



Microsoft Access 97/98 Session 3

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Introduction

Access 3 is a course created for CAL PACT participants to learn more about the features of Access. This document serves as a supplement and future reference to the class. It covers advanced material for the Windows computer platform.

What you need to know to take this class

- How to use the mouse
- Familiarity with the Windows or Macintosh computing environment
- The material covered within the CAL PACT Access 1 & 2 class

What you will learn in this class

- Creating Relational Databases
- Working with Pivot Tables
- Importing/Exporting Data
- Automating Databases
- Applying Security

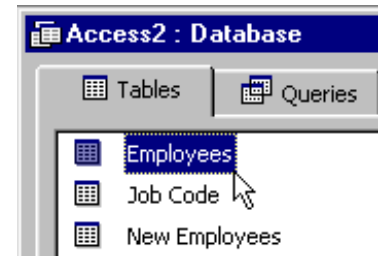
Access allows users to use the Table Analyzer Wizard to break up an existing table into smaller relational tables to help organize your database. Splitting up a large table into multiple tables will allow you to search for information faster and help update information easier. Just in case you need to retain your original table, the wizard will automatically save a copy of your original table in the current database file. Once you have finished creating the relational database, a query can be created to reassemble the original table's display/format with the updated information.

Table Analyzer Wizard

The Table Analyzer Wizard can be used to quickly split a large table into smaller related tables containing the same information. This helps to orga-

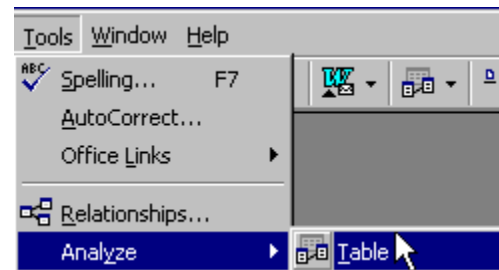
nize and update information faster as well as prevent inconsistencies and typographical errors within the database.

Creating a relational database can be accomplished by opening an existing database file and selecting the appropriate table from the Tables tab in the Database Window.



Next, start the Table Analyzer Wizard by selecting,

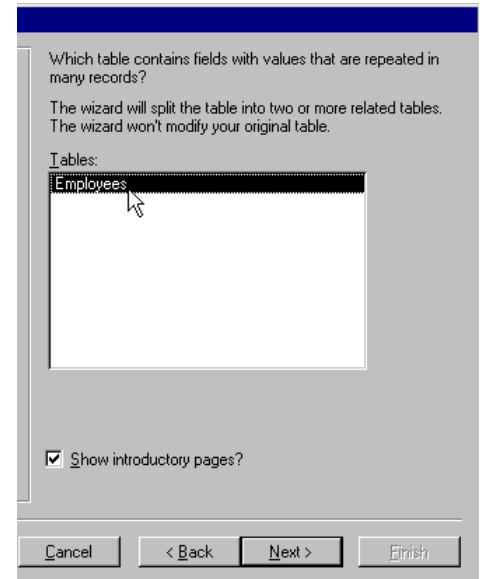
Tools | Analyze | Table



The first two windows of the wizard will explain what the wizard does and how you can benefit by splitting the table into parts.

In the following window, select the table from which you will create the new relational database tables.


You can also uncheck "Show introductory pages?" if you would rather not see the initial explanation/examples of the wizard in the future.



The next window asks whether or not to have the wizard decide what fields will be placed in what tables. We suggest using the default, "Yes, let the wizard decide," because you can always manually move fields from one table to another in the next portion of the wizard.


The next window will allow you to move fields between the new tables that have been created and rename the tables themselves.


In the example below, you will notice that the wizard created three separate tables, assigned different fields to each table, and created relationships to link the tables together.


If primary keys were not assigned in the original table, they will be made for you automatically.  **Generated Unique Key**


Fields can be moved from table to table by first selecting the field to be moved and then click and drag the field to its new location within the new table.




You can also rename the new tables in this window by clicking within any portion of the table's window and selecting the "Rename Table" button. 

