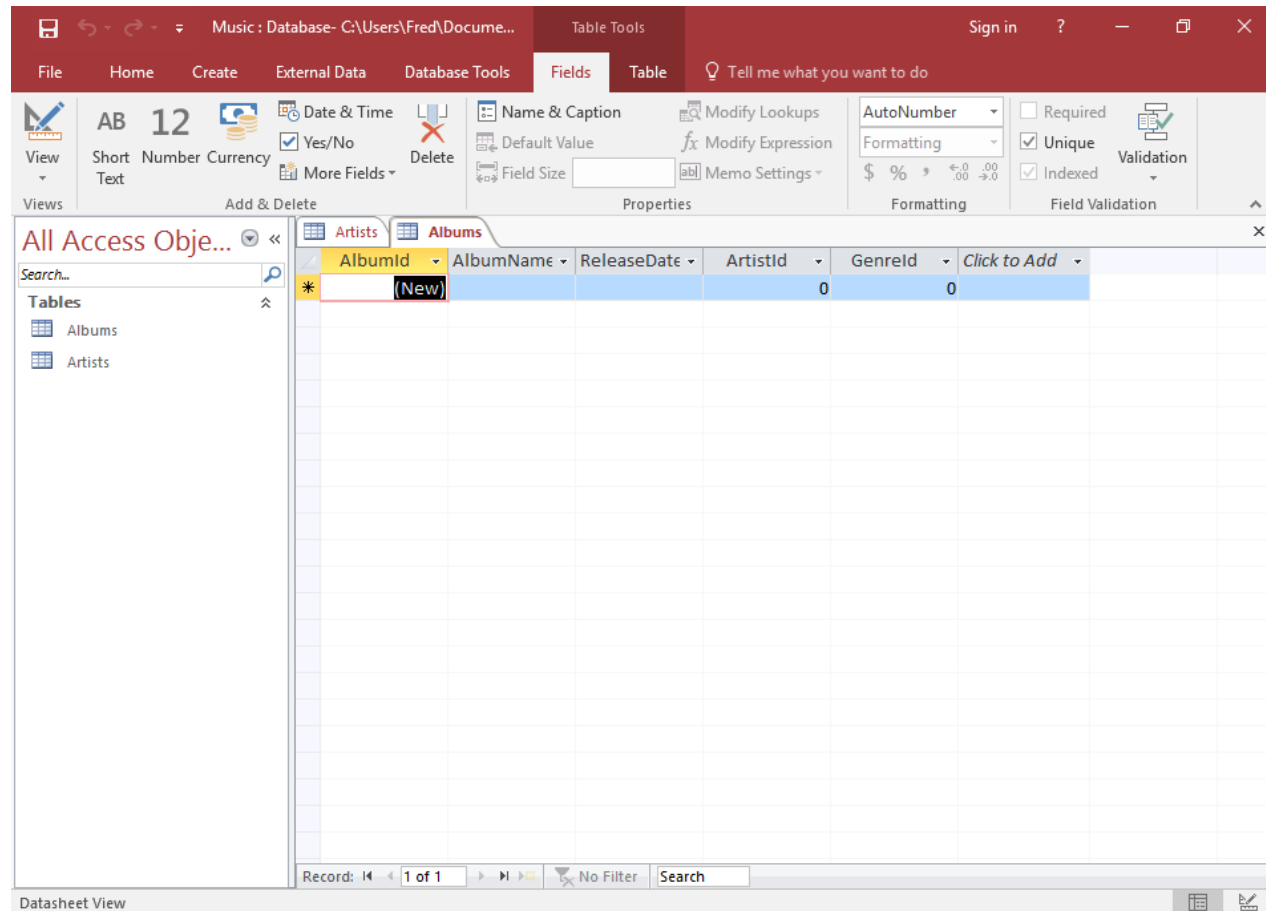
Property	Value
Read Only When Disconnected	No
Subdatasheet Expanded	No
Subdatasheet Height	0"
Orientation	Left-to-R
Description	
Default View	Datasheet
Validation Rule	
Validation Text	
Filter	
Order By	
Subdatasheet Name	[Auto]
Link Child Fields	
Link Master Fields	
Filter On Load	No
Order By On Load	Yes

A field name can be up to 64 characters long, including spaces. Press F1 for help on field names.



