

Relational Database Project

K321 - Management Info Systems

GROUP PROJECT



Case 2: The Sailboat Rental Business (Pages: 60-64)

Due Date: On or before Thursday December 11th, 2003

Initial Database Design on Paper (25% of Grade)

Design your database tables on paper. ***Do not start your Access code before designing the database on paper.*** While creating the data structure for each table, assume the field type, length etc., which are appropriate and also adequate to accommodate the information presented in the tables. Identify appropriate key field(s) in a table. You could do this by placing an asterisk next to the field name(s) that are to be the key field(s). Also, determine the proper relationships (examples: 1:1, 1:M, M:N) among the tables. Your physical design may have revised tables and some times new tables that capture the M:N relationships in logical design. ***You will include both the logical and physical designs with the ER diagram of the database as part of the deliverables.*** Use the format of the handouts given in the class. Use a word processor to prepare your paper designs. I found Microsoft Excel to be very handy for creating ER diagrams. You may also use Word to create simple ER diagrams. ***Handwritten ones are not acceptable.*** See bullets under “***Deliverables***” section for more details.

Additional Requirements: You would also like to keep track of technicians who maintain the boats. Assume that the boats are serviced only by the assigned technicians. That is if Boat # 21 is assigned to technician 130, then only that technician can service that boat. Create four to five technicians and their boat assignments. Remember that a technician can serve more than one boat and but any particular boat is serviced only by one assigned technician. All the boats in your fleet must have an assigned technician. Also, you do not have a technician who is not assigned to a boat. Also, you would like to maintain information such as technician name, address, and professional certification (yes/no) for each technician.

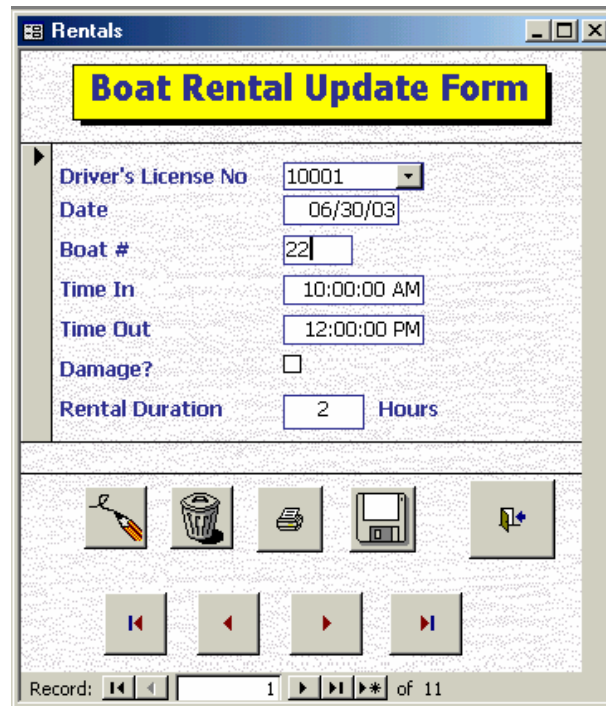
Database Construction in Access

Create tables in Access based on the physical design you have created on the paper. Make sure to identify the key field(s) for each table based on your physical designs. Key the data into the tables. Double check that the data you entered into the tables match with the tables you have created in the physical design (remember: GIGO – Garbage In Garbage Out). Create appropriate relationships. Click on ***Tools*** menu option and choose ***Relationships*** to accomplish this. Also, check on ***Enforce referential Integrity*** check box in Edit Relationship dialog box for each relationship to avoid inconsistencies in data entry later on by employees of the company.

The following are the instructions in addition to the ones given in textbook.

1. Boat Rental Update Form

Design a form that sales people can fill out as the items are being rented out. The form should be easy to use. Include **combo box** for **Driver's License No** field on the form. A sales person could choose customer name (Last Name and First Name) from a drop down list (that way he/she does not have to remember the ID information and eliminate any possible data entry errors) and the Access system would enter the related customer's **Driver's License No** into the appropriate table in the database. Include a **calculated control** called **Rental Duration** in the form. Your form should automatically calculate **Rental Duration** when **Time In** and **Time Out** fields are updated by the sales people. The form must have **command buttons** for easy navigation (such as next record, last record), for record operations (such as save, delete), and form operations (such as exit). Please include these controls in the form footer. A sample form is shown below:



The screenshot shows a Microsoft Access form window titled "Rentals" with a yellow header bar that reads "Boat Rental Update Form". The form contains the following fields and controls:

- Driver's License No:** A dropdown menu (combo box) with "10001" selected.
- Date:** A date field containing "06/30/03".
- Boat #:** A text field containing "22".
- Time In:** A time field containing "10:00:00 AM".
- Time Out:** A time field containing "12:00:00 PM".
- Damage?:** A checkbox that is currently unchecked.
- Rental Duration:** A text field containing "2" followed by the label "Hours".

Below the data fields is a row of five icons: a pencil (edit), a trash can (delete), a printer (print), a floppy disk (save), and a plus sign (add). Below these icons are four navigation buttons: a double left arrow (first record), a single left arrow (previous record), a single right arrow (next record), and a double right arrow (last record). At the bottom of the form, there is a record navigation bar that says "Record: 1 of 11".

CAUTION: Be aware that you may accidentally change the database contents when you play with the form controls (especially the fields that utilize the combo boxes for inputting data).

2. Technician Assignment Report:

The format for the report is shown below. Note that the boats are ordered in ascending within each technician. The content of your report will be different from the one shown. Also, note that only partial report is shown here in order to save space.

Technician Assignments

<i>Tech No</i>	<i>First Name</i>	<i>Last Name</i>	<i>Boat #</i>	<i>Type</i>
100	Jack	Hammer	26	Sunfish 12
			27	Sunfish 12
110	George	Smith	23	Row
			25	Sunfish 12
120	Kelley	Brown	31	Capri 14.2
			32	Capri 14.2
			33	Capri 14.2
130	Chris	Tsai	21	Capri 14.2
			22	Catalina 23
			24	Hobie 18
			34	Hobie 18
			35	Hobie 18

DELIVERABLES:

- Be sure to include a **cover page** with your group information, names of all the group members, semester and course section information (Ex: John Doe, Fall 2003, Class Meeting time).
 - Include both the **Corrected Logical and Physical designs** along with ER diagrams similar to the handouts given in the class. Handwritten papers are not acceptable. You need to type them in a word processor (or create them in spreadsheet and CUT and PASTE them into the word processor). Word processing programs have also DRAWING capabilities to create diagrams.
 - If you make any assumptions, please state them separately in the “**Assumptions**” section. For example, boats will not be rented overnight.
 - Print all the tables, queries, reports and the form.
 - **Instructions for printing the form:**
 - Print only the record that contains your info. In order to do this, open the form, use the drop down list for Drivers License No, and click on your name. Click File on the menu bar, and then click Print. Click **Selected Record(s)** as the **Print Range**. Click the OK button.
 - *Name the database file with your last name.* Name your group file as **Group#.mdb** (replace # with your group number). Label your **diskette**.
 - The final report will have a cover page, logical & physical designs, printouts of tables, queries, reports and the form along with the floppy disk.
- ▶ *Any evidence of cheating would result in a grade of zero for all the parties involved.*