



“Ask the CRM”

- Bob Dalton, CRM

Question:

I would like to develop a database to manage my department records. Do you have any suggestions?

Submitted by: a Client

Response:

This is a question that I have been asked over the years by clients and by students in a class that I taught at a local college. This is not an uncommon question from people working in small to medium-sized organizations that do not have a formal records management program. This article will be in three installments.

Part I

One of the questions I would ask would be “Do you need an automated index to manage your records?” My answer is; “depending on the complexity and/or the type of the records system you have developed”.

There are two types of collections:

1. A “direct access system” that allows one to go directly to the files without the need of an index. Records filed by location or by client records filed in alphabetical order are examples of this type of system.
2. An “indirect filing system” or alpha-numeric system is based on a special filing code including letters and numbers. In either case, an index of some sort may be necessary to locate and retrieve files. Photograph files and engineering drawings are examples of records that may require an index.

I have observed a wide variety of indexing schemes using simple tools like Microsoft Word, Excel, Access, SharePoint and the more formal records management programs developed by commercial firms to manage corporate and public sector records. Each of the following type of software: Microsoft Word, Excel, Access, SharePoint may be utilized to develop an indexing scheme. It all depends on what you expect of the index; i.e., the amount and/or complexity of detail required and the retrieval needs of the users of the records.

For those interested in a more robust document management program the following government web site “<http://jitc.fhu.disa.mil/recmgt/index.htm>” contains a listing of commercial vendors who have developed document management programs that are certified under Department of Defense Standard 5015-02. The site is the Joint Interoperability Test Command (JITC) Records Management Application (RMA) organization. The JITC performs testing of RMA products for compliance with Department of Defense (DoD) 5015.02-STD. It is (DoD) policy that only compliant products be

acquired by DoD organizations. Products that have been successfully tested are listed in the compliant [Product Register](#). It is noted that there are other products on the market that are not DoD certified that may be acquired to manage an organization's business records.

For organizations without the funding resources to acquire commercial software:

- You may easily develop a table in Microsoft Word that has a file code or numbering scheme, titles, authors and dates. You may use the Edit/Find button to locate records within the search parameter. Microsoft Word would be a simple solution for a small collection.
- Microsoft Excel may also be used quite effectively in managing collections of files. It also has some other attributes for indexing, sorting, data entry input and printing of indexes that are lacking in Microsoft Word.
- For organizations that may have the need for a more complex system or multiple systems to manage their records and are unable to secure funding for one of the professionally developed vendor document management systems I recommend evaluating Microsoft Access. If Microsoft Office is the organization's software standard and the agreement includes Microsoft Access as part of the software package, you may have hit a mini-jackpot. The bigger jackpot would be if the Information Services/Technology Department also had the technical staff with experience working with Access and provide support in developing the program and on-going support for the maintenance of the software.

If the Information Services/Technology staff cannot support you by assisting in the development of a filing system, but is willing to manage the software (maintenance, upgrades, and backups), and you still want to pursue the development of a system, ask yourself the following questions:

1. Do I have the computer skills to proceed with this project?
2. Do I have the time to develop a system?

If the answer is yes to both questions, you are on your way to starting the development of a system.

If the answer to question #1 above was "no", do you have the time and patience to learn? If yes, proceed. If not, you might want to back off and try using Word or Excel.

If the answer to question #2 above was "no", could you take the time to develop an indexing system? If not, you might also want to back off and try using Word or Excel.

If you still want to proceed but feel your computer skills may be lacking you might consider attending a course on Microsoft Access at your local college, take advantage of in-house training at work, or purchase a textbook on Access at almost any bookstore to improve your skills.

I purchased a copy of a textbook titled "Microsoft Office Access 2007 Illustrated Complete" by Lisa Friedrichsen, published by Course Technology, Thomson Learning. Being a visual learner I found the illustrations in her books very useful in the development of my program. I also keep a copy of "Microsoft Access 2002; Fast and Easy", published by Prima Publishing, 2001 in my library and use **these** books extensively when I run into a problem.

In Part II, I will discuss a simple database design and the data fields that I have used for a generic database to manage the business records of an organization.

Enjoy....BobD

Note: My thanks to Barbara Werelius, Records Manager and Czar at Tacoma Public Utilities, for her assistance in the development of this article.



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Part II – Creating a Database with Access

In the previous article, we reviewed some of the requirements that would be needed to develop a simple indexing system using Microsoft Access. The basic requirements are: (1) computer skills and (2) time to develop a system. In Part II, we will discuss designing a simple database that may be used to manage a collection of records, in office and off-site.

