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# Introduction to Microsoft Access 2007

What is Microsoft Office Access 2007? Simply put, it's the newest version of Access, a well-known and widely used relational database management system (RDBMS) for Microsoft Windows designed for building small- to medium-scale database applications. Access 2007 provides a rich set of features and tools for designing, creating, storing, analyzing, and viewing data, as well as the capability to connect to a large variety of other data sources. Access combines ease-of-use features with software development capabilities to support a wide range of user skill sets. Access also provides a Primary Interop Assembly (PIA) to allow other development platforms, such as Microsoft Visual Studio .NET 2005, to manage data using an Access database or even incorporate Access functionality into an external application.

If you're reading this book, you probably already know a good deal about Microsoft Office Access 2007 or a previous version. While this book presents the various aspects of programming Access applications using VBA code, this chapter provides an overview of Access and discusses some of the basics. Although it's possible to create and administer a database application using only code, there are also many tools for creating, designing, and editing database objects. Some of the more common tools are briefly covered in this chapter. If you've used Access before and are familiar with the visual designers and other Access tools, you can easily skip ahead to Chapter 3 to learn about the new features included in Access 2007.

## A Brief History of Access

Microsoft Access has been around for nearly 15 years. The first version of Access, Microsoft Access 1.0, was released in November of 1992. Built on top of the Jet Database Engine, Access was designed to enable users to create and manipulate Jet-compatible database applications through a variety of visual designers and a scripting language called Access Basic. Access quickly became one of the most popular database development systems for Windows and the user base started growing rapidly.

With Microsoft Access 95, the fourth release, Access was adopted as a new member of the Microsoft Office product line. This was the perfect move for the product because it allowed Access

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to integrate and leverage many great features shared among other Office applications, such as Spell Checking or the Format Painter. Access Basic was replaced with the integration of Visual Basic for Applications (VBA) across the Office applications to provide a common programming language for creating solutions using the core Office products.

By the time Access 97 was released, millions of people were using Access routinely to build applications to store and manage their personal and business data. Access 97 is still in use today by many individual and business users and it is widely regarded as one of the best releases of Access ever. Some of the key features for that release were increased Web support, the hyperlink data type, and many new wizards. For developers, the release showcased the introduction of the Object Browser, VBA class modules, source code control, conditional compilations, and programmable command bars. That's a truly compelling set of features for users developing advanced applications.

*Access 2003 VBA Programmer's Reference*, the predecessor to this book, focused on the Microsoft Office Access 2003 product, the eighth release of Access. By 2003, everyone from individual users to the United States government was using Access. Access 2003 included a number of feature enhancements, as well as new additions. XML support, Data Import, and Data Export were improved in a number of ways, and signed database projects and disabled mode were introduced for added security.

Fast-forward to the present, and you have Microsoft Office Access 2007, the ninth full release of Access. Now shipping in 38 languages, Access is used throughout the world on Windows systems everywhere. For this release, there is a large focus on ease of use, and you'll notice major changes from previous versions as soon as you boot the program. Access 2007 probably has as many new elements and enhancements as the last four releases combined, and there are a number of developer-oriented features as well. One of the largest features is a new database engine called the Access Connectivity Engine (ACE), which supports several new data types, such as Attachment fields and Complex Data. Additionally, there are a number of new form and report designers, which make building Access database solutions even faster than before. After trying out Access 2007, I'm sure you'll see that Microsoft Office Access 2007 is the absolute best release of Access ever.

## Is Access the Only Database System?

Some may ask the question, is Access the end-all to database systems? The simple answer is, "No." Access is not the only database product on the market, nor is it the only database product available from Microsoft or for Windows. There are times you might want to use a different type of database system such as SQL Server or SQL Server Express. If you've only used Microsoft Access for your database needs, you might be wondering why you'd ever need another database system. It could be argued that Access can connect to so many different types of data sources that there's no need for other front-end products. Moreover, developers could make a case that an Access database is a perfect solution for data storage for an application developed outside of the Access client, such as a .NET application that stores data in a back-end Access database. Still, there may be several reasons to use other database products, and the following sections discuss Access features, as well as other database system features, to help you choose what is right for your scenario.

## Microsoft Office Access 2007

Microsoft Access is the perfect solution for single-user applications. Access provides many built-in features for quickly and easily building forms, reports, charts, and queries to view data. The user interface



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(UI) is designed to be simple and intuitive so that even novice users can accomplish their tasks. Developers have the ability to create Macros and write VBA code to support application development. Another key feature of an Access database that is often overlooked is the storage of all database objects in a single file, which makes the database easy to distribute to others. The maximum supported database size is 2GB of data, which provides ample space for almost any personal database.

Multiple-user applications are supported by Access, although there are a number of considerations of which you should be aware. There are record-locking options that affect how data is accessed, and some operations require the database to be opened in exclusive mode, thus locking other users out of the application. The recommendation for multi-user Access applications is to create a distributable front-end database (for each user) that connects to a backend database that stores the data. For example, a front-end application written in Visual Basic can take advantage of DAO or ADO to make calls to retrieve and modify data in the back-end Access database. This type of application works well in a single- or multi-user environment, because the data is only manipulated when DAO or ADO code manipulates the back-end database. Even then, applications that have large numbers of data transactions may encounter performance limitations in the ACE database engine.

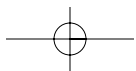
### SQL Server 2005 Express Edition

The Microsoft SQL Server 2005 Express edition is a scaled-down version of SQL Server 2005. Microsoft provides this product for free and it can be distributed for free as one of many ways to integrate data with .NET applications. It is ideal as an embedded database for small desktop applications that call for a fully functional SQL Server database, but do not require a large number of users. Some of the features in SQL Server Express include new reporting tools and many feature enhancements for data views. SQL Server supports database triggers and stored procedures, which are database features not supported by the ACE database engine, although they can be used by Access in an Access project (ADP) file.

However, database development using SQL Server Express requires fair knowledge and there is no built-in forms package. You would not be able to build a complete Windows database application using only SQL Server Express in the same way you could using Access. Probably the most common scenario for using SQL Server Express is when developing a front-end application using Microsoft .NET Framework technology, in a programming language such as C#, which connects to the SQL Server database engine to manage data. It is worth noting that a fully functioning front-end database application (complete with forms, reports, and charts) easily could be created in Access 2007 and connected to a back-end SQL database on a machine running any version of SQL Server 2005 to enjoy many of the benefits of the SQL Server database engine.

### SQL Server 2005

Microsoft SQL Server 2005 is the perfect solution for large-scale database applications. Typically, applications that require a large number of users, many concurrent connections, great amounts of data storage, data transactions, direct data security, or that need routine database backups are ideal for SQL Server. SQL Server is one of the most robust and scalable databases systems available for Windows. But, as with SQL Server Express, SQL Server requires a front-end application to be developed to allow users to access the data stored in the SQL database. All of this power comes with an associated cost. SQL Server is not free, so there is a monetary factor to consider when using it. Additionally, creating database applications with SQL Server also requires rather in-depth knowledge of database design and how to work with SQL Server. Although not the best choice for a small, end-user database solution, Microsoft SQL Server is ideal for very large databases in enterprise systems used for storing critical and sensitive business data.





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### How Do You Choose?