Datasheet View vs Design View

- Datasheet View displays the table as a grid. The fields are displayed as columns, and the records are displayed as rows. The field names are listed as the column headers.
- Datasheet View displays the data. If this table had data, it would be displayed in the cells.
- Each row represents a record. If the table had say, five records, there would be five rows of data.
- In Datasheet View, if you want to find out a field's data type, you need to select that field, then select the Fields tab on the Ribbon. The field's data type and other properties will be listed on the right side of the Ribbon.





Datasheet View vs Design View

- Design View doesn't display any data. Therefore, there's more space available to display other settings.
- In Design View, the fields are listed vertically. They are listed above and below each other as opposed to side-by-side.
- In Design View, you can see the data type listed next to each field.
- The way Design View works is, when you click on a field (in the top frame), the bottom frame displays the properties for that field. You can then change these properties as required.

Field Name	Data Type	Description (Optional)
GenreId	AutoNumber	
Genre	Short Text	

Field Properties	
Field Size	255
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Allow Zero Length	Yes
Indexed	No
Unicode Compression	Yes
IME Mode	No Control
IME Sentence Mode	None
Text Align	General

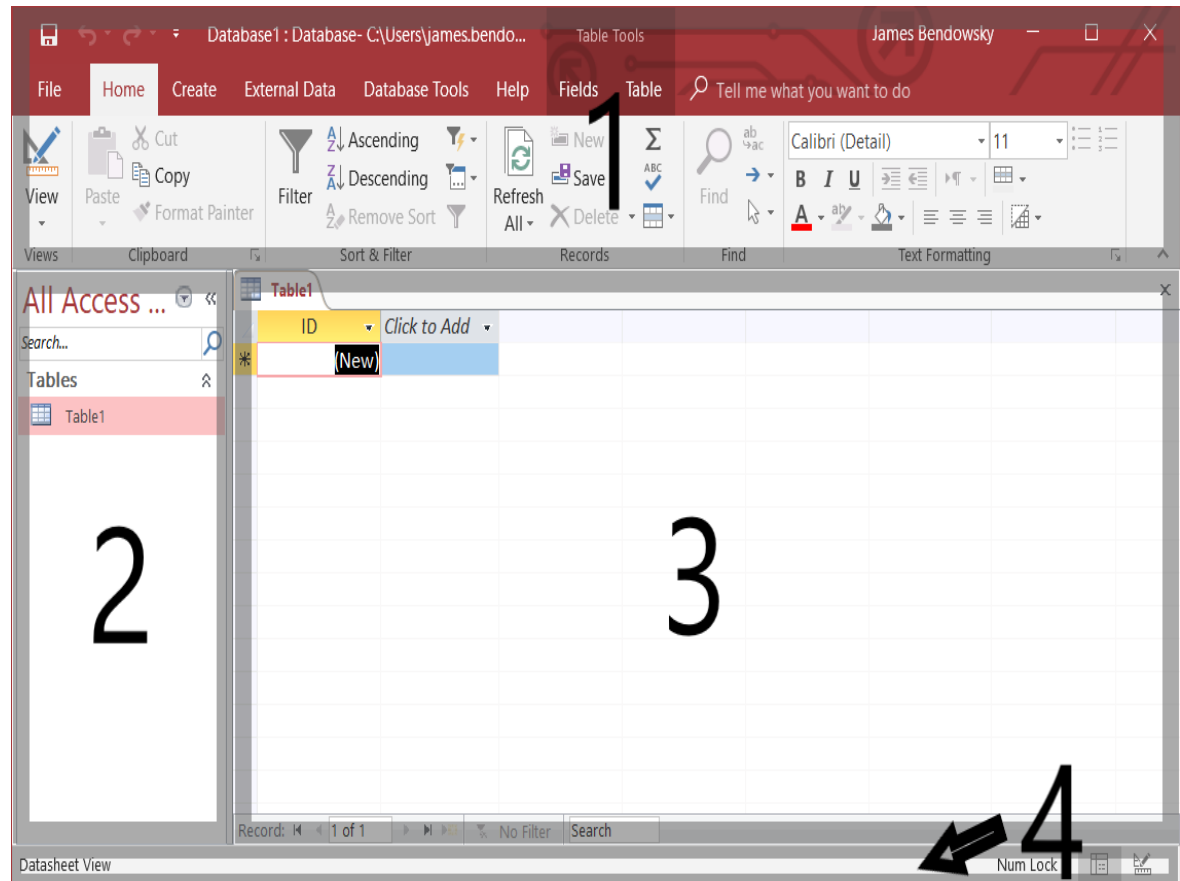
The data type determines the kind of values that users can store in the field. Press F1 for help on data types.

