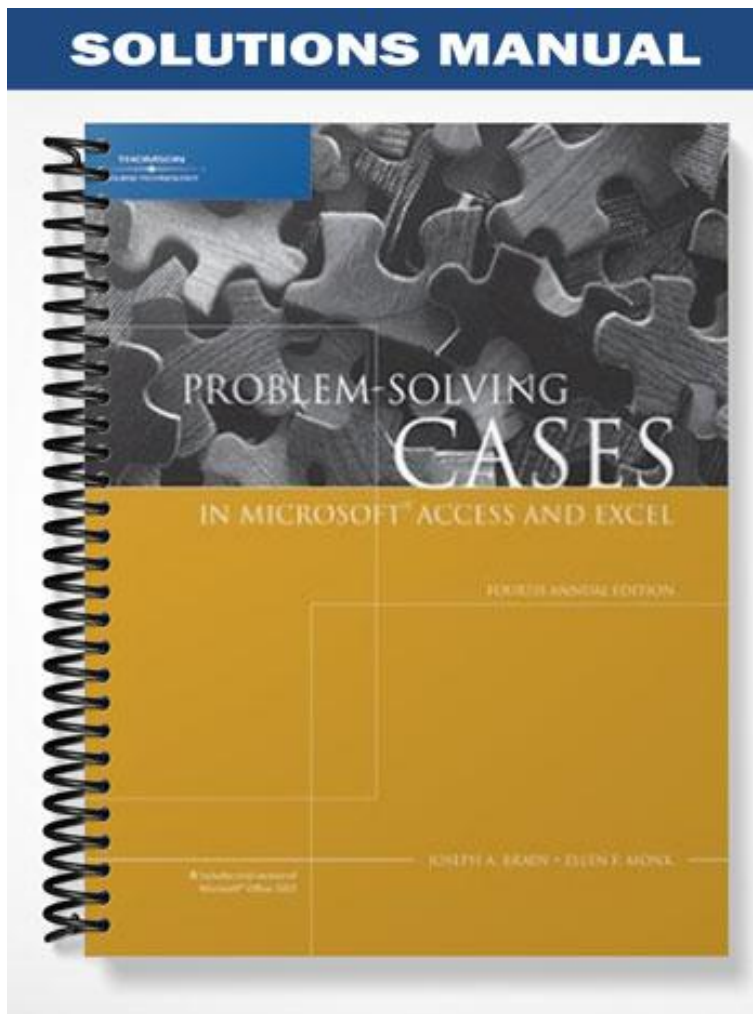


SOLUTIONS MANUAL



General Guidelines for Teaching Database Cases

Instructor's Notes Common to All Database Cases

1. In introducing the cases, stress the virtues of databases. Refer to the reports that are required for each assignment to illustrate what companies do with databases and why they are such a necessity.
2. For cases 2-5, teach the concepts in the database design tutorial A. This tutorial steps through the design of a database without normalization. With sufficient examples in class, students will grasp the concepts well enough to do the cases. Some ideas for examples in class might be the library database design or the video store database design.
3. For cases 2-5, good programming practice states that one should work backward from the output desired to design the program. This concept holds for these cases. Tell your students to look at the management reports or queries required at the end of this case, before designing the database. This will give them some hints as to what needs to be designed into the system.
4. Students should know the basics of Microsoft Access. Assign tutorial B in preparation for the cases, or tell the student about specific pages in the tutorial that would be helpful. To ensure students do this, assign tutorial B for grade.
5. Prior to the students' working on the cases, discuss some features of databases and in particular, Microsoft Access.
6. Review specifying field types. Certain types of fields must be specified for the project to work properly.
7. In order to do date arithmetic, for example, "Date In" and "Date Out" fields must be both Date/Time field type. If not, the date arithmetic will not compute. Also, if calculating elapsed time, you must multiply the expression by 24, since Access deals with time on a fraction of a 24-hour basis.
8. Any field that needs to be used in any other calculation must be numeric or currency data type.
9. In order for fields to be linked between tables properly, the fields must have the same type and size and the data should be typed in exactly the same for both tables, otherwise the joins will not work. Review joins and stress the importance of using only the proper tables in the query, not all the tables and not too few so that joins will not occur.
10. Once the tables are created and populated, the student works on the queries and reports. Review making calculated fields in queries. Review sigma queries and sorting in queries. Review update and delete queries. Review parameter queries. Review the switchboard.
11. The cases can be completely individually, or in teams of two.

Case 1: Preliminary Case: The Fitness Club Objectives

- Implement a relational database for a fitness club
- In Microsoft Access, create 4 tables and populate them with data
- Create a form for class registration.
- Create three queries: one Parameter query that prompts for an Instructor's name, one Count query that counts the number of students registered for a class, and another query with a calculated field that figures the length of a certain class.

- Create one report from a query that calculates the instructors' pay.

Specific Teaching Tips

This case is an introductory case. The design of the tables is already given to the student. The student merely has to carry out the design in Microsoft Access, making only some fairly easy decisions on their own. This case could be used as a "warm-up" case to the later cases.

Common student mistakes

- Tables are not linked properly in the query, or not linked at all
- Too many tables brought into the query or not enough tables
- Not using a summation query for assignment 2C
- Forgetting to change the column heading for the assignment 2C
- Forgetting to multiply the calculated field by 24 in 2D and 2E
- Tidying up the output to the report
- Not summing in the report
- Not changing the default sum title in the report
- Having some titles truncated in the report because the width is too narrow

The end of the tutorial B also has some pitfalls that might be useful to look at or point your students to.

Suggested Grading Guidelines (in order of importance or weight):

Assignment 1

1. Each table exists – 25%
2. Incorrect table set-up – 10%
3. Incorrect data types – 5%
4. Typos – 1%

Assignment 2

1. Each form, query and report exists - 20% each
2. For those queries with multiple tables (weight training, which class, report query), make sure tables are joined properly. If not, take off 10%
3. If the query is not correct, but a report is made from the query, take off only for the query mistakes
4. Count query heading should be changed and look good – 10%
5. Make sure all headings in the report are viewable – 3%
6. Make sure design of report is adjusted so that the first and last names are on the same line – 3%

Solutions

The solutions to this case can be found at [filename].

Case 2: The Flying Club Objectives

- Design a database for an amateur flying club
- After this database is successfully designed, implement the relational database using Microsoft Access
- Populate the database and create two forms: one for reserving aircraft and another for mechanics' recording maintenance. Also create three queries: one to answer the question, who lives in

Pennsylvania, one to figure out how many times has an aircraft been rented, and one to figure out each member's bill. Finally create a report to list the flying hours for each member.

Specific Teaching Tips

This case requires the student to read a business problem and solve it by designing and implementing a relational database.

Common student mistakes

- Fields are created that could be calculated in a query
- There are not enough tables in the database design
- Tables in the database design do not have the proper fields in them
- The fields are not the proper data type
- Redundant and unnecessary data is created
- Students haven't made up enough data when implementing the database
- Forms are not based on one table only
- Tables are not linked properly in the query, or not linked at all
- In the parameter query, students just type in a criteria instead of asking for an input
- In the summation query, students try to use sum instead of count
- The calculated field in the report query is not multiplied by 24 so the time is based on a fraction of a 24 hour basis
- Calculated field for the report query has some missing brackets so when the query and then the report is run, you get the enter parameter value error
- Trying to make report without making a query first.
- Report is not grouped properly
- Report design is not adjusted properly in terms of headings
- Other aspects of the appearance of the report are not good.

Refer to the end of Tutorial B for common pitfalls.