If you're not sure which type of database to create for your application, ask yourself the following questions:

- ☐ Will your database grow beyond 2GB?
- ☐ Are there security concerns for the data stored and used by your application?
- ☐ Is the data in your application critical or irreplaceable?
- ☐ Does your application require a large number of transactions at any given time?
- ☐ Does your database need to be accessed by a large number of users simultaneously?
- ☐ How will users work with the data from the database in the application?

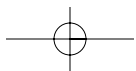
Even answering these questions won't provide a definitive solution as to which type of database you should use for any given application. Every application's data storage mechanism should be evaluated on a separate basis by gathering storage requirements and researching the application's purpose to determine which type of database management system to use. For example, if the application will need to store 1.5GB of data, store confidential data, and need to be accessed by thousands of users at any given time, you might consider employing SQL Server 2005. However, if an application requires less than 1GB of data, needs to accommodate 20 users with relatively low traffic, and must maintain low development and support costs, Microsoft Office Access 2007 is the perfect choice.

Whatever database management system you choose, be sure to adequately understand the application requirements and research database system options before beginning work. The cost of redeveloping and porting an existing system can be huge, and in many cases, much more expensive than the cost of developing the proper system initially. Doing a little research and choosing the correct system the first time almost always pays off in long-term development and support costs.

### Developing Databases Without VBA Code

This book is about automating Access with VBA code, but not everything you need to do with a database solution should be accomplished via code. Part of being a good developer is knowing how to develop an application with the most features, stability, and flexibility at the least possible cost. Access provides a powerful development environment that includes a variety of wizards and built-in tools to help improve efficiency in developing your application.

As soon as you start Access 2007, you will see immediate enhancements when compared to previous versions. Instead of a blank window, you are presented with the new Getting Started interface. It enables you to quickly open an existing database, create a new blank database, or even create a fully functional database application using the new database template feature. If the computer has an Internet connection and is online, links to Office online and its content are also present to help keep you connected to the latest resources available. You may also notice that the old Windows-style menus have been replaced by the new Ribbon user interface—the Office button, which replaces the File menu, exposes the Access Options dialog box for database and applications settings, as well as other common file options.



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### Access 2007 Database Templates

New to Access 2007, database templates are a great starting point for a simple database solution. Several different types of business and personal database templates are installed with Access and more are available from Office Online. Some of the different types of database applications you can create include:

- ☐ **Assets:** For tracking tangible items.
- ☐ **Contacts:** For tracking people or organizations.
- ☐ **Events:** For tracking important dates.
- ☐ **Issues:** For tracking assignable issues or problems.
- ☐ **Tasks:** For tracking groups of work tasks.

To create a new database using a template, click on one of the categories on the left side of Getting Started. Then click on a template in that category to select it. The template preview pane opens on the right side of the Getting Started window. If the template is from Office Online, you will see a Download button; otherwise, you see the Create button. Go ahead, choose the Business category and click on the Issues template, as shown in Figure 1-1.

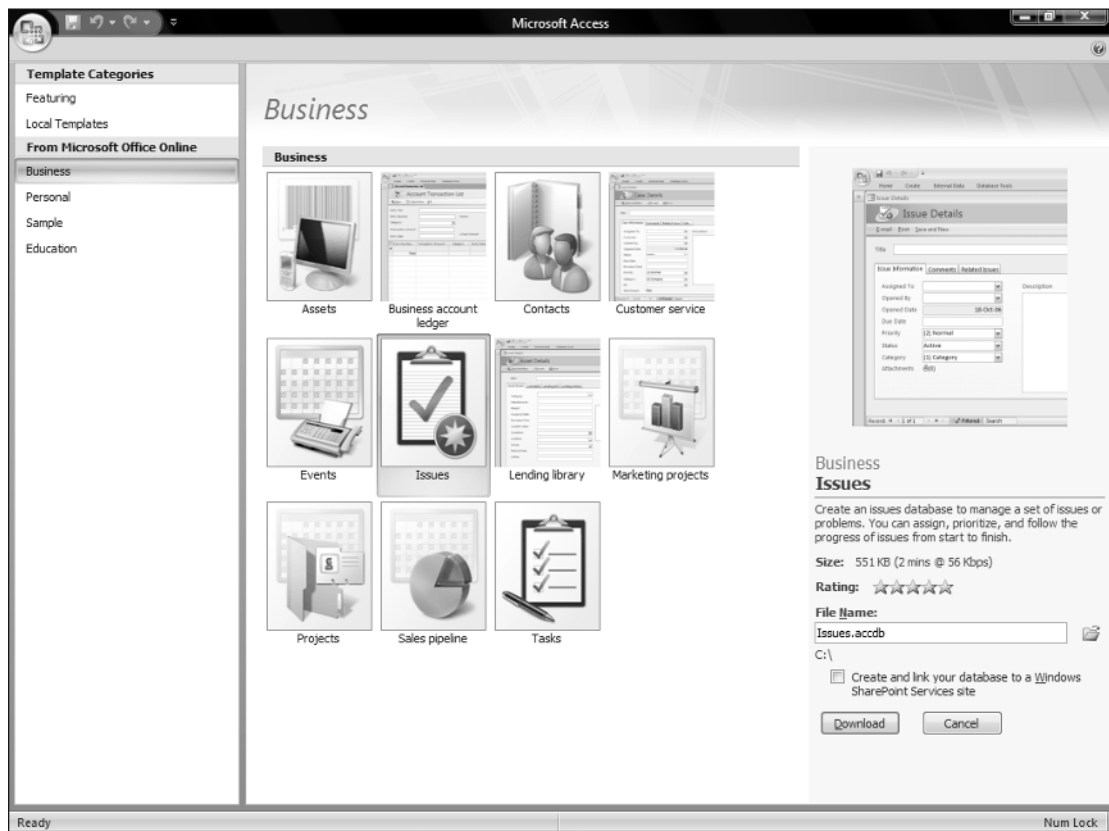


Figure 1-1

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Clicking the Download or Create button creates the new database from the template—the Issues template, in this example. Once you start the database creation process, you briefly see the Preparing Template dialog box and then the new database solution opens in the Access client window, as shown in Figure 1-2.

