

Seat Reservation System Sample Application

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1.0. General Description

This mindmap example represents a seat reservation system for a movie theater. It consists of a central server and a number of clients. The server is responsible for all interactions with the database, which includes the actual seat reservations. Connected to the server are up to 10 clients, which represent the front end, as viewed by the user. The clients are also the point at which the tickets are printed.

The client / server concept implements concurrent access to the database of theater seats. All connected clients are always kept up-to-date regarding the availability of seats.

2.0. Required Files and Single PC Installation

The following list contains all necessary files, which should have been installed on your system during the mindmap installation:

C_CLIENT.MM	<i>This is the client part of the application</i>
C_SERV.MM	<i>This is the server part of the application</i>
SEAT1.DBF	<i>Seat database number 1</i>
SEAT2.DBF	<i>Seat database number 2</i>
CCLIENT.DBF	<i>Client database</i>

The first file in this list must reside in the local working directory of the PC(s) which is/are to function as clients. This is the one you specified during the installation process. (*The system had suggested C:\MINDMAP.*) The second file (C_SERV.MM) must reside in a directory named C:\MINDMAP, on the PC which is to function as the server. The three database files must be copied into a directory named C:\MINDMAP\BASICS on the server PC.

If you intend to run this application on one PC, meaning this PC will function simultaneously as a client and a server, be certain that you have copied the files into their respective directories on this PC.

In order for the application to function properly, it is necessary that the ODBC environment is installed and working. If you install the sample applications during the mindmap setup, then mindmap will assure that ODBC is installed. If you have loaded any other Windows application which accesses ODBC, then you merely need to notify the system of the existence of the three little databases. If neither is the case, then you must install ODBC.

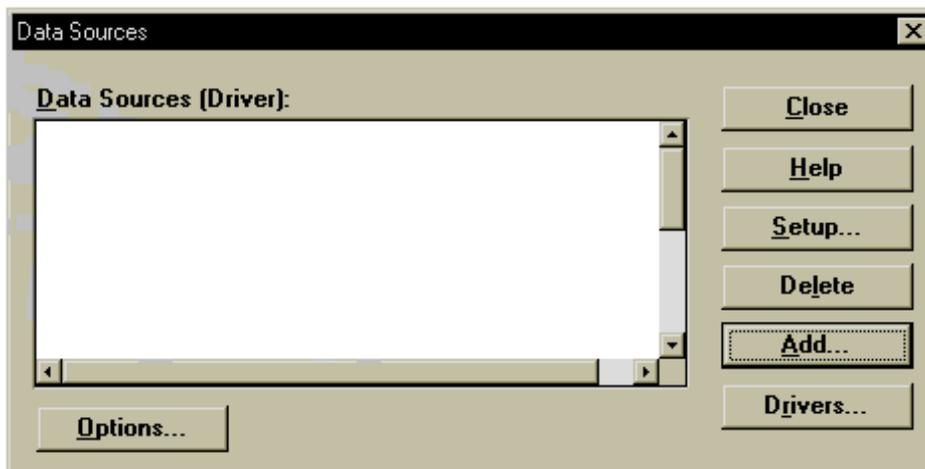
Let's begin with the best assumption - you installed the samples during the mindmap installation. As a consequence, you should have the ODBC Administrator program registered in your program group. You should also have a directory called ..\BASICS immediately beneath your mindmap directory.

mindmap will have created an ODBC data source under the name MMDEMO1. In order to verify this, launch the ODBC Administrator and scroll through the list until you find the entry:

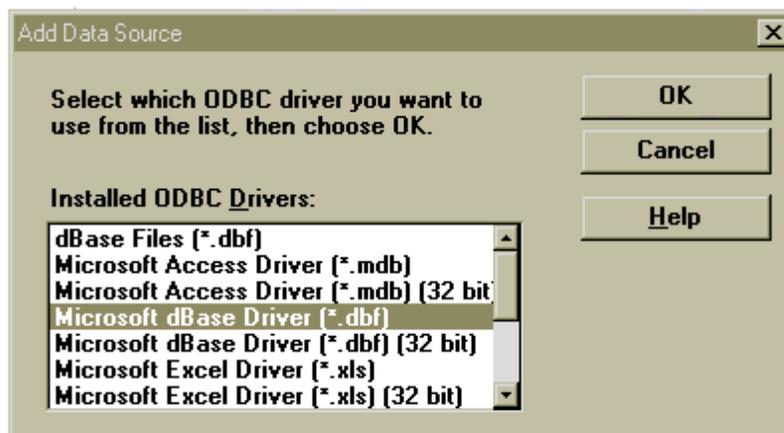
MMDEMO1 (Microsoft dBase Driver) *.dbf

If you have located this entry, then all is set to run the Seat Reservation application on one PC. If you intend to execute the application on more than one PC, please read the instructions contained in the next chapter.

