



# A Guide to *Access 2007*

by

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This guide assumes the reader to have basic knowledge of text editing and formatting using a Wordprocessor. Familiarity with Office 2007's general interface is also assumed.

The exact appearance of certain screenshots vary depending upon the version of Windows you are using. Windows Vista is used throughout, although for the purpose and scope of this guide the differences between versions of Windows are largely cosmetic.

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# SECTION 1

## INTRODUCTION

A database is a collection of information (data) which is systematically organised. There are many examples of databases in everyday life, for example, an attendance register, a shop stock list, a telephone book. Using a database management system (database program) like Access, databases such as these can be manipulated and searched. For example, Access would allow you to sort a database of publications into alphabetical order based on the author's name, and to search for the author of a particular publication. Access can sort or find information much faster than you could by hand so looking through huge lists of information becomes a practical proposition. Data can also be manipulated using Access, eg. you could find out the total number of publications there are in the database, or how many by a particular author, or published after say, 1980.

Databases are structured into tables, records and fields. A table consists of a set of records (rows). Each record contains a number of distinct fields (columns). An example of a record would be information about a particular publication, say the book 'Harry Potter and the Deathly Hallows'. Examples of fields are the author, the publisher, and the ISBN (International Standard Book Number). As with database programs generally, before you start to use Access you should consider carefully what information you wish to record, the form in which you wish to record it, and what data you may want to retrieve from the database.

### 1.1

#### Database Design

Database design is a big topic – entire books have been written on the subject. Traditionally it has been viewed as a difficult task requiring highly specialised skills and consuming a great deal of time and effort. Whilst this may be true for large shared databases which have to take into account a wide range of considerations and users, small or single-user databases are not necessarily always difficult to design and implement. Outlined below are a number of principles that you should keep in mind when you are designing a database.

There are two types of database: Flat File Databases and Relational Databases. Both types can be created using Access. Flat file databases are a simple type of database which consist of a single table of data, for example, a telephone book. While simpler in design, flat file databases can be inefficient if used to store inappropriate types of data as this can lead to a lot of repetition in the database. In such cases more than one table is required and this is termed a relational database. Consider the example of a library loan database where a person may borrow several books. If this was to be implemented as a flat file database there would need to be a record containing details about each book including a field for the name of the borrower. If the person were borrowing six books her name would be repeated six times in the database alongside the records of the six books borrowed. In addition the database would need to store the person's library card number and the loan date. Of course each of these would also have to be stored six times – not very efficient. While with a small-scale database this may not seem important, the larger the database grows the more cumbersome it becomes to search and manipulate.

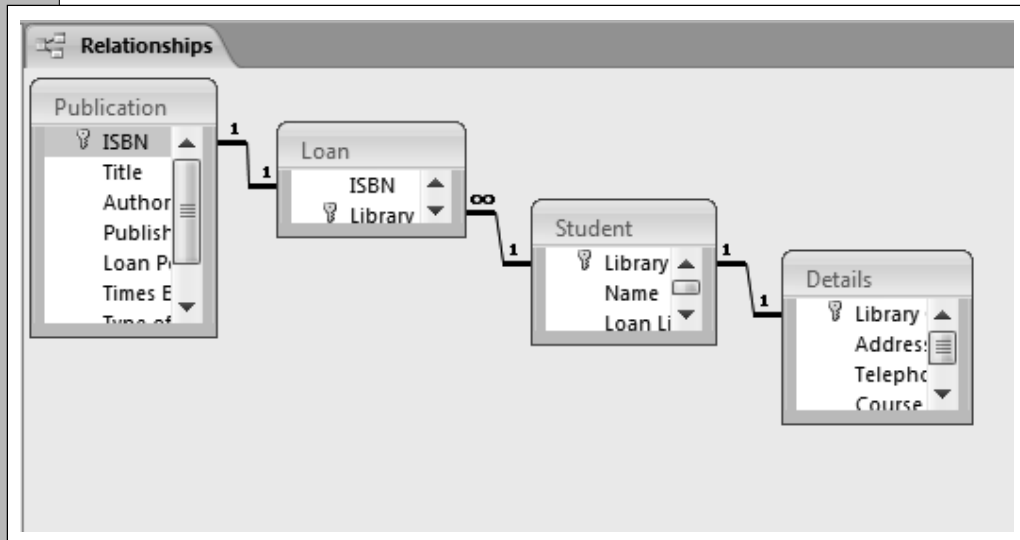
In a relational database details about the book would be kept in a separate table from those of the borrower; in this way the tables can be linked (related) together by a single common field. This linking field is the only repetition required between the tables and this is much more efficient. The key to relational databases is the process of deciding which tables you should have in the database, how these tables are related, and what fields those tables should contain. A frequent problem in the design of databases is that too few tables are