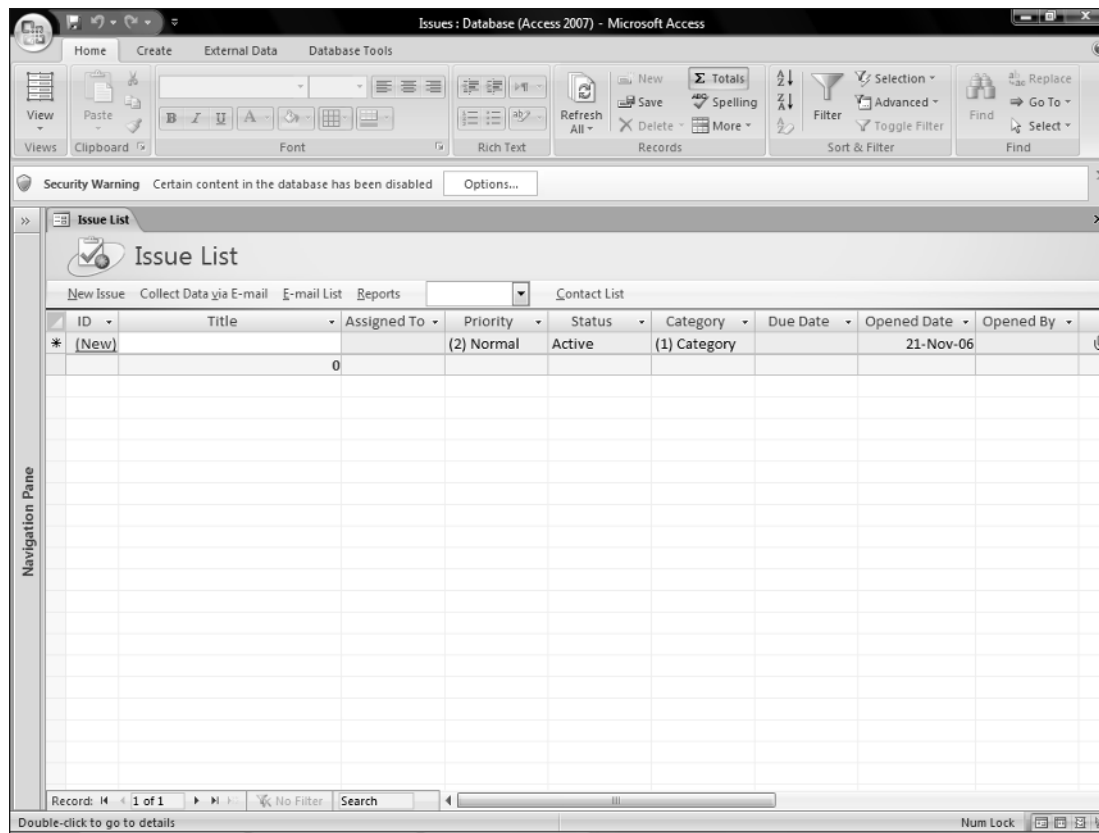


Figure 1-2

Many new Access features can be used in the Issues application just created. Among them is the Navigation pane, which replaces the Database Container window and is the primary interface for accessing database objects in Access. In the Issues database, by default, the Navigation pane is collapsed on the left side of the Access client window.

Click on the Navigation pane to expand it and see the database objects contained in the database application. Notice that the default grouping of objects is much different than in previous versions of Access. The Navigation Pane is a highly flexible and customizable feature that provides a number of methods for grouping and filtering database objects based on various properties of the particular object. In the case of the Issues database, a custom Navigation pane grouping named Issues Navigation is defined;

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it's shown at the top of the Navigation pane. Clicking the top of the pane displays the various object grouping options available in the database. Click the text that says Issues Navigation at the top of the Navigation pane and choose the Object Type option. The Navigation pane grouping now shows all of the database objects grouped by their object types, as shown in Figure 1-3.

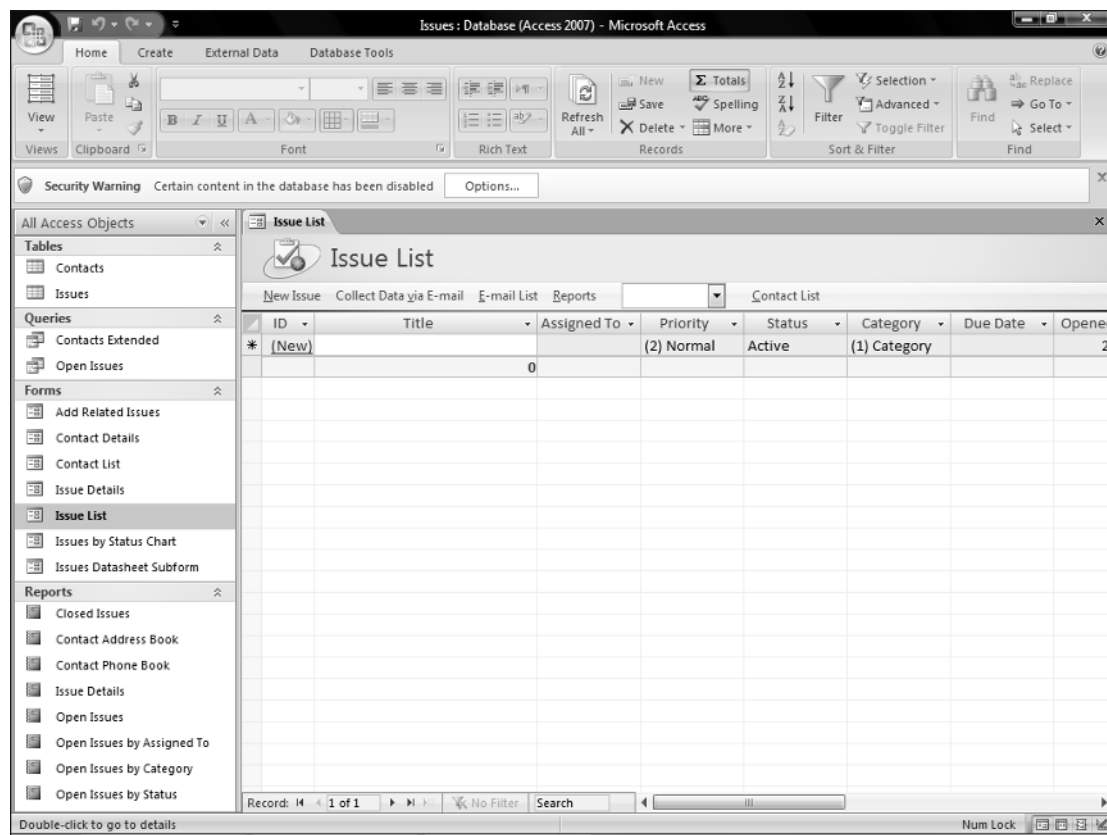


Figure 1-3

*The Issues template is the perfect example of a highly flexible, fully functional database application complete with forms, reports, charts, and queries to easily manage data. The beauty of this application is that all of the functionality has been created without your writing a single line of code in the entire application. Moreover, all of the functionality in this application can run without trusting the database itself because of the use of safe macro actions (see Chapter 22 for more information about macro security). Notice the Security Warning between the Navigation pane and the Ribbon denoting that the application has disabled some content, such as unsafe macro actions and VBA code. By default, Access 2007 opens all databases with unsafe macro actions and VBA code disabled, unless the database resides in a user-defined trusted location. Fortunately, the Issues database application leverages known safe macro actions and built-in Access features to support its functionality and is completely usable even with code disabled.*

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### Access Database Objects

With the Navigation pane grouped on Object Type, you can see that there are four different types of database objects included in the Issues database: Tables, Queries, Forms, and Reports. The Access 2007 File Format (ACCDB) actually supports eight types of database objects: Tables, Queries, Forms, Reports, Macros, Modules, Class Modules, and Data Access Pages (DAPs). All of these objects except DAPs can be created through code or through the Access user interface (DAPs are deprecated in Access 2007, but can still be viewed). There are many reasons why you would want to create database objects via DAO or ADO code in an automated fashion, but often, it makes more sense to design database objects via the Access UI. The following sections explain how to create five of the object types via the Access 2007 UI.

### Creating Tables

Tables are the backbone of any database. Because they store all of the data, designing them correctly the first time is crucial. The type of data you need to store in any given table is dictated by its purpose in the application. For example, if you need to store the date on which some event occurred, you would use a Date/Time field data type. You could use a Text field type to store a date and there may be cases where that makes sense, but most of the time, the Date/Time type will be more beneficial because it enables you to leverage the comparison operations provided by the ACE database engine, which you could not do with the Text field type.