However, I still recommend the purchase of document management software in lieu of developing an in-house system. While your organization may have a qualified information management professional with a Microsoft Access background, a document management system is a very complex program, developed by experts employed by companies that are in the business of providing this type of service.

If you still want to proceed, the first and most important goal in developing a database/finding aid is identifying the information you want to capture. I cannot over-emphasize how critical this phase of the project is if it is to be successfully implemented. You need to consider the following:

- What is the purpose of the database?
- What information do you want to capture?
- Make a list of the field names and what data type the record will be (date, text, currency, number, memo, etc.). Pay particular attention and place the fields in a logical flow for data entry. Example: If you are entering information from a form, you want to design the fields for data entry in the same flow as the form entries.
- Determine the types of reports you want to produce.

The books on Access mentioned in **Part I** at the end of this article will help you in the development of the program with examples of data fields and data types (Numbers, Text, Data/Time, Memos, etc.)

Remember: I try to limit and/or establish only the basic information needed to manage the document. Do not be tempted to add additional fields in your table just in case. Keep it simple if at all possible. I have found in the past the tendency to capture too much information.

Creating a Table in a Database

A **database** is a collection of information associated with a topic (for example, sales of products for customers). The smallest piece of information in a database is called a **field**, or category of information, such as a customer's name, city, state, or telephone number. A **key field** is a field that contains unique information for each record. A group of related fields, such as all demographic information for one customer, is called a **record**. In Access, collection of records for a single subject, such as all the customer records, is called a **table**.¹

The following tables will be created:

- Table for file management.
- Table to manage boxes in storage
- Table to manage retention

File Management Table

The database table below developed in Microsoft Access will allow the user to develop the basic information to manage their files to:

- Produce reports (listings) of records in the database (by department, function, file code).
- Print file folder labels.
- Produce destruction notices.
- Produce transfer notices for off-site storage facilities or your state archives by modifying or adding fields to the database.
- Searches by keyword.
- Create indices.

An example of a table in Access design mode with fields and data types to capture a single record of information:

Field Name	Data Type	Description
Rcd_Id	AutoNumber	
Rcd_FileCode	Text	Alpha/Numeric Field
Rcd_Title1	Text	
Rcd_Title2	Text	
Rcd_Title3	Text	
Rcd_DateorSeqFr	Text	Beginning Date/Sequence Range *
Rcd_DateorSeqTo	Text	Ending Date/Sequence Range *
Rcd_Memo	Memo	Memo Field for expanded information
Rcd_Atch	Hyperlink	Provide capability to attach pictures, documents, spreadsheets, etc.,
Rcd_Dept	Text	Department/Function Owner
Rcd_SysDt	Date/Time	Date entered into the system. Used for quality control and label creation.
Rcd_Status	Text	Records Status (Active, Inactive, Transferred, State Archives)
Rcd_TransDt	Date/Time	Date transferred to another location (Archives, Storage)
Rcd_TransBC-Box	Text	Barcode Number or Box Number
Rcd_RevDt	Date/Time	Records Review Date of Inactive Records
Rcd_DestDt	Date/Time	Date Record Destroyed

Figure

1

* You may want to create a separate field for each field, i.e, one for dates and one for sequence ranges.

I am assuming that you have a basic idea of the definition of a field and data type. Simply stated they are: (1) Field Name: The name assigned to each field in a table, and (2) Data Type: the type of information that will be entered into the field.

While in the Design mode for your record table you may specify default entries to speed up data entry. Examples:

- How you want the date to be entered – 1/25/2011, Jan 25, 2011, 1-25-11.
- How you want the telephone number to be entered: (253)-229-4xxx
- How you want the Social Security Number to be entered: 111111111 or 111-11-1111.

If you noticed, I start the field name with a specific identifier (Rec_*) to denote the table I am working with, for example: At a later time you can learn to create a query to join the two tables to provide information for reports, etc.

You can add additional fields to the table for specific types of records being created. For example, you could add a field to denote the record being retained is a tax record or held under a litigation hold. This could be useful when you are conducting queries.

Again, I am assuming that your organization has an established records management program and your records have been inventoried and a file classification system established as the Rec-FileCode reflected in the File Management Table (Figure 1) and utilized in both the Box Management Table (Figure 2) and Retention Management Table (Figure 3) for the creation of the destruction notice. If you are going to use the full potential of the three tables, then the file code is required. Some resources on conducting an inventory can be found on my blog at askthecrm.blogspot.com.