# 1.2

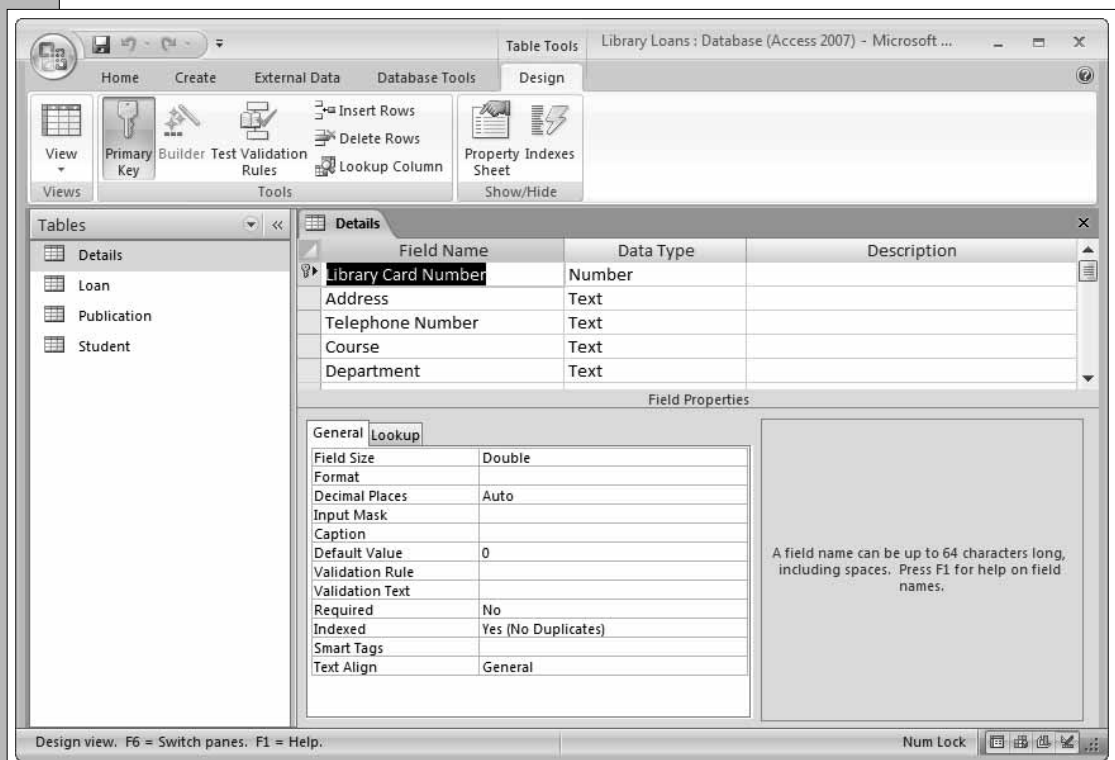
used which can lead to them becoming overloaded or difficult to search, update and expand. You need to consider carefully the sorts of questions you will want to ask the database and the types of output you will require. Very often you may have to review the design.