Creating tables through the Access 2007 UI is quite easy. When a database is open, the Access Ribbon has four tabs—Home, Create, External Data, and Database Tools—by default. In previous versions of Access, you could create new tables through the UI via the Insert menu or the Database Container window. In Access 2007, you create all database objects through the UI via the Ribbon's Create tab.

Click the Create tab. The Ribbon changes to show all of the various entry points for creating Access database objects. There are four options for creating tables: Table, Table Templates, SharePoint Lists, and Table Design. Figure 1-4 shows these options.

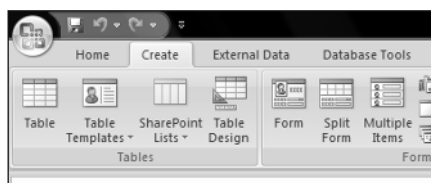


Figure 1-4

Click the Table Templates Ribbon button and the template fly-out menu appears. Click the Asset table template and a new table opens in Datasheet View mode, complete with all of the fields found in the Assets table. This is a great starting point for a new table because much of the work of setting up the table structure has already been done for you—and all it took was a few clicks of the mouse.

Now right-click the new table's Document tab and choose Design View to open the new Assets table in design mode. Because the table has not yet been saved, you are prompted for a table name to Save As. In the Save As dialog box, type in the name **Assets** and click the OK button. The Assets table is saved and opened in design mode for editing. Figure 1-5 shows the Assets table in the Table Designer.



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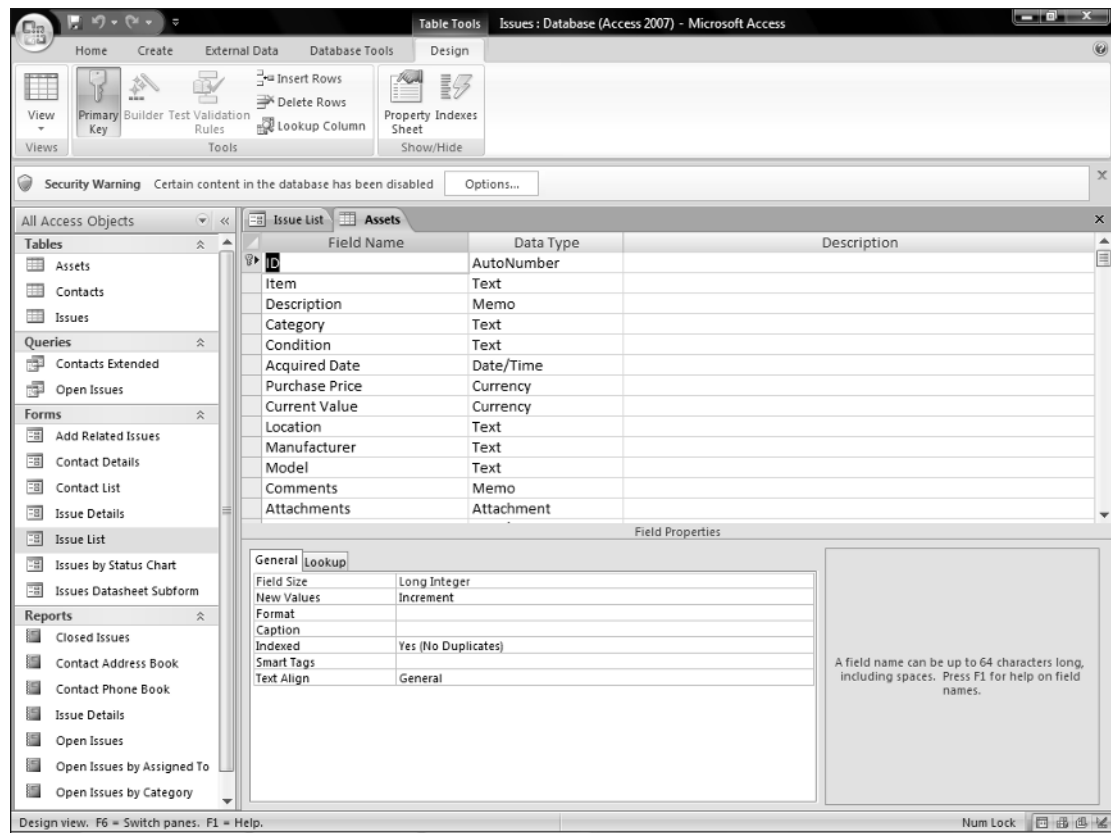


Figure 1-5

In Access 2007, ten different basic field data types are supported by the ACE database engine: Attachment, AutoNumber, Currency, Date/Time, Hyperlink, Memo, Number, OLE Object, Text, and Yes/No. In addition to these field types, ACE, and Jet databases support table field lookups to other tables through either queries or system relationships. Another new feature in Access 2007 is the capability to create complex data from certain data types (but not every data type). Complex data give the user the option to select multiple values from a value list or query for a single record. Additionally, when examining the data in the Complex Data field, all selected options can be taken as the value or each of the individual items (the scalar values) can be examined for the field. The following table provides a brief description of each data type's purpose and whether it supports complex data.

Data Type	Description
Attachment	A field type to store a collection of files for a given record. Stored as a complex data field, the complex scalar fields expose three pieces of data: File Name, File Data (the file itself), and the File Type. Stored as a complex lookup into a hidden complex scalar table.

*Table continues on next page*

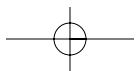


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Data Type	Description
AutoNumber	Stored as 4-byte integer that is assigned automatically when the record is created. Can be assigned as consecutive or random values. If the AutoNumber is a Replication ID, it is stored as a 16-byte GUID, instead of an integer.
Currency	Stored as 8-byte number allowing numeric range of: -922,337,203,685,477.5808 to 922,337,203,685,477.5807. The number is scaled by 10,000 to give a fixed-point number, providing 15 digits to the left of the decimal point and 4 digits to the right.
Date/Time	Stored as IEEE 8-byte, floating-point number allowing a date range of 1 January 100 to 31 December 9999. The date may also include a time value range of: 0:00:00 to 23:59:59.
Hyperlink	A combination of text and numbers stored in a Memo field type to be used as a hyperlink address. The hyperlink can have four parts: Text to Display, Address, Sub Address, and Screen Tip.
Memo	Stores any number of characters up to the limit on the size of the database, 2GB. However, text box controls and the datasheet only allow adding or editing up to the first 63,999 characters stored in the field. You need to use code to work with more than 64,000 characters in a Memo field. Only the first 255 of these characters can be indexed or searched.
Number	Provides several numeric data types dictated by the Field Size property for this type. A number field can be either an integer or floating type numbers. Supported data types are Byte (1-byte integer), Integer (2-byte integer), Long (4-byte integer), Single (2-byte scaled floating point), Double (4-byte scaled floating point), Replication ID (16-byte GUID), and Decimal (12-byte scaled floating point). Number fields can be complex data fields.
OLE Object	Stores up to 1GB of OLE object data (such as a bitmap image, Word document, an Excel spreadsheet, or some other binary data) linked to or embedded in the field.
Text	Stores up to 255 characters of text, where the field length is dictated by the Field Size property for the field. The field can be indexed and is fully searchable. Text data type fields can be complex data fields.
Yes/No	Stores a 1-bit value of 0 or -1, but can also be formatted as Yes/No, On/Off, or True/False. The size of this data type is 1 byte.

