

Access Users Group San Diego  
Database Design & Documentation in Access 97  
Presentation by Ofer Shimrat

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I appreciate the opportunity to present today's topics. I will briefly review the following aspects of Microsoft Access 97:

- Database **Design** Process.
- First, Second and Third **Normal Forms**.
- Variable **Naming Conventions**.
- The **Add-In Manager** and its usefulness in assisting with database design.
- The **Documenter** and its relevance during code writing and debugging.

## Database Design Process

1. Determine the purpose of your database:
  - Gather the forms currently being used to record data manually
  - Who will be using this database
  - What information will the database store
  - How will the database be used
  - Sketch out the reports you would like it to produce
2. Determine the tables you need:
  - Separate tables into fundamental subjects you want to track
  - Keep the information in each table about one subject
  - Consider fewer fields and more records
3. Determine the fields you need:
  - Relate each field directly to the subject of the table
  - Don't include derived or calculated data
  - Include all the information needed to satisfy the subject matter
  - Store information in the fields in its smallest logical parts
  - Pay close attention to Primary Key Fields (no duplicates nor nulls, smallest field size, ..etc.)
4. Determine the relationships:
  - One-to-many - most common
  - Many-to-many - specify relationship directions and break down into one-to-many
  - One-to-one - most unusual
  - Pay close attention to Primary keys and Foreign keys
  - Plot your relationships and analyze them for increased efficiency
5. Refine your design:
  - Enter records in tables for testing
  - Eliminate data duplication and streamline tables
  - Add or modify fields and tables as needed

## Normal Forms

Normalization is the process of organizing data in a database. The rules associated with normalization are designed to make the database more flexible by *eliminating* two factors:

- **Redundancy**
  - ❑ wastes disk space
  - ❑ creates maintenance problems
- **Inconsistent Dependency**
  - ❑ makes access to data difficult and illogical
  - ❑ the path to that data via relationships is missing or broken

Amongst the important standards for databases lie three general rules for database normalization. Each rule is called a "normal form". As each rule is observed, the database then adheres to that form - i.e. if the First Rule is observed, then the database is said to be in "first normal form".

1. First Normal Form
  - Eliminate repeating groups in individual tables
  - Create a separate table for each set of related data
  - Identify each set of related data with a Primary Key
2. Second Normal Form
  - Create separate tables for sets of values that apply to multiple records
  - Relate these tables with a foreign key
3. Third Normal Form
  - Eliminate fields that do not depend on the key

## Variable Naming Conventions

### *Benefits*

- Normalizing and maintaining compatible data types across tables and relationships
- Passing variables of the correct data type to procedures
- By creating a prefix it helps insure no conflict with Access reserved words
- When naming, use no *dashes*, *underscore* nor *spaces* for eventual SQL compatibility

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Type *Prefix*

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Table	<b>tbl</b>
Query	<b>qry</b>
Form	<b>frm</b>
Sub-Form	<b>sfrm</b>
Report	<b>rpt</b>
Sub-Report	<b>srpt</b>
Macro	<b>mcr</b>
Module	<b>mod</b>

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Type *Prefix*

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Active X Control	<b>acx</b>		
Application	<b>app</b>		
Check Box	<b>chk</b>		
Combo Box	<b>cbo</b>		
Command Button	<b>cmd</b>		
Control	<b>ctl</b>		
Currency	<b>cur</b>		
Database	<b>db</b>	<b>dbe</b>	<b>dfs</b>
Double	<b>dbl</b>		
Field	<b>fld</b>		
Frame	<b>fra</b>		
Image	<b>img</b>		
Index	<b>idx</b>		
Integer	<b>int</b>		
Label	<b>lbl</b>		
List Box	<b>lst</b>		
Long	<b>lng</b>		
Object	<b>obj</b>		
Option Group	<b>opt</b>		
Radio Button	<b>rad</b>		
Recordset	<b>rcd</b>	<b>rst</b>	
Single	<b>sgl</b>		
String	<b>str</b>		
Tab Control	<b>tab</b>		
Text	<b>txt</b>		
Toggle	<b>tgl</b>		
Variant	<b>var</b>		
User-defined	<b>usr</b>		

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## The Add-In Manager

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There are three ways (that I know of) to add an Add-In in Microsoft Access 97:

1. The Add-In Manager under the Tools Drop Down Menu **within** MS Access 97
2. Add-In installation **outside** of MS Access 97 via Office or Access Setup
3. Add-In installation **outside** of MS Access 97 via standalone executable or self-extracting file

Depending on how the Add-In is obtained determines how it will be installed. Chances are that an Add-In downloaded from the Internet can, depending on its contents, be installed using method 1 or 3 above while certain Add-Ins using method 2 are part of the **custom** installation of Office 97 or Access 97. I will discuss Add-Ins that conform to methods 1 and 3 above:

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### Example of Procedure 1: ertool97.exe

In general, to install or uninstall menu add-ins you can install or uninstall add-ins using the Add-in Manager:

1. On the Tools menu, point to Add-ins, and then click Add-in Manager.
  - The Add-in Manager dialog box is displayed. The Available Add-ins list displays the add-ins that are currently available. An add-in is already installed if there is an X next to its name. If an add-in is uninstalled, Microsoft Access removes the X but keeps the name in the list.
2. Do one of the following:
  - To add an add-in to the list, click Add New, and then specify its location.
  - To install a currently available add-in, click the add-in name in the Available Add-ins list, and then click Install.
  - To uninstall a currently available add-in, click the add-in name in the Available Add-ins list, and then click Uninstall.
3. Click Close when you've finished.