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

The Status Bar (& Views)



- The fourth “frame” to familiarize yourself with is the **Status Bar** (#4 on the diagram).
- This bar sometimes displays information about what you are working on but, for the most part, displays and allows you to control which view you need.





The Status Bar

- In the bottom left, we can see the view we are currently looking at. So for “Table1”, this is the “Design View”.
- For this view, the status bar is showing us some shortcut keys, F6 & F1.
- In the bottom right, there are two buttons which we can click to switch the view.
- **Click** the left button.

The screenshot shows the Microsoft Access interface in Design View for a table named 'Table1'. The ribbon includes 'Table Tools' and 'Design'. The 'All Access Objects' pane on the left shows 'Table1' selected. The 'Field Properties' pane shows the 'General' tab with the following table:

Field Name	Data Type	Description (Optional)
ID	AutoNumber	

The 'Field Properties' pane shows the following table:

Field Name	Field Properties
ID	Field Size: Long Integer
ID	New Values: Increment
ID	Format: (empty)
ID	Caption: (empty)
ID	Indexed: Yes (No Duplicates)
ID	Text Align: General

The 'Property Sheet' pane on the right shows the 'General' tab with the following table:

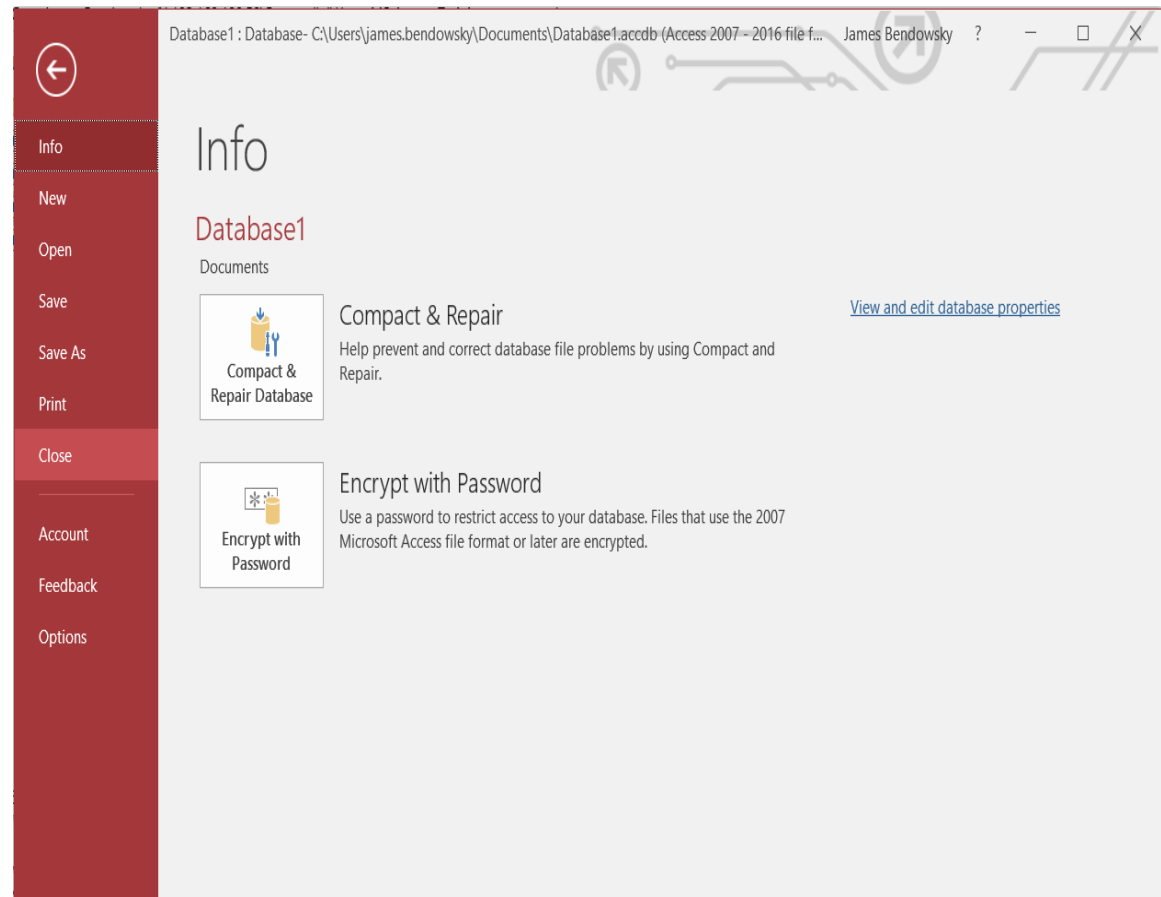
Property	Value
Read Only When Disconnected	No
Subdatasheet Expanded	No
Subdatasheet Height	0"
Orientation	Left-to-R
Description	(empty)
Default View	Datasheet
Validation Rule	(empty)
Validation Text	(empty)
Filter	(empty)
Order By	(empty)
Subdatasheet Name	[Auto]
Link Child Fields	(empty)
Link Master Fields	(empty)
Filter On Load	No
Order By On Load	Yes