Note: As I am not a professional programmer I do not write computer code for the programs I develop. I utilize only the existing program wizards provided in Microsoft Access to develop the queries, forms, and reports.

If you have completed the table, exit and save the table, then open the table and try entering data into the table to see if you have the necessary fields to effectively manage your records. Experiment with some of the capabilities of Microsoft Access and create forms, reports, queries using the Wizard functions in MS Access. Do the same for each of the tables that are being developed.

Box Management Table

The box management database table below will allow the user to data enter information about boxes to be sent to storage:

- Created transfer notices for internal and/or external commercial records storage.
- Create indices of boxes in storage (all, by department or function).
- Listings to be used for records retention reviews.
- Number of boxes in storage by user, for possible chargeback storage costs.
- For budgeting purposes the number of boxes being sent to storage and destroyed (annually).

Field Name	Data Type	Description
Box_Id	Auto Number	System number
Box_BC	Text	Barcode or Shelf Number
Rec_FileCode	Text	Alpha/Numeric Field
Box_Dept	Text	Department/Function Owner

Box_DateFr	Date/Time	Beginning Date of Records within box
Box_DateTo	Date/Time	Ending Date of Records within box
Box_SeqFr	Text	Alpha/Numeric Field
Box_SeqTo	Text	Alpha/Numeric Field
Box_Desc1	Text	What records are within the box
Box_Desc2	Text	What records are within the box
Box_TransDate	Date/Time	Date Transferred to storage
Box_Status	Text	Active, Inactive, Out, Destroyed, etc.,
Box-RvwYr	Text	Year box to be reviewed
Box_DestDate	Date/Time	Date Box Destroyed

Figure 2

Retention Management Table.

The retention management database table below will allow the user to enter data on the retention periods and legal information for each record type entered in your file and box management tables. If created, it will provide the information to:

- Create destruction notices by creating queries on fields within different tables (Rec & Box), then creating a report that will produce a destruction notice..
- Create library of legal citations that reflects the minimum legal requirement for the retention of the record series.
- Using a hyperlink to the legal citation instead of a paper copy. A click of the hyperlink will provide direct access to the source document (citation) where it is officially maintained. I highly recommend a review of the link on a yearly basis to insure the citation is current.

Field Name	Data Type	Description
Ret_Id	Auto Number	System number
Rec_FileCode	Text	Alpha/Numeric Field
Rec_Title1	Text	Alpha/Numeric Field
Ret_Jur	Text	Jurisdiction: Fed, State, Local
Ret_Cit	Text	Enter Citation Number
Ret_Title	Text	Enter Citation Title
Ret_Ret	Text	Enter Citation Retention
Ret_OrgRet	Text	Enter Organization's Retention Period
Ret_Atch	Hyperlink	Enter a hyperlink to citation
Ret_SpecType	Text	Enter type of record: (T)ax, (A)rchival, (O)ther
Ret_Other	Memo	Enter any other special information

Figure 3

Following the guides in the books suggested in the previous article, you should be able to design a simple database as your document management system that will provide you with a finding aid for search and retrieval of your business records. Additional resources by Lisa Friedrichsen listed below:

Course Guide: Microsoft Office Access 2003 Intermediate

<http://www.nextag.com/Courseguide-Microsoft-Office-Access-1230111993/prices-html?nxtg=104d0a1c0514-DAC9E240DD136C54>

Microsoft Office Access 2007: Illustrated Course Guide, Basic

<http://www.nextag.com/Microsoft-Office-Access-2007-1230447378/prices-html?nxtg=104d0a1c0514-DAC9E240DD136C54>

Microsoft Access 2010: Basic

<http://www.nextag.com/Microsoft-Access-2010-Basic-1231951266/prices-html?nxtg=104d0a1c0514-DAC9E240DD136C54>

In Part III I will discuss queries and creation of data entry forms from the data being captured in the tables above.

Bob Dalton, CRM of Dalton Consulting

Note: My thanks to editor, Barbara Werelius, Records Manager and Guru at the Tacoma Public Utilities for her assistance in the development of this article. Other articles by Mr. Dalton can be reviewed and copied at his BLOG site: askthecrm.blogspot.com.

ⁱ Lisa Friedrichsen, Microsoft Access 2000 Illustrated Series Introductory, Course Technology, 2000, page A-4



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Part III – Creating a Database with Access

In the previous articles, we reviewed some of the requirements needed to develop a simple indexing system and created a table in Access design mode with the fields and data types needed to manage a collection of records, both on-site and off-site, using Microsoft Access.