Each data has its own unique purposes, some of which overlap, so be sure to choose the data types wisely. For example, both Text and Memo field types store text characters. Because both types are searchable up to 255 characters and the memo field can hold much more than 255 characters, you might assume that all strings should be stored in Memo fields. However, if that implementation were the case, database users might encounter performance issues when running queries against large sets of Memo field data, which could be avoided by using a Text field type instead. Be sure to completely analyze the data your application will need to store so that you can plan appropriately when designing the database tables.

If you want to track when a record for the new `Assets` table is created, you need to add a new field in the table called `Created Date`. Create a new field at the end of the table by typing **Created Date** in the



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Field Name cell in the first empty row in the Table Designer. Then, for the Field Type, click the down arrow to expand the data type options and select Date/Time. Notice the Field Properties grid shown just below the list of Table Fields in the Table Designer. The `Default Value` property is a simple way to set the value for a field automatically when a record is created without having to write any code. For the `Created Date` field, set the `Default Value` property to the expression `Now()` to use the `Now` function (see Figure 1-6). Now, every time a new `Assets` record is created in the table, the `Created Date` value will be set to the current date and time.

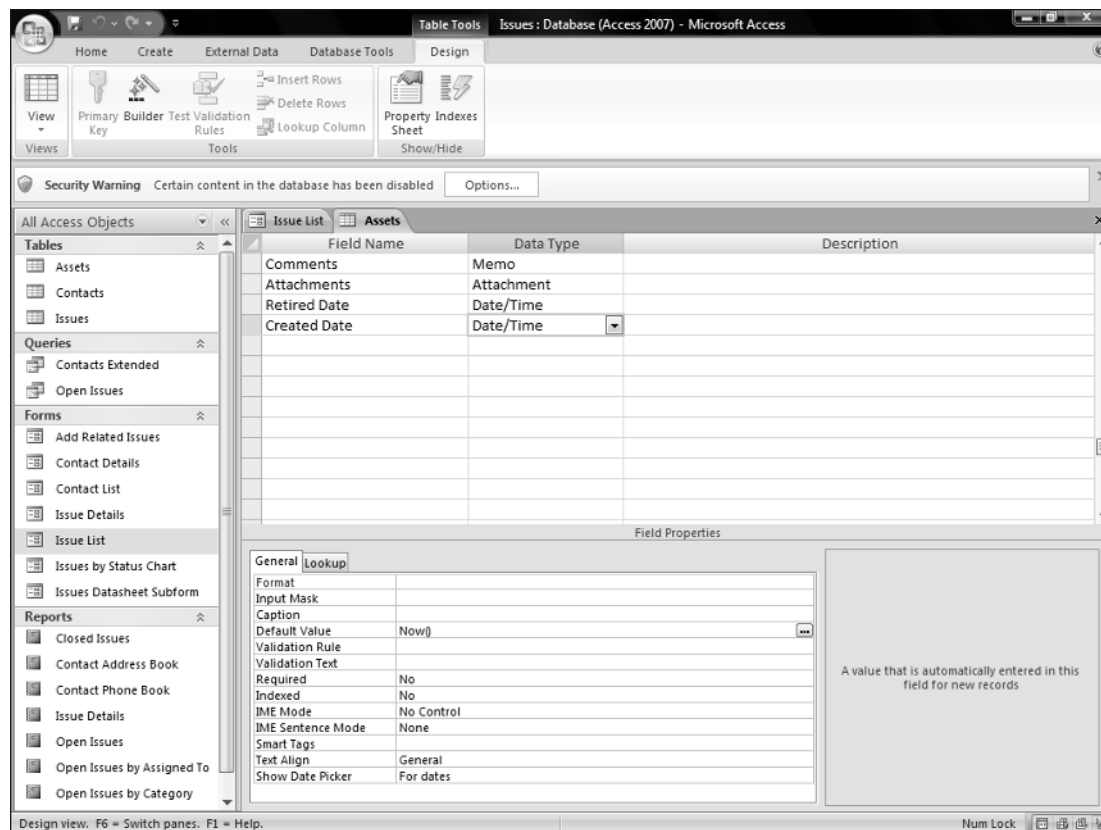


Figure 1-6

Click the Close button in the top-right corner of the table and choose to save the changes. That's an example of how you use the Access Table Designer to create tables.

## Creating Queries

Queries can be used for a wide variety of purposes such as filtering data based on certain criteria, calculating values, joining records separated by different tables, deleting records from a table, updating certain records based upon specific criteria, creating new tables, and much, much more. Now that your database has a table to store data in, you probably want to create ways to view that data. One of the

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greatest tools that Access 2007 provides is the Query Builder, which helps you develop many types of queries. If you have prior database development experience, you've probably had to write SQL statements and already know how complex they can be (and how difficult they can be to get correct). The Access Query Builder provides a graphical interface to help generate the correct SQL statement for many query types, often helping to reduce the complexity of creating accurate SQL statements.

As mentioned earlier, the Ribbon's Create tab shows all of the various entry points for creating Access database objects. In the Other section of the Create Ribbon (all the way to the right—see Figure 1-7), are two options for creating queries: Query Wizard and Query Design.

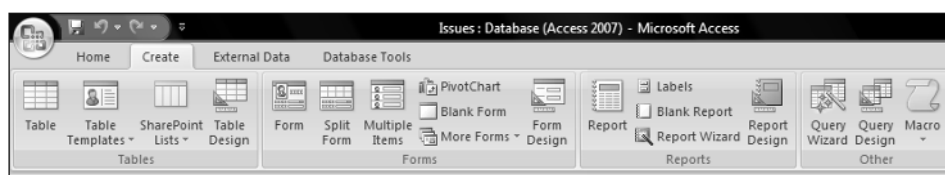


Figure 1-7

The Query Wizard button launches the Query Wizard, which was included with previous versions of Access. It helps you generate four different types of queries—Select, Crosstab, Find Duplicates, and Find Unmatched queries—through several wizard screens. While these are useful, you will find that there are many other types of queries that cannot be created from the wizard and you will most likely want to use the Access Query designer to help you create those.

Click the Query Design button in the Ribbon to open the Access Query Designer. The Show Table dialog box displays to help add tables to be used in the query. In the Show Table dialog box, click the **Assets** table, the Add button, and the Close button. A field list for the **Assets** table appears in the designer for the new query. In the field list, double-click the \* (star) field to add all of the fields in the table to the Query view. Notice that the **Assets.\*** field is added to the list of fields in the grid at the bottom of the query designer. In the field list, double-click on the Created Date field to add it to the list of fields. Click the checkbox to uncheck the Show option for the field, so that the Created Date field is not shown twice. For the criteria for the Created Date field, enter `>(Now()-7)`. Figure 1-8 shows what the query should look like at this point.