If you have not found this entry, then you must manually make the entry and configure it. To do this, launch the ODBC Administrator program. It should show you the following screen:

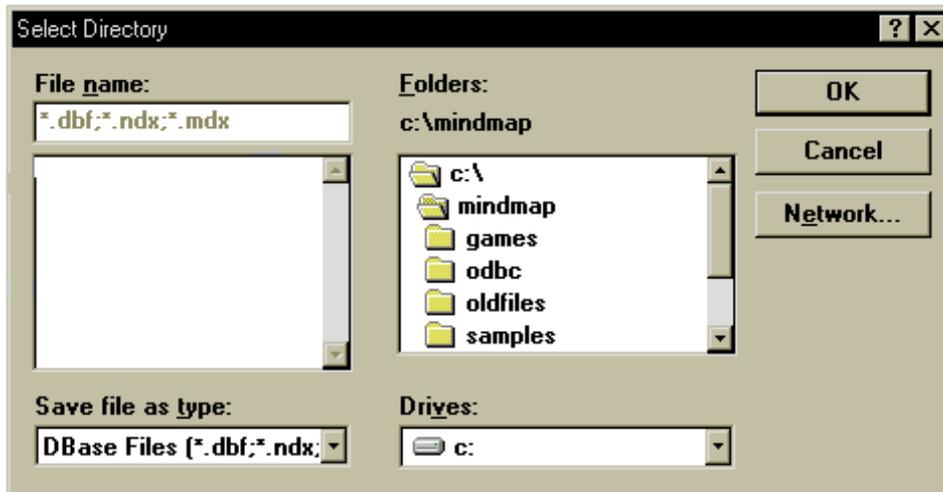


Depending on your personal environment, you might see some entries in the screen. To add the necessary entry, click on the **Add...** button. This will result in the following dialog box:



Here you need to select the Microsoft dBase Driver (*.dbf). Accept the selection by then clicking on the **OK** button.

Enter MMDEMO1 into the first field, entitled **Data Source Name**. If you wish, you can enter a description in the next field, but this is optional. Next click on the button labeled **Select Directory**. This will give you the following options:



Navigate until you have located the directory (..\BASICS) containing the .dbf files. Accept the selection by clicking on the **OK** button. You're now set.

3.0. Installation for Multiple PCs

If you intend to run the client portion of this application on a PC other than the one you have designated as the server, then there are a few more steps you will have to take:

- (1) Start mindmap on the PC designated as the server. Drop down the menu **File|Preferences|Network|New|Search Drivers**. Here you must select the protocol by which the clients will be accessing this system. Then select the option "*Your computer can be accessed from others*". Finally, you must specify the directory in which the C_SERV.MM file is located. Exit back through the dialog boxes, accepting the entries. Do not exit mindmap at this time.
- (2) Next, start mindmap on the PC(s) designated as client(s). Access the menu **File|Preferences|Network|New|Search Drivers**. Select the appropriate protocol, then enter the connection name, the server's IP address (*if you are using the TCP/IP protocol*), or the Windows network computer. You may need to consult your System Administrator for this information.
- (3) Load the file C_CLIENT.MM on the client PC. Advance to the second page (client_pg). Select the encapsulator component and activate its attributes: Clicking on the top left icon permits you to redefine the location of the server component. Step through the subsequent dialog boxes, defining the location of

the server component (*its on the PC you defined under step (1) above*). Back out through the dialog boxes accepting the input.

(4) If you plan to run multiple clients against the server, you must repeat steps (2) and (3) for each client.

4.0. Layout and Functional Description

4.1. Server

Start the C_SERV.MM application on the server. The first page displayed will have 2 buttons. These are the only components on the server, with which you can interact.

The top button, labeled **Make Seats Available**, will initialize the database. This will cause all previous seat reservations to be deleted (*it is assumed that the show has taken place*).

The second button, labeled **Initialize All Clients**, is only needed if you must initialize the clients due to some abnormal termination of the system. This might be the case if the server was shutdown prior to shutting down the clients. In this case, shutdown all clients. Restart mindmap and the C_SERV.MM application on the server. Click on this button. Now start the client PCs, load mindmap and start the C_CLIENT.MM application on the client PCs.

4.2. Client

Once you have started the client application, the mid-section of the screen will display an abstraction of the interior of the theater. There are a total of 52 seats which can be sold. Each seat can take on one of five conditions, which are represented via a specific color coding:

Green	= <i>seat is available</i>
Yellow	= <i>current client has made a reservation</i>
Red	= <i>current client has booked</i>
Light blue	= <i>different client has reservation</i>
Dark blue	= <i>different client has booked</i>

A client can not act on seats which are either light or dark blue, since they are controlled by a different client.

If the mouse cursor is positioned above a green or a yellow seat, then the following actions can be taken:

Left mouse button clicked	= <i>books seat</i>
Right mouse button click on green seat	= <i>reserves seat</i>
Right mouse button click on yellow seat	= <i>makes seat available again</i>

Once you have made a reservation or a booking, the seat will appear with a wide frame. You can undo the operation as described above.

There are additional buttons displayed on the screen which permit further settings. The two buttons **Matinee** and **Late Show** toggle between the early and the late show. Once you click on one of the buttons, the current status regarding seat availability will be retrieved from the server and displayed.

The button labeled **OK** will transmit the reservations / bookings to the server for confirmation. As soon as the reservation / booking is accepted by the server, client will display a confirmation message and offer the opportunity to print the tickets. If other clients made seat reservations which conflict with the

reservations / bookings that were attempted on the current system, the server sends a notification that a conflict has occurred, does not accept the reservation / booking and supplies the client with the current status of available seats.

The button labeled **Cancel** will undo any reservations / bookings.

The button labeled **Reload** will retrieve the most current status of the database.

This should be done at regular intervals to assure the most current status and thereby assisting in avoiding conflicts.

At the top of the screen, you will find a legend explaining the various conditions.