## Stages in Creating a Database

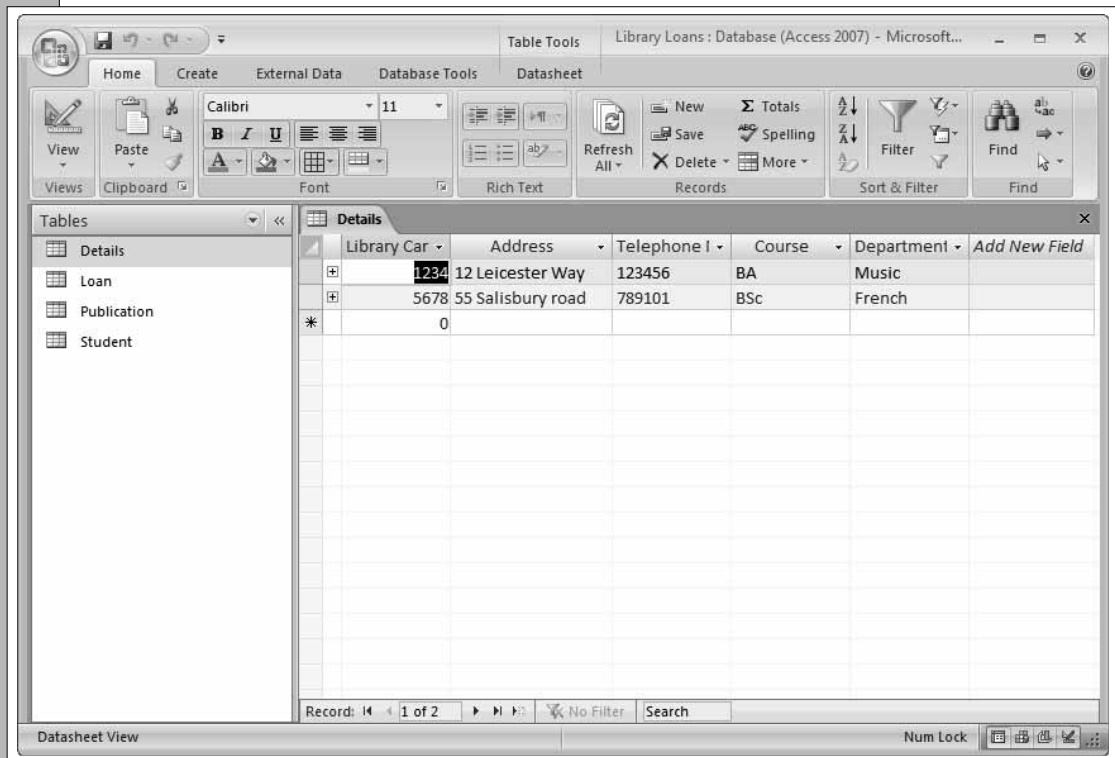
**1** Decide upon the design of your database. Section 1.1.



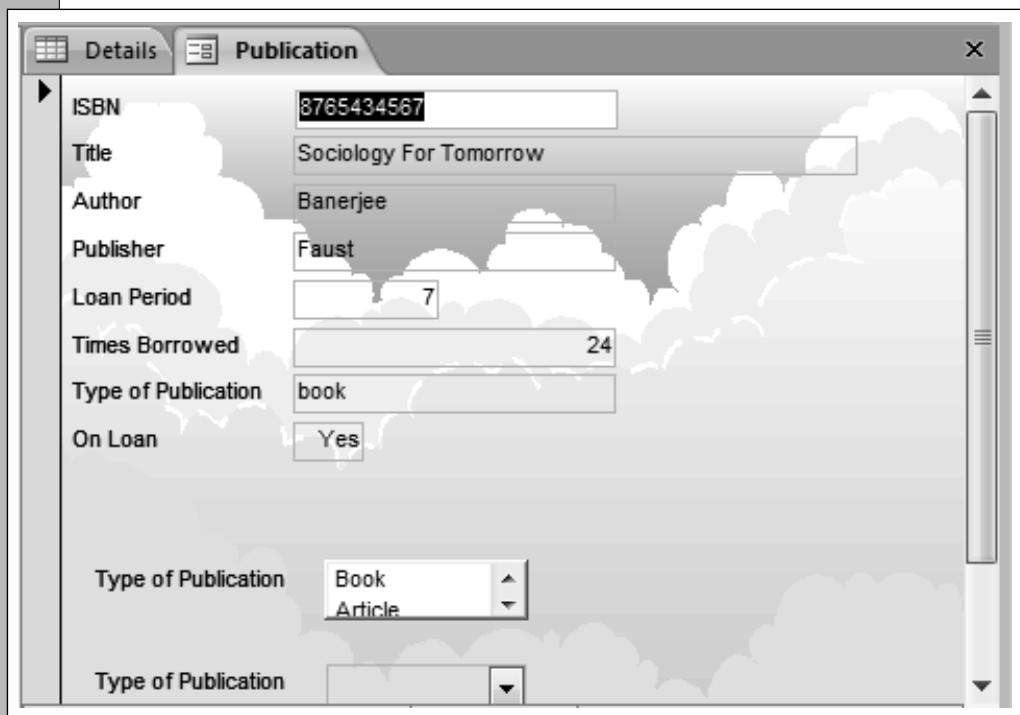
**2** Create the required tables based upon your design and define the fields within each table. Section 2.3.