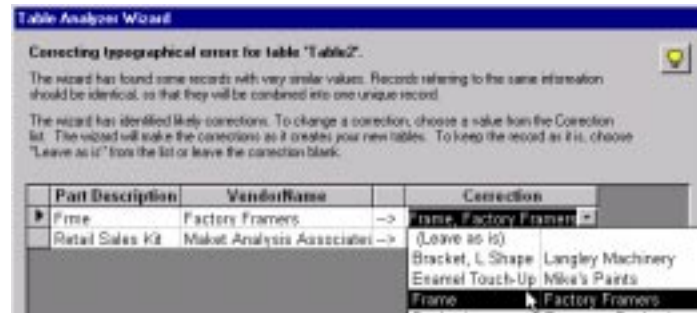
If at any point you make a mistake either moving fields around or renaming a table, use the "Undo" button to undo the action you just performed. 

The next window will allow you to assign a primary key to your tables. A key should have been previously created for you.  **Generated Unique Key**

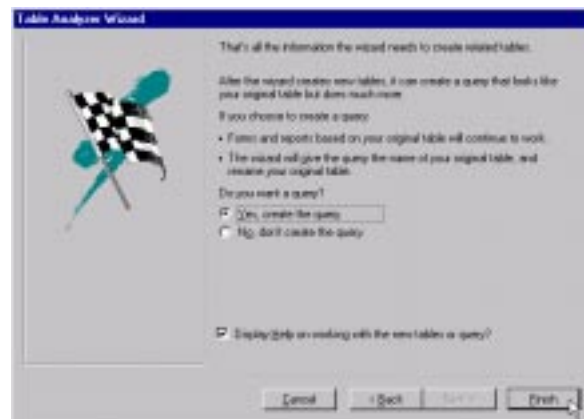
If the key has not been created, you may do so by selecting the proper table and clicking on the Add "Generated Unique Key" button. 

If you have pre-existing fields that contain a different value for each record, you may use that field as a primary key for the table. This is accomplished by selecting the table, highlighting the field, and then clicking on the "Set Unique Key" button. 

The next window will search the fields in your tables for similar records. This option will display records of like values and let you combine them into a single, unique record to ensure your entries are consistent. Corrections can be made by clicking within the “Correction” field for each repeated record and choosing the proper example from the drop down menu. If the repeated records are in fact two separate records and not a typographical error, select “Leave as is” from the pull down menu.



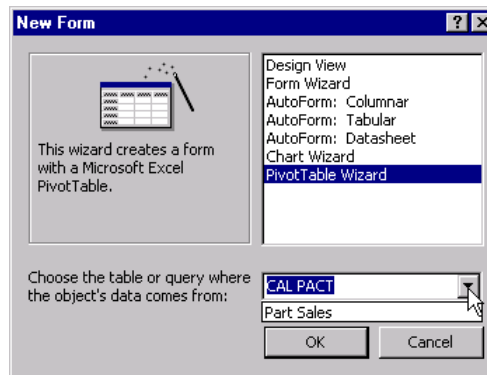
The final window asks if you would like the wizard to create a query based upon the new tables created with the wizard. We suggest that you go ahead and finish the wizard by creating the query, so you can view the information from all tables combined into one query.



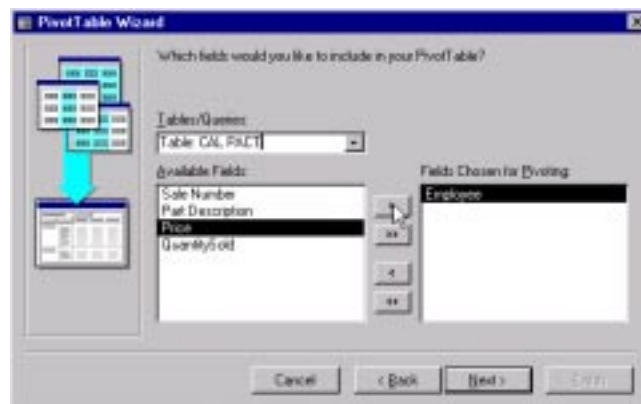
Working With Pivot Tables

Access allows you to integrate other Microsoft Office products, like Excel, to combine features across applications. The “Pivot Table Wizard” will enable you to create pivot tables within Access from an existing table. Pivot tables are not only useful for rearranging information, they can also help you total it. Access does this by embedding an Excel pivot table into an Access form, therefore you must have Microsoft Excel installed to use this feature.