The status bar at the bottom left displays: 'Design view. F6 = Switch panes. F1 = Help.' The bottom right corner contains two buttons for switching between Design View and Datasheet View.

Starting from Templates



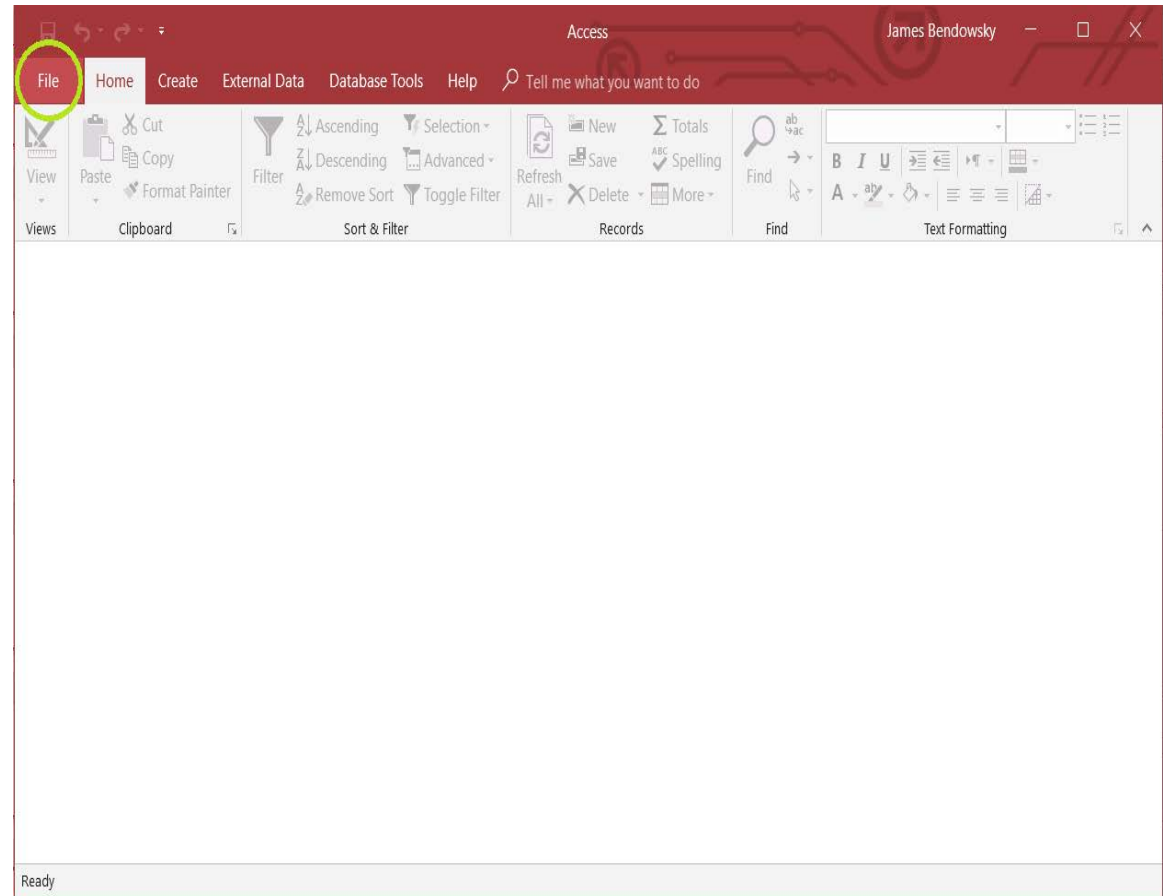
- To close the database, click File from the Main Tabs (top left). Select Close.
- There are a lot of good templates provided in Microsoft Access 2016.