In Part III of this series we will create examples of simple data entry forms and reports that utilize the query and report wizard function in Microsoft Access. If you are not familiar with Microsoft Access, I recommend that you purchase the books suggested in Part I and Part II. They should provide you with the tools necessary to develop the examples below and other, more complex queries, forms and reports.

While I am currently using Microsoft Access 2007, my clients are using both 2003 and 2007 versions. Once clients upgrade their systems to Microsoft Access 2010 I will upgrade my system.

The book that I often use as a resource for Access is “Microsoft Access 2000 Illustrated Introductory”, by Lisa Friedrichsen, because of the excellent examples shown on the development of Queries. Also, in previous articles I noted that I am a very visual learner. I need to see how the program works to understand it.

Forms

Forms are created to provide an easy-to-use data entry screen for each record being entered into the database. The Figure below is a data entry form developed to manage boxes in a storage facility (on-site or off-site) and created in the design mode based on the attributes of the box table. Note that the form flow is exactly in the same sequence as the box data table shown in Part II.

Once you have created the form you may also add other tools that will enhance the functionality of the form. Examples are:

- A duplication box that will allow you to quickly duplicate the current entry so you can modify only the information that is changed.
- A print box that will print a copy of the form of the record you have entered into the system.
- A search box that will allow you to search the box database to find specific records within the fields selected.
- An exit box to take you to another menu and/or exit the database.

Box Storage Data Entry Form

Box_ID	Box_BC	Box_FileCode	Box_Dept
1	11111	704	Planning
Box_DateFr	Box_DateTo	Box_SeqFr	Box_SeqTo
1/1/2001	12/31/2001		
Box_Desc1			
Database Planning Project - J2001-01			
Box_Desc2			
Box_TransDate	Box_Status	Box_RvwYr	Box_DestDate
1/1/2004	I	2012	

Figure 1

This form contains the same data used by a commercial vendor for transfer of boxes from your office to their storage facility. You are probably asking yourself: 'why not use the vendor's form?'. There is a simple answer. I hate to have to re-key anything. Once you have entered the box data into your system, you can use the information to create and print the data in a format acceptable to the vendor.

Queries

A query provides the user with a spreadsheet view of selected fields created in the tables in Part II. The use of queries enables the user the ability to create a listing (datasheet) of specified fields and records from one or more tables. With practice you should develop the skills to edit, navigate, sort, find and filter a query's datasheet and save the query for future use. You will find it specifically helpful in the development of reports.

Using Microsoft Access query wizard you should be able to extract specific data that will provide the information necessary for creation of reports for management of the box collection. Some examples are:

- Extract and print the box database in barcode number (shelf location) or alpha order.
- Extract and print the box database information by Department or File Code.
- Extract and print reports for annual reviews for destruction of records.
- Create search and print queries for different type of records within the database for clients.
- Extract and print annual projection of storage needs based on current box storage requirements.
- Charts can be designed from the data in Access or exported to Microsoft Excel.
- All reports can be exported to Microsoft Word (.doc), Adobe (.PDF), and other formats.
- Creation of Certificates of Destruction for boxes that have been destroyed.
- Advanced user can design macros to send reports via e-mail.

In the Figures below we used the Query Wizard and selected 6 fields from the **Box Table** that we developed in Part II of this article.

Field	Box_BC	Box_FileCode	Box_Dept	Box-DateFr	Box_DateTo	Box-RvwYr
Table	<i>Box Table</i>	<i>Box Table</i>	<i>Box Table</i>	<i>Box Table</i>	<i>Box Table</i>	<i>Box Table</i>
Sort						
Show	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria						
or						

Figure 2

When you run the query a listing of all records in your system would be reflected as shown in Figure 3 below:

Box_BC	Box_FileCode	Box_Dept	Box-DateFr	Box_DateTo	Box-RvwYr
11111	704	Planning	1/1/2001	12/31/2001	2012
11112	101	Actg	1/1/2004	12/31/2004	2011
11113	402	HR	1/1/2004	12/31/2004	2011

Figure 3

By inserting requirements (sort, show and criteria) in the Query in design mode you can select specific information as reflected in Figure 4 below:

Field	Box_BC	Box_FileCode	Box_Dept	Box-DateFr	Box_DateTo	Box-RvwYr
Table	Box Table	Box Table	Box Table	Box Table	Box Table	Box Table
Sort		Sort Ascending				
Show	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria						<i>"2011"</i>
or						

Figure 4

When you run your Query it will reflect only the fields marked in **X** in Show and boxes with Review Year of 2011 as reflected below:

Box_BC	Box_FileCode	Box_Dept	Box-RvwYr
11112	101	Actg	2011

11113	402	HR	2011
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Figure 5

The Query function in Microsoft Access is a powerful tool for the user in the management of their document management system. Each Query can be saved, re-opened in Design mode and the criteria changed to suit the user. The results can be exported in different formats (Word, PDF, HTML, etc.), printed and/or sent via email. The Queries are also used when creating reports as shown in the next section.