Pivot tables are created by using the Pivot Table Wizard when creating a new form. Make sure you select the appropriate table or query from the pull down menu once the Table Wizard has been selected.



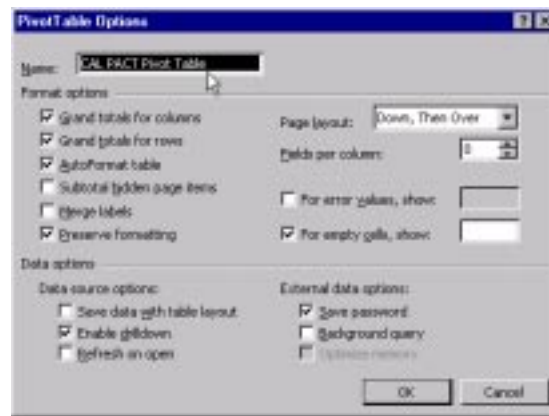
The next window will allow you to select different fields from multiple tables/queries. Click on the down pointing arrow to select the table/query and then select either the single or double right/left pointing arrows to add or remove fields. When all field have been selected, click "Next." Microsoft Excel will launch and create the pivot table for you.



Use this window in Microsoft Excel to set up the pivot table. The fields included in the Pivot Table Wizard will be displayed as grey buttons on the right hand side. Drag and drop each of the field buttons to the desired location on the pivot table diagram. (Note: More than one field may be included for a boxed area of the pivot table.) When the layout is finished, click on "Next.."



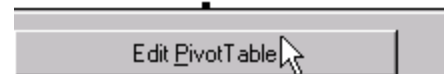
Click on the “Finished” button to create the pivot table and include it in your Access database or click on the “Options” button first to customize how your table will be displayed and designate a name for the pivot table.



The pivot table will be displayed as a form which must be manually updated if records from its referenced fields are changed.

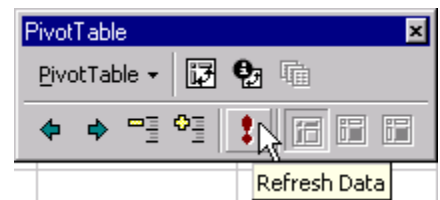
Update the table by clicking the “Edit Pivot Table” button once the pivot table has been opened.

Id	4334	2973
	15	
Id	1647	



Microsoft Excel will launch and allow you to update the table by using the “Refresh Data” button on the floating PivotTable toolbar. If the toolbar does not automatically appear, go to

View | Toolbars | Pivot Table. Exit Excel when finished.



Exporting & Importing Data

Access can import and export data from many types of non-Access database files, such as Microsoft Excel and Foxpro, Dbase, Paradox, Lotus 1-2-3, and delimited/fixed width text files.

Importing Data

External data must be imported into an existing Access database file. Begin by opening a database file you would like the imported data to be added to or create a new database file. Select **File | Get External Data | Import**. Select the data source by first selecting the data type from the pull down menu under "Files of type." Then, browse the available storage devices and folders until you locate the appropriate file. Select the file for import and click the "Import" button. Select the component(s) you wish to import and then click on the "Options" button. The option checkboxes enable you to import formatting, relations, special toolbars, etc. that were created in the original application into Access.



Exporting Data

Access database files may also be saved to work with other applications by exporting an existing database. Highlight the table you wish to export and select **File | Save as | Export...** When prompted, select "to an external file or database," and click **Ok**. At the "Save table" window, select the location to store your exported file and select the type of file to export as by using the down pointing arrow under "Save as type." If you wish to retain any formatting placed on the data (fonts, lookup fields, field widths, etc.), click the "Save Formatted" checkbox. Finally, click **Export** to save the file.