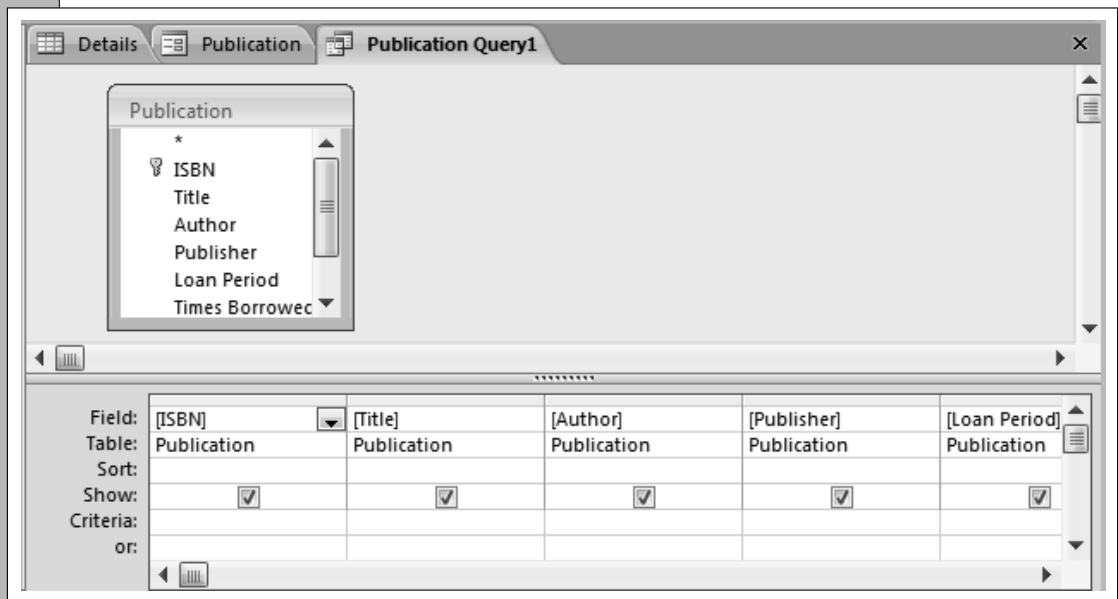
### 3 Enter the data for the database.



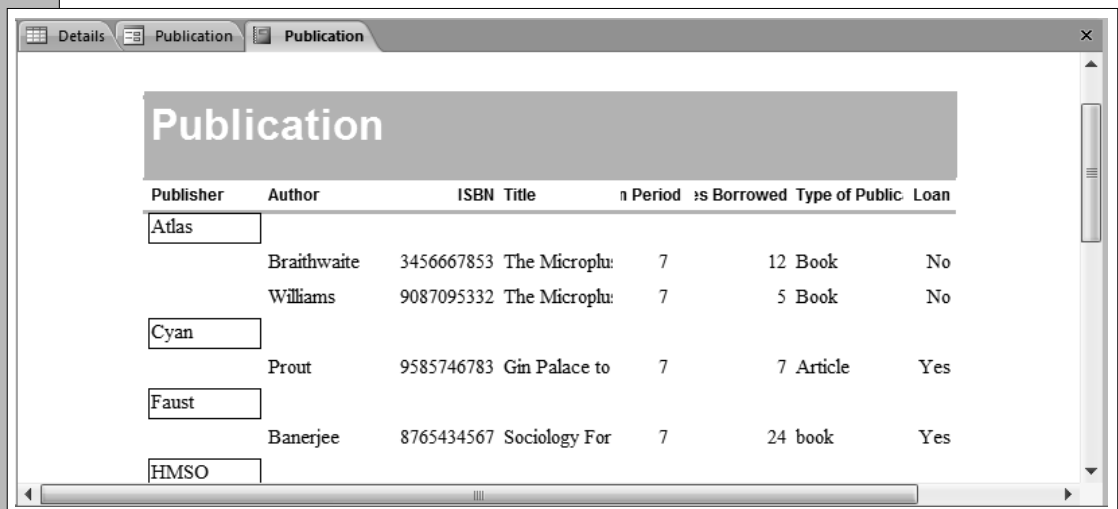
### 4 If you wish to make data entry easier create a Form. Section 5.0