Starting from Templates



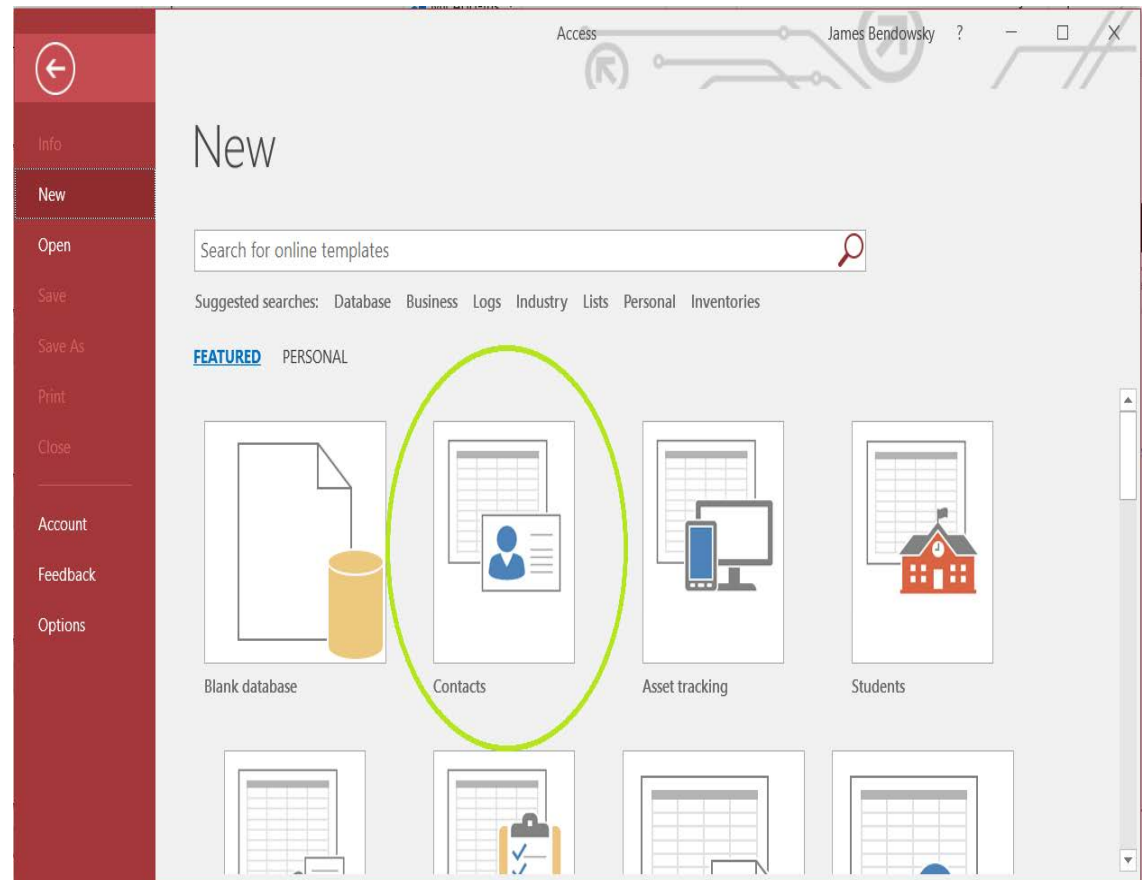
- **Templates** provide a more developed starting point than a blank database.
- You can create your own templates based on the type of work you do to save time.