Note: You should uninstall an add-in before opening it as a database to modify its design.

The Error Search Tool Add-In for Microsoft Access 97 is a resource for locating error descriptions and error numbers. It also lists associated Help topics for Microsoft Access 97 and Microsoft Jet database engine 3.5 error messages. You can store notes and record relevant Knowledge Base article with each error also.

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ErTool97.exe contains the following files:

- ErrTool97.hlp      The Error Search Tool Help file.
- ErrTool97.cnt      A contents file used by the Help file.
- ErrTool97.mda      Error Search Tool Add-in.
- Readme.txt        This text file with information and installation instructions.

The Error Search Tool Add-In for Microsoft Access 97 requires that you have Microsoft Access 97 installed on your computer or that you have a workstation installation of Microsoft Access 97. For complete functionality, the tool also requires that the following two Help files be installed on your computer:

- VENELR3.HLP
- JETERR35.HLP

If you are not certain both of these files are installed on your computer, you can search for them. To do so, on the Start menu, point to Find, and then click Files Or Folders. If the files are not installed, you can install them by running the Microsoft Access 97 or the Microsoft Office 97 Setup program in Maintenance mode and selecting Add/Remove components. They will be installed by selecting the "Help Topics" category.

In order for the Hyperlink features to work properly, you must have access to the Internet from your PC or workstation.

**WARNING:** You cannot use the Error Search Tool in an earlier version of Microsoft Access. The reliability of the tool is not guaranteed in any future release of Microsoft Access.

The following instructions will take you step by step through installing the Error Search Tool Add-In for Microsoft Access 97.

1. Copy the ErrTool97.mda, the ErrTool97.hlp and ErrTool97.cnt files to your Office subdirectory or wherever the Microsoft Access executable file is located. By default this directory is usually located in the following location:

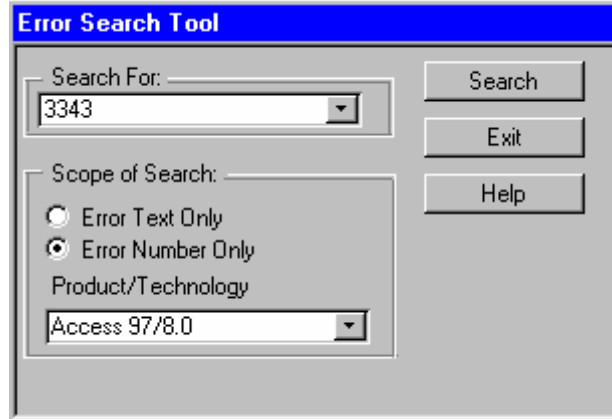
C:\Program Files\Microsoft Office 97\Office

2. In Microsoft Access 97, open an existing database, or create a new one.
3. On the Tools menu, point to Add-Ins, and click Add-In Manager.
4. In the Add-In Manager dialog box, under Available Add-Ins, select ErrTool97, and click Install. If ErrTool97 is not an available Add-In, click Add New, and locate the ErrTool97.mda file on your hard drive.
5. Close the Add-In Manager.

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6. To start the Error Search Tool Add-In, on the Tools menu, point to Add-Ins, and click Error Search Tool 97.



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Example of Procedure 3: prels80.exe

An example of how to perform an Add-In installation **outside** of MS Access 97 via standalone executable or self-extracting file is the Print Relationships Add-In:

1. Download the prels80.exe file onto your hard drive or diskette from:

<http://support.microsoft.com/support/access/content/97downloads.asp>

2. Double click it and follow the instructions on your screen.

### Other Indispensable Access 97 Web Sites

- <http://support.microsoft.com/support/access/content/faq/faq97.asp>
- <http://www.access-developer.com/>
- <http://www.deja.com/~access/j.xp?j=access>
- [http://www.microsoft.com/accessdev/a-tips.htm?MSCOMTB=ICP\\_Access|Tips](http://www.microsoft.com/accessdev/a-tips.htm?MSCOMTB=ICP_Access|Tips)
- <http://home.att.net/~dashish/>
- <http://gak.webring.com/cgi-bin/navcgi?ring=accessring;list>

### Quote for Today

To err is human, but to really foul things up requires a computer.

Anonymous

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