**5** Search the database using a Query. Section 4.0.



**6** If you wish to print any data from the database as anything other than a simple listing use a Report. Section 6.0.

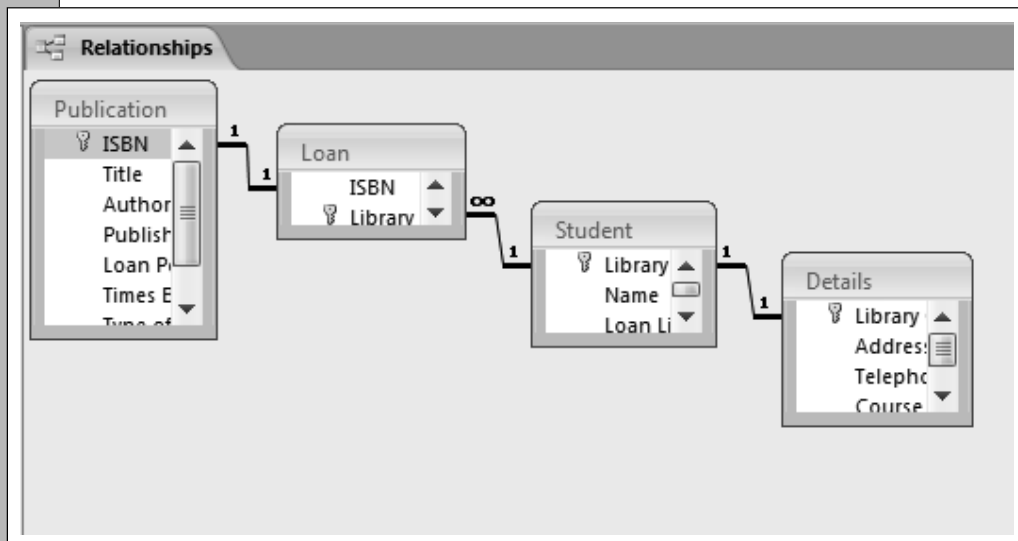


## Sample Database

Throughout this guide the examples are based on a database designed to operate a local library loan system. The purpose of the database is to enable the library to store and retrieve information about which publications are on loan and to whom. The following information needs to be recorded about the publications available: which publications are on loan, to whom, and details about people registered to use the library. Each has been logically allocated to one of four tables with the linked element underlined:

<b>Publication:</b>	ISBN, Title, Author, Publisher, Loan Period, Times Borrowed, Type of Publication, On Loan.
<b>Loan:</b>	ISBN, <u>Library Card Number</u> , Loan Date.
<b>Borrower:</b>	<u>Library Card Number</u> , Name, Loan Limit, Adult.
<b>Details:</b>	<u>Library Card Number</u> , Address, Telephone Number.

While this may appear intimidating, examples in this guide will refer only to the Publication table unless illustrating how to relate tables together and how these can then be manipulated. The database was divided in this way because it has broken the information which is needed into four distinct entities. The tables are linked either by the ISBN number or the Library Card Number (underlined above). Structuring the database in such a way makes it more efficient to use and reduces problems of duplication and inconsistencies. The diagram below illustrates the relationship between the four tables which constitute the database. You should note that the sample database is intended purely as an illustration and that some licence has been taken.