When this query is run, all **Assets** records created within the last seven days are returned in the result. Criteria values can be any hard-coded values, functions, or expressions that define some information about the records you want to select. Switch the Query to SQL View mode by clicking the SQL View mode button in the bottom-right of the Access window; you'll see the following SQL statement generated by the Access Query designer:

```
SELECT Assets.*
FROM Assets
WHERE ((Assets.[Created Date])>(Now()-7));
```

*You can also create the specific query you need for your application by writing it directly in the SQL View mode.*

Now click the Close button in the top-right corner of the new Query object. You will be prompted to save the query, so type in the name **Assets Created This Week** and click OK. The new query is added to the list of query objects in the Navigation pane.

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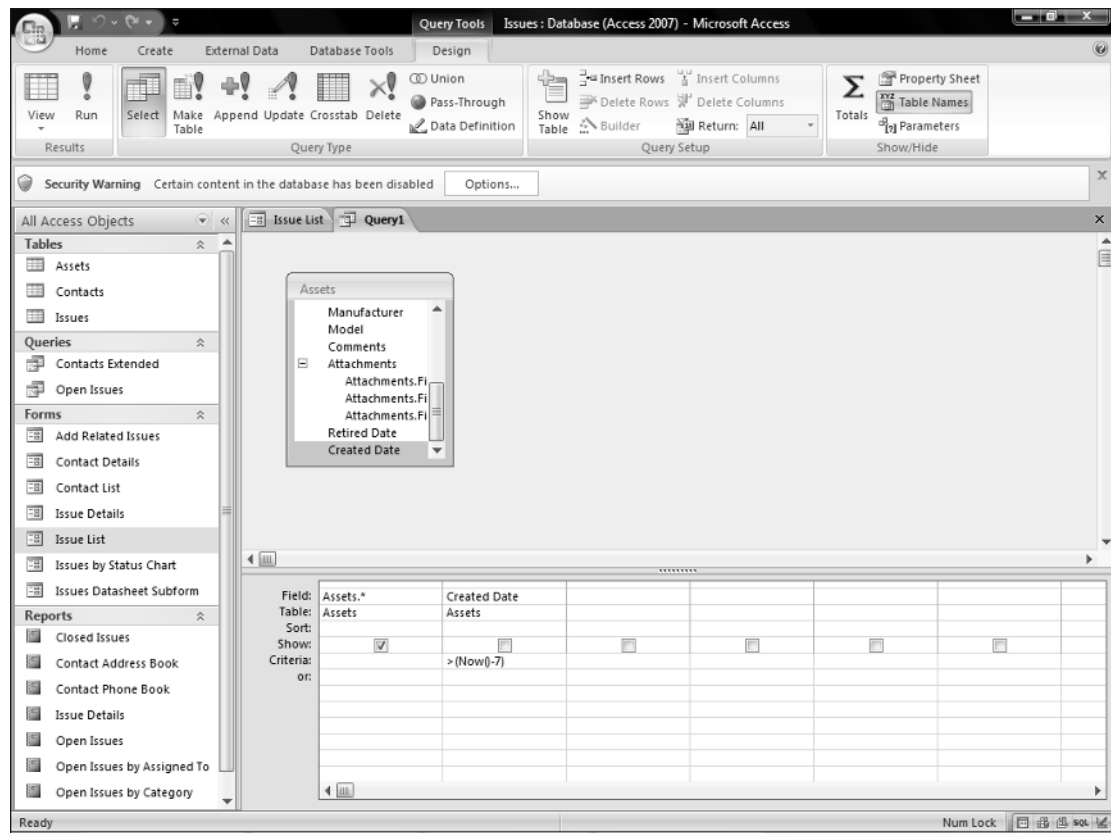


Figure 1-8

## Creating Forms

Forms are vital for allowing users to add, modify, and delete data within your database applications. Access 2007 provides an extensive forms package and several designers to afford you robust functionality for your forms. While it is quite easy to create forms via Access automation, often times, it is much more practical to build forms using the Access Form designers.

The Access Ribbon's Create tab has several options for forms (see Figure 1-9) to enable you to reduce development time by quickly creating common form types.

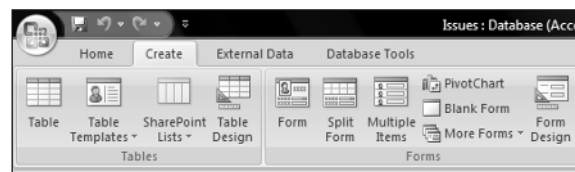


Figure 1-9

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The Create Ribbon hosts nine different options for creating various predefined form types: Form, Split Form, Multiple Items Form, Datasheet Form, Pivot Chart Form, Pivot Table Form, Modal Form, Blank Form, and Form Design. An important fact to remember is that the Form, Split Form, Multiple Item Form, Datasheet Form, Pivot Table Form, and Pivot Chart Form options will be created based upon the object that is selected in the Navigation pane. If the Navigation pane does not currently have focus, the form will be based on the open object that does have focus. For example, selecting a query in the Navigation pane and then clicking the Form button creates a new form for that query. This rule applies for Tables, Queries, Forms, and Reports that are selected in the Navigation pane. If you select any object that does not support creating one of the quick forms, such as a Macro, some of the buttons in the Ribbon become disabled. Any of the quick forms can be created in Design view mode by using the Form Design option. When all else fails, use the Design view to manipulate the form to just the right settings because all design changes can be made in Form Design mode. If you've used Access previously, you know that this used to be the only view mode available for designing forms and reports.

Click on the **Assets** table to select it in the Navigation pane and then click the **Form** button. This creates a new form in Layout View mode already populated with controls working with the fields in the **Assets** table. New to Access 2007, Layout View is a view mode for forms and reports that enables you to view data while building the new form. Figure 1-10 shows an example for the new form.