Starting from Templates



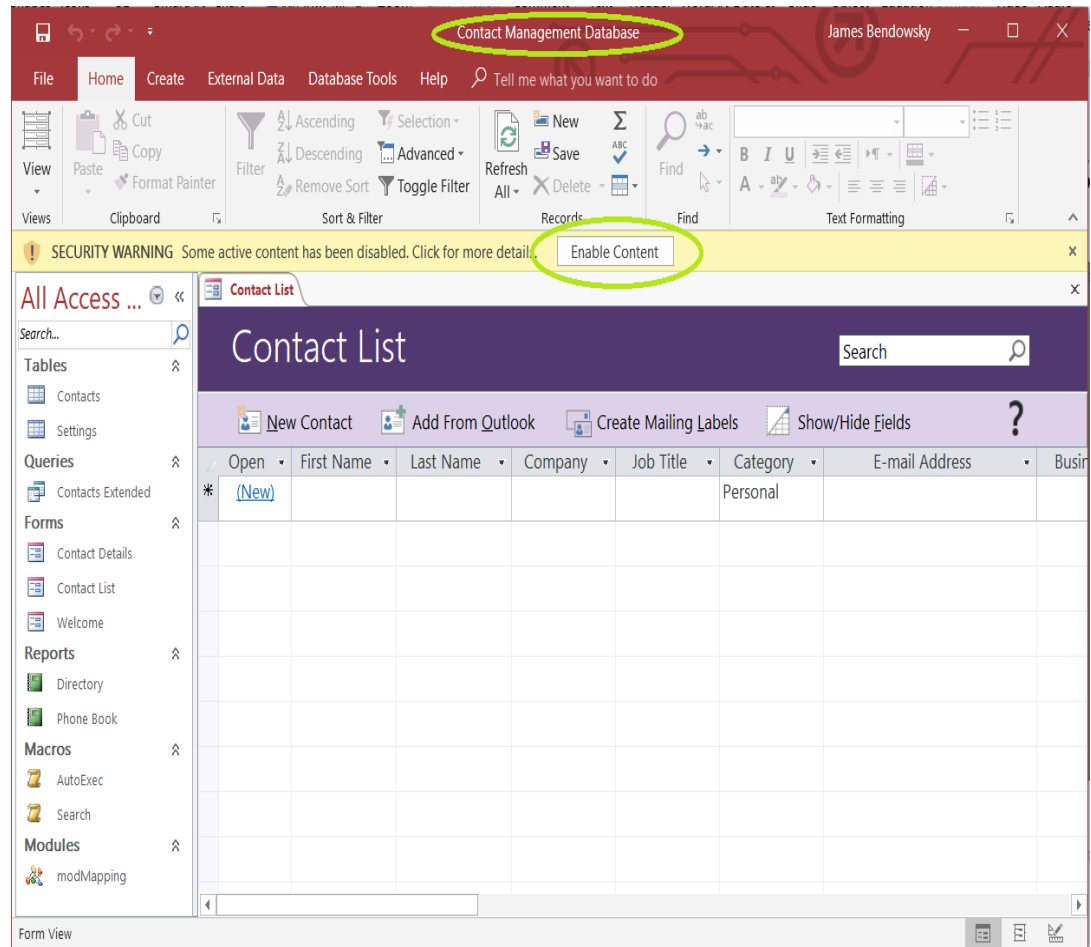
- **Click** “File” from the Main Tabs in the top left.
- You will see this screen with the Blank database and a list of standard templates.
- Imagine that you work with a lot of clients helping them create applications for their Contacts.
- **Click** “Contacts”. And create the relevant database (name it as you wish)