## SECTION 2

### STARTING ACCESS

Unlike most programs where it is possible to get started with little background knowledge, the same is not true of a relational database program. Getting the initial design of the database right is essential. If you have not done so already, it is suggested that you read Section 1.0 of this guide and if you are still in any doubt then read a book about database design.

# 2.1

## Starting Up Access

### Windows Vista

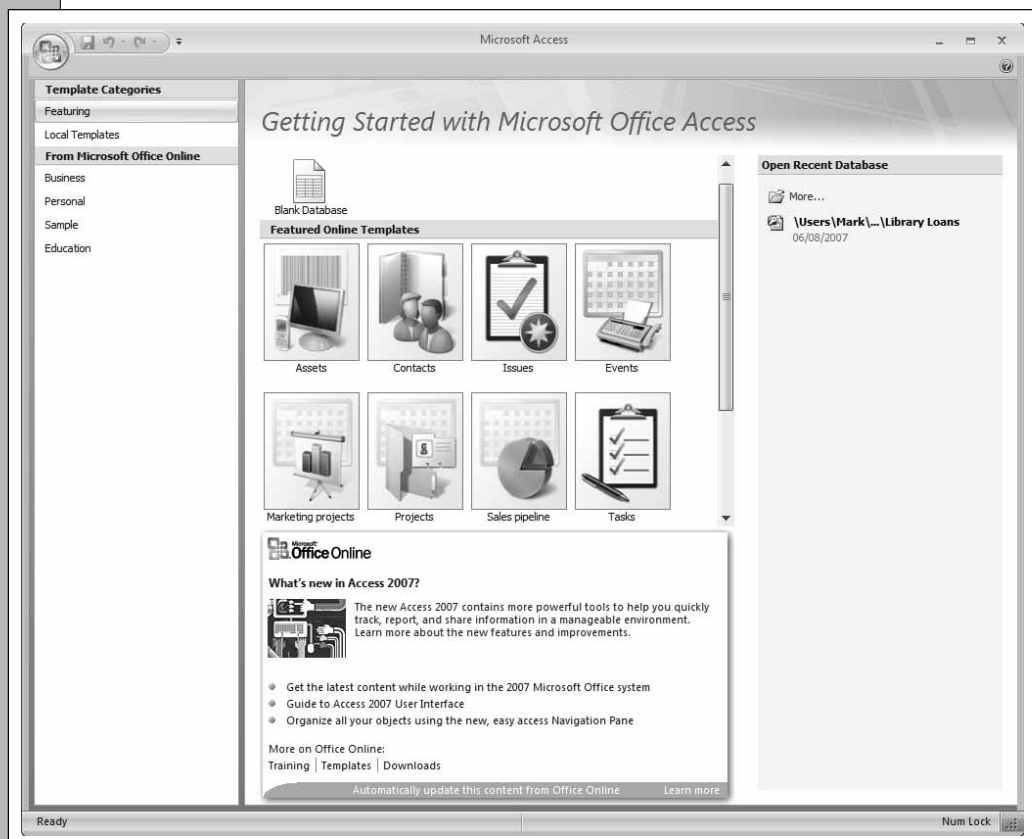
Click on the **Start** button, choose **All Programs** and from the **Microsoft Office** sub-menu choose **Microsoft Office Access 2007**.

### Windows XP

Starting Access 2007 from Windows XP is slightly different

From the **Start** menu, choose **All Programs** and from the **Microsoft Office** sub-menu choose **Microsoft Office Access 2007**.

Access starts up with a startup screen:






## 2.2

There are two ways of starting Access:

- Using a database which has already been set up (see Section 2.3).
- Setting up a new database (see Section 2.4).

## Help Using Access

If you have problems with Access click on the  button on the top right corner of the window. To find help on a particular topic, just enter the topic and click on **Search**. Usually a selection of possible answers is returned, and for further details just click on the most appropriate answer. The **Forward**  and **Back** buttons  at the top of the **Access Help** window allow you to move between answers. To hide Access Help click on the help window **Close Box**.



## 2.3

## Opening an Existing Database

You may have experience of inputting data or working with an Access database created by someone else. If you wish to adapt an existing database or modify one that you have already created. In either case if Access has just started up you will be presented with a dialogue box similar to the one shown on the following page.