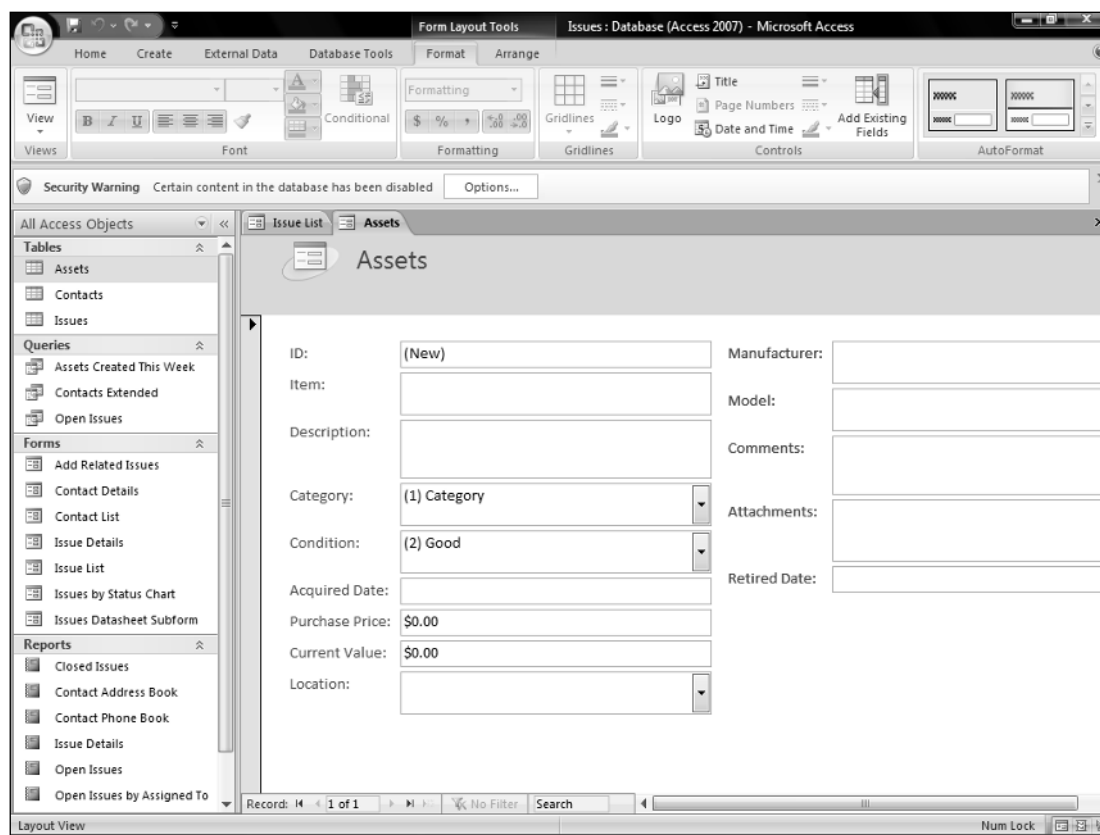


Figure 1-10

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Depending on which view mode you have open for forms and reports, you only have a certain set of tools available. Controls and several other features can be added only in Design view mode. However, Layout mode is still quite useful because of the capability to see exactly what the object will look like with real data, while you are creating it. It's also nice to see formatting changes such as image and color changes while in Layout view mode, along with seeing the actual finished form without the design grid.

Click on the Close button in the top-right corner of the form. Once again, a save dialog box displays. Type in the name **Assets Form** and click OK. The new form is added immediately to Navigation pane.

### Creating Reports

Reports are probably the most common way that users will view their data, and that's why one of the more robust features in Access is reporting. If you've used previous versions of Access, you'll notice that reporting has had a complete overhaul. Access 2007 has a slew of new reporting features that simplify common tasks to help decrease database development cost. There are two new view modes: an interactive report mode to allow users to use controls on the report and a layout mode to enable the report creator to see the data in the report while it is being created. Also, two new panes have been added: the Grouping and Sorting pane greatly improves grouping, sorting, and filtering tasks in a report, and the Design Task pane provides access to the updated Field List to allow working with more than just the fields in the record source of the form or report. In addition, there are many updates to previously existing features that were becoming archaic, such as the Auto Formats. Reporting in Access 2007 is a brand new experience for any user.

To create a new report, click on the Ribbon's Create tab of the Ribbon. As with forms, there are many options for predefined report layouts available, as show in Figure 1-11.

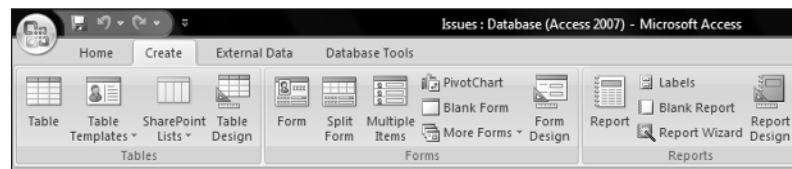


Figure 1-11

In the case of reports, you have the following options: Report, Labels, Blank Report, Report Wizard, and Report Design. As with forms, the Report and Label options are only available when Tables, Queries, Forms, and Reports are selected in the Navigation pane. If another open database object has focus instead of the Navigation pane, the report will be created based on the object with focus. Also similar to forms, certain design options are only available in Design View mode. For example, if you want to add controls to a report, the report must be open in Design mode. But, as mentioned before, the Layout view mode is extremely useful for viewing data, which helps refine report design and real estate efficiency.

Perhaps you want to create a report based on the *Assets Created This Week* query that you made earlier in the "Creating Queries" section of this chapter. Click on the *Assets Created This Week* query in the Navigation Pane to select it. Then, click the Report button in the Ribbon. A new report is created and opened in Layout View mode; it contains controls for all of the fields in the selected query. Because the report is in Layout mode, you are able to change the layout of the controls in it. All of the fields from the *Assets Created This Week* query are shown, so you may want to remove some of

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them, so that the data fits in the report all on one page. Go ahead and delete all of the fields in the report except Item, Category, Condition, and Purchase Price by clicking on the column and pressing the Delete key. Then, right-click on the Category field and choose the Group on Category option in the context menu. Notice that the Label and Grouping for the Category field is adjusted automatically (illustrating one of the many powerful grouping options available in Access 2007). Figure 1-12 shows what the report should look like with a few records of data added.

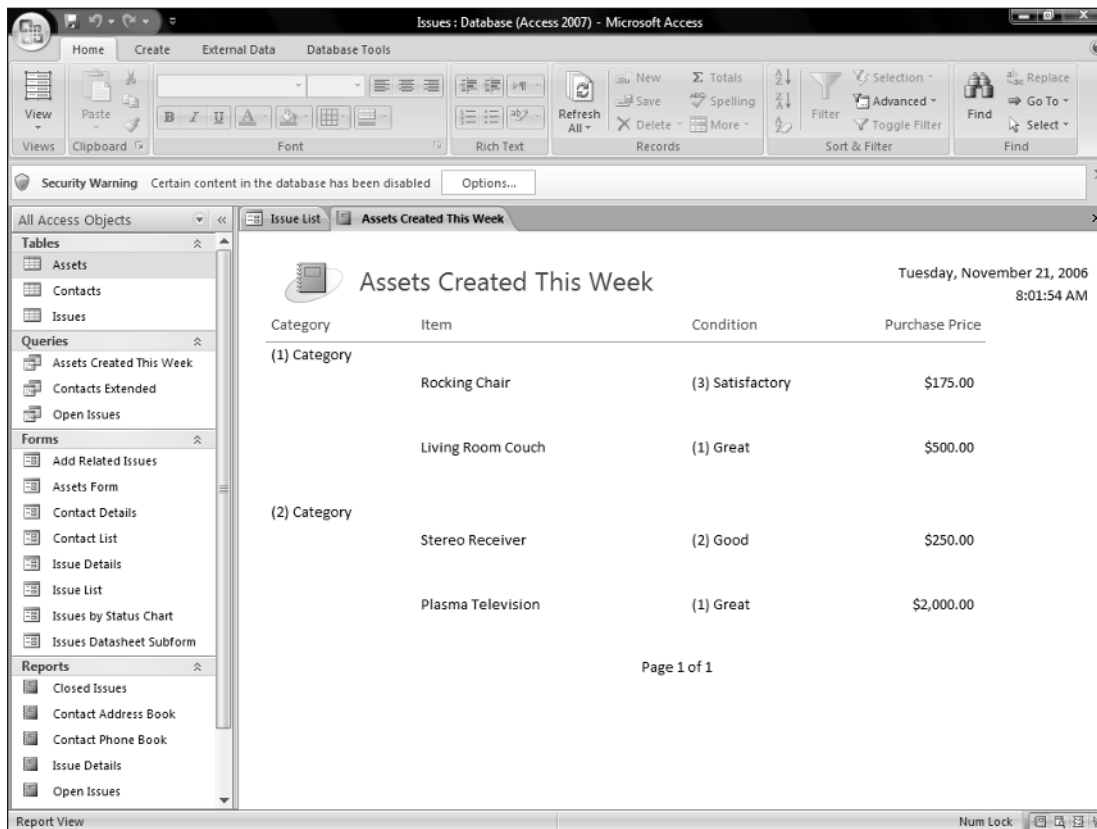


Figure 1-12

Using the quick report option can be one of the biggest time savers that Access 2007 offers. Often, reports (as well as forms) can be very time consuming in setting up and formatting to the desired settings. When used effectively, the quick report option eliminates much of the work to get the controls set on the report. Remember, a developer's time should be spent writing new code and designing systems, not fighting with the design of a report.