Automating Your Database

Access can offer practical functionality to your database by automating repetitive actions into a database application using macros. Database applications can be used to perform multi-stepped operations, allowing you more time to concentrate on the data rather than how to manipulate it.

Here we will practice creating macros that will automatically open a form to add additional records, close the form, run an update query to append the records to a table, display a confirmation of the update, and create/update a report reflecting the new entries.

We will be working with two tables, one query, one report, and the macro we create.

Begin by selecting **New** from the Macro tab in the Database Window. Select **View | Macro Names**. Three columns should appear labeled Macro Names, Action, and Comment. Macro Names enables you to name specific operations within the macro. Action allows you to specify what the operation will do and what objects/items will be affected. Each of these operations can be described in more detail in the Comments field.

For the first operation, enter "Opens form" in the Macro Names field and select "OpenForm" from the Action pull down menu. In the Action Arguments area, click once within the Form Name tab and select the form. Skip a line for the next operation to allow users to enter data into the form before running the rest of the operations. For the third line, select "Close" in the Action field. In the Action Arguments area, select Form for the Object Type and the form for the Object Name.

The next action will call an append query to add the new record from the New Employee table to the main Employee table. Select OpenQuery from the Action menu and the New Employee table from the Open Query pull down menu in the Action Arguments area.

Since the above query automatically added the new employee to the main list, we no longer need that record present in the New Employee table. If we do not delete each new record we enter, the main table will be appended with duplicates of the same employee. Therefore, three operations are needed to remove a record once it has been added and appended to the

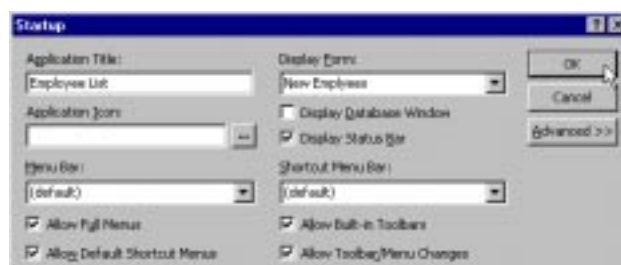
main employee table. In the Action field, select “OpenTable” and choose the New Employee table from the Table Name field in the Action Arguments area. We must then delete the present record contained within the table, so select “RunCommand” in the next Action area and “DeleteRecord” from the Command field in the Action Arguments area. Next, select “Close” from the Action menu and Table from Object Type and the table’s name from the Object Name field.

If you share files with other people, you may also want to include a small message letting the user know that they have just appended the master employee list. We can do this by selecting MsgBox in the next blank Action field. In the Action Arguments area, enter an appropriate description in the Message and Title fields.

Finally, select “OpenReport” in the next blank Action menu area and choose the main employee list from the pull down menu for the Report Name in the Action Arguments area. Close and save the macro.



Before you run the macro you must tell Access to automatically open the form upon accessing this database file. Go to **Tools | Startup...** and enter an Application Title name and select the New Employee form from the Display Form field. Now, anyone who opens the file will be presented with the New Employee form which will update the employees list and generate a report automatically.



Database Security

Access provides ways to secure your data and allow multiple users to work on a single database at the same time. The owner of a multi-accessed file can restrict or limit access of specific users and be notified of who is connected to their file.

Single User Access

Files can be easily protected by creating a password for the file. When opening a file select the Exclusive check box to make yourself the exclusive owner of the file. Once the file is open, go to **Tools | Security | Set Database Password...** and type in your new password. (NOTE: passwords within Access are case sensitive and files will be unrecoverable if you lose or forget the password to your files.) Now, you will be required to enter a password every time anyone tries to open the file.

If you would like to remove or replace an existing password, go to **Tools | Security | Set Database Password...** and enter your password. This will remove password protection, so you will have to follow the directions above to create a new one.