Reports

The report function provides the user with the ability to design professional printouts of selected data that may contain such things as a report title block (headers), page number (footers), calculations, on the records selected from the tables and queries developed earlier. The number of reports that can be designed and published is only limited to the imagination and experience of the system user.

Using the Report Wizard you can select fields in Figure 6 from the **Box Table** to create a simple report on the boxes currently in storage as shown in Figure 7.

Field Name
Box_BC
Rec_FileCode
Box_Dept
Box_DateFr
Box_DateTo
Box_Desc1

Figure 6

Boxes in Storage					
11113	HR	402	Personal Services Contracts	1/1/2004	12/31/2004
11112	Actg	101	Accounts Payable	1/1/2004	12/31/2004
11111	Planning	704	Database Planning Project -	1/1/2001	12/31/2001

Figure 7

Some of the reports that can be created are:

- Listing of all boxes in storage by department, barcode, file code, and destruction year.
- End of year reports to departments with listing of boxes that are due for destruction review in accordance with the organization's retention schedule.
- End of year report to departments of all boxes currently in storage for their unit.

- End of year report on boxes in storage for budgeting purposes.
- Design and creation of destruction notices when joined as a query with the **Retention** and **Box** tables reflected in Part II.
- Creation of listing of boxes approved for destruction by the owner that is provided to the outside commercial storage vendor for the destruction of the boxes. The cover sheet also requests that the vendor provide a certificate of destruction of all boxes on the listing. The listing is then matched against the destruction certificate to insure all the boxes are destroyed. The **Box** table in your database is then updated to reflect the destruction date provided on the certificate of destruction using a global update in the query design mode.

Other Fields that could be added to the Retention Table are:

- A Field to denote secondary titles being used by the organization within the record series. Remember, there could more than one type of record within the primary title with different retention periods. Example: More than one type of Contracts and Agreements.
- Add a functional field to denote the primary user/owner of the record series. For example: Accounting/Finance, Human Resources, Parks & Recreation, Marketing
- Add Field for a retention period for secondary record copies. Remember other departments may have a copy of the record that can be destroyed when it is obsolete or superseded.

Note: For the purpose of this article the examples (figures) are all created in Portrait view, while I prefer to use Landscape to permit additional information

The following report is an example of a simple File Classification and Retention Report extracted directly from the Retention Table using the Report Wizard.

File Classification and Retention Report				
101	Accounts Payable	GS50-03A-02	ACCOUNTS PAYABLE 3 years AND RECEIVABLE SUPPORTING DOCUMENTS AND REPORTS	WA
402 WA	Contracts & Agreements	GS50-01-11 Rev. 1	CONTRACTS & AGREEMENTS	Retain for 6 years after termination or expiration of Instrument
704 WA	Engineering Project Documentation	GS50-13C-02	CONSTRUCTION & PLANNING PROJECT	Completion of project plus 6 years

FILES PARKS AND RECREATION

Figure 8

Reports, like the queries, can be exported in different formats (word, PDF, HTML, etc.), printed and/or sent via email.

It must be noted that the tables established in Part II were created to work independently. To have the ability to join two different tables to create destruction notices one field in each of the tables (**Rec_FileCode**, **Box_FileCode** and **Ret_FileCode**) have to be changed read **FileCode**. This will then provide the ability to join two different tables to create additional reports.

As an alternative to the development of the box database, your commercial record center vendor may provide clients access to data enter the box information directly into their system. I would check to see if

they offer the service and costs associated for the user. In addition, their system may have the ability to do searches and provide reports such as:

- Total listing of boxes in their system by barcode number, titles, file codes
- Reports for use in your review for destruction by department.
- Reports of searches conducted for clients.

In closing, for organizations that may have the need for a system to manage their records and cannot secure funding for a professionally developed document management system I recommend evaluating Microsoft Access.

I hope the resources contained in this three part article are useful in your development of a system to manage your business or agency records.

Bob Dalton, CRM of Dalton Consulting

Note: My thanks to editor, Barbara Werelius, Records Manager and Guru at the Tacoma Public Utilities for her assistance in the development of this article. Other articles by Mr. Dalton can be reviewed and copied at his BLOG site: askthecrm.blogspot.com.