Starting from Templates



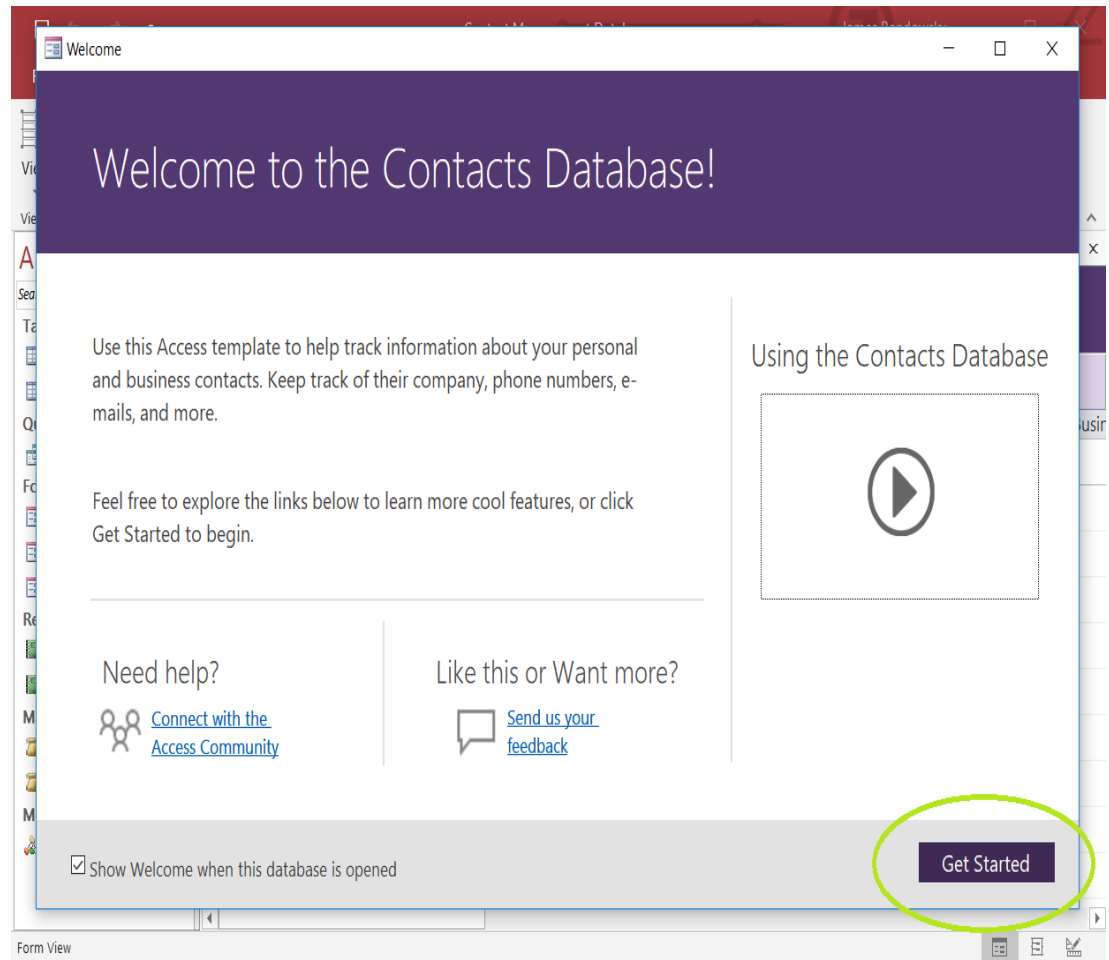
- Notice that the application already has a **title**, “Contact Management Database”.
- Because the template contains VBA macros (automation), you may receive a security warning.
- Click “Enable Content”.



Starting from Templates



- You should see a pop up like the one in the right screenshot.
- Note: this automation is created using VBA macros.
- **Click** the “Get Started” button to close the pop-up.



Starting from Templates



- **Observe** that we have many pre-built Tables, Queries, Forms, Reports, Macros, and Modules from which to build our new application.