Network Security (User-level Security)

NOTE: This section is for advanced users only who feel comfortable working with the Windows 95/NT operating system platforms. Please consult your system administrator to make sure this procedure is necessary/allowed.

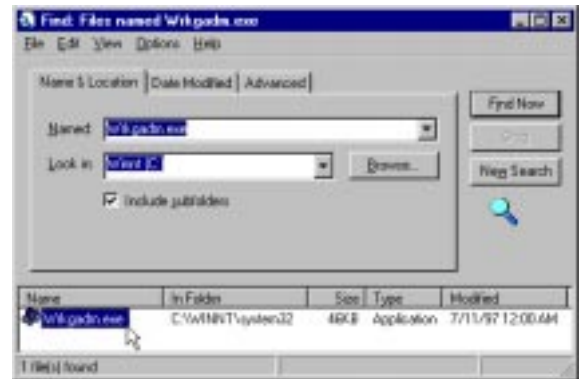
Access can share your database files with others if you are connected to a network. This allows for simultaneous use of a single file and individual or group restrictions to help customize accessibility to your files.

Four things must be done in order to accomplish this:

1. A workgroup must be created in order to share files and hold logon/password information
2. A logon procedure must be established
3. Security Administration account must be created to assign access rights
4. The database must be secured

Creating a Workgroup

Creating a workgroup requires that you work outside of the Access application to complete the procedure. Go to the Start button and select **Find | Files or Folders...** Search for the Workgroup Administrator utility (Wrkgadm.exe). Double-click the file when it appears and use the **Create...** button to make your new workgroup.



You may enter any information you like in the Name, Organization, or Workgroup ID fields; just make sure you remember all the information you provide in case you have to recreate the group/accounts. Once you fill in each field, click **OK** and you will be prompted to save the workgroup profile file. Click **OK** to confirm your save location and **OK** again to save the file.

Creating a Logon Procedure

You must now make sure anyone trying to access your file must go through a login and password confirmation. Go to **Tools | Security | User and Group Accounts**. Select Admin from the Name field in the User area. Switch to the Change Logon Password tab and enter and retype a new password. (Remember: Passwords are case sensitive and will prevent you from accessing a file if forgotten or lost.) Click **OK** to establish your new password.

Creating a Security Administrator Account

Even though the default Administrator account can be used to assign permissions to people trying to access your file, it is advisable that you create a new Security Administrator account to ensure that you have sole privileges to assigning access rights. Go to **Tools | Security | User and Group Accounts...** and click the **New** button to create the account. Enter a name and personal ID to identify yourself over the network and click **OK**. In the Group Membership area, select Admins from the Available Groups and click the **Add** button to add administrator rights to the Security Admin-

istrator account. Shut down and restart Access and enter the name of the Security Administrator account you just created without entering a password and click OK.

With the new account created, you can now delete the original Administrator account. Go to **Tools | Security | User and Group Accounts...** and select Admin from the Name field in the User section. Next, select Admin from the Member Of section in the Group Membership area and click the Remove button.

Securing you Database

Before we can assign access rights to the file, we must save a copy of the desired database as a secured/encrypted file. This will form the basis upon which to restrict access for the database file. Go to **Tools | Security | User-Level Security Wizard** and select which objects in the database you wish to secure and click OK. Then, select a new name for the secure database and click Ok to save. Saving a secure copy of your database effectively removes all current user permissions and encrypts the new database file.

Finally, we must set permissions for the database file. Go to **Tools | Security | User and Group Account Permissions...** and begin by selecting the appropriate grouping from the List area and the specific person or people from the User/Group Name area. Next, select the object from the Object Type field and then select the specific items to restrict from the Object Name field. You may now set the permissions/access rights to each specific element of your database using the check boxes in the Permissions area.

Joining A Workgroup

Follow the instructions on the previous page to access the Workgroup Administrator. First, click on the Join button. In Database rectangle, type in directory path for Workgroup Information File. (Note: This information must be given to the user joining a workgroup by a database Security Administrator.) Click on OK. Click on Exit button