Now click on the Close button in the top-right corner of the report. Again, you are prompted to save, so type in the name **New Assets Report** and click OK. The new report is added to Navigation pane.



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### Creating Macros

The final object type to explore in this chapter is the Macro object. Macros are mostly used by novice and intermediate Access users, and often overlooked by developers. Macros can be powerful when used correctly and Access 2007 has had a number of feature additions and improvements in this area. Macros are common commands that can be selected from a list and named, so that a control can call the macro by name to run the functionality. All of the commands that can be run from macros can be run from code. However, one benefit of using macros is that there are many macro actions that can run when code is disabled in the database, meaning that a user is not required to enable code in the database application to use the functionality within it.

Buried deep within the Create tab, the Macro button can be found all the way to the right in the Other section, just to the right of Query option buttons. Clicking the Macro button here creates a new Macro object in Design view mode. The macro designer enables users to see the macro actions that are available in the Action list control. By default, only safe macro actions are shown in the Actions list, but clicking the Show All Actions button in the Macro Design Ribbon displays all macros. Click on the expander for the Macro actions and choose the OpenForm macro action. In the Action Arguments grid at the bottom, set Form Name to the name Assets Form (the form created earlier in this chapter). Figure 1-13 shows an example of what the macro builder looks like at this point.

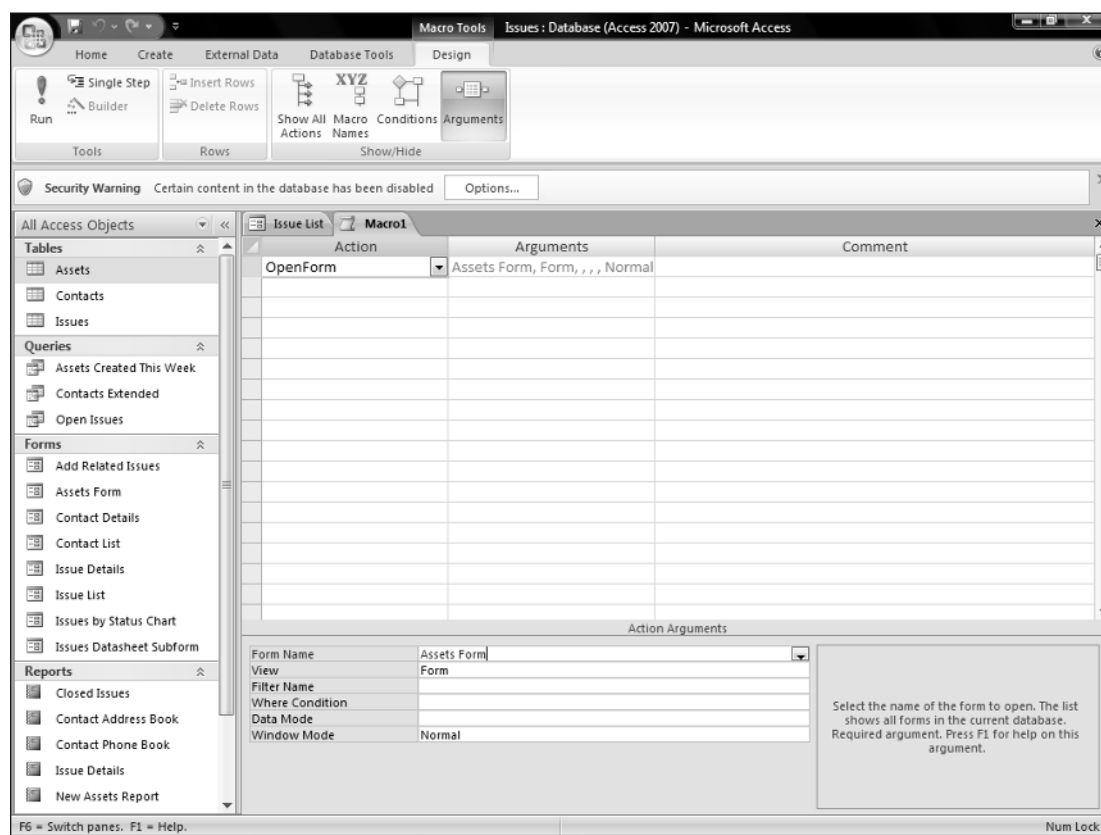


Figure 1-13



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One important thing to know about Macros concerns the use of the AutoExec macro. Any macro named AutoExec in a database application is always executed on load of the database as a means of running macros or code on load of the application. It is common for even developers to use this feature and it is probably the most widely used function of macros. If you develop regularly in Access, you are bound to run into this at one point or another. To open a database without allowing this macro (or any other macro, code, or other startup options) to run, here's a little trick: hold down the Shift key and open the application. No code or macros will run.

To see the AutoExec macro work, close the new macro and save it as AutoExec. Now close and reopen the database. Notice that two forms are open. The Issues List form opens because it is set to open on application startup and the Assets Form opens because the AutoExec macro tells the database solution to open it on startup.

One last item to discuss about Macros is that they can have conditions. New to Access 2007 is the `[CurrentProject]. [IsTrusted]` condition. This condition is extremely helpful in determining whether the database has code enabled when it is opened. The Northwind 2007 database uses this macro for just that purpose—to determine if the database has code enabled. If the database is opened and does not have code enabled, a message saying that code needs to be enabled for the database to work properly is shown to the user. That's very helpful for Access developers who use VBA in their applications. For example, you could create a form with a label that says that code needs to be enabled for the database. Then, you could create a macro for the OnLoad event for the form to an OpenForm macro with the condition `[CurrentProject]. [IsTrusted]` set, so that a specific form opens if code is enabled in the database. The form with the OnLoad event macro could be set as the startup form for the database, so that the user is notified if the database must have code enabled to operate correctly. In this way, anytime the database is opened and code is not enabled, the user will see the form and know that he must enable code to use the database.

## Summary

This chapter reviewed some of the basics for the Table, Query, Form, Report, and Macro designers for Access 2007. You learned when it is appropriate to use an Access database to store your data, and explored some of the benefits of using the designers to quickly build database objects without writing any code. You've seen that many tasks can be accomplished quickly using the tools built right into the Access product.

Many more features such as these are available, but they are beyond the scope of this book. Wiley Publishing, Inc., offers several books about how to use Access 2007 that are quite useful for learning more about these features. Visit [www.wiley.com](http://www.wiley.com) to read about them.

This book is about Access 2007 VBA, and you're probably wondering when you're going to write some code. Stay tuned. Chapter 2 covers the basics of VBA development. If you're already experienced in VBA you can probably skip that chapter. However, if you are new to VBA development, or you just want a refresher course in some of the basics, be sure to read Chapter 2. The rest of the book breaks VBA in Access into manageable topics, going into specific detail about each.

