

# Problem Solving and Programming in Business

## Homework 5

*E-mail me your project and print out the non-generated code to hand in. I need both.*

Create and populate a small database in your personal data space on SQL Server. Your database should have at least two user tables, and a one-to-many relationship between them. Any master-detail or parent-child relationship will do. Be creative and interesting.

Leveraging your growing (and improving?) skeleton application, develop a new VB.Net application to display your database tables on a form. (Remember to tell the form design wizard about the 1-M relationship.) Provide facilities for the user to add, update, and delete rows in your tables.

On another form in this application, allow the user to read the rows of one of your tables into a list and manipulate that list in memory. Include at least the following features:

- Number the items in list (by altering the text of the item)
- Search for a single item in the list. If found, display
  - the position of the target item in the list
  - the values immediately before and immediately after the target
- check for duplicates **anywhere** in the list
- sort the items in the list

Thoroughly test your application. Watch out for “off by one” errors and always test the limits. **It’s much more important to me that the features you do implement are well tested and totally bulletproof than whether or not you implement all of the features. In other words, quality is worth more than quantity.**

Be sure to use your best programming practices, which by now you ought to be doing by default. These include but are certainly not limited to:

- Descriptive control object and variable identifier names
- Informative and meaningful comments in the source code
- Careful setting of the tab order
- Keeping to the “zero, one, infinity” principle
- Keeping to the “law of least astonishment”
- Aesthetic visual design
- Keeping the code “behind” the buttons to a minimum
- ... and everything else we’ve talked about (unless you want to hear me go on an on about them again and again!) [*Don’t make me!*]