

Virginia Tech ■ ECE/CS 4570: Wireless Networks and Mobile Systems ■ Spring 2006
At-home Exercise 3 (E03)

Report Due: February 9, 2005 (at 4:00 PM)

Part I – Objectives and Lab Materials

Objectives:

The objectives of this lab are to:

- ☐ Help you become more familiar with C#, the .NETcf and using Windows Forms.

After completing the assignment, you should be able to:

- ☐ Impress and amaze your friends with ability to write mobile applications.

Hardware to be used in this lab assignment:

- ☐ 1 Dell Latitude C640 notebook
- ☐ 1 iPAQ 3850

Software to be used in this lab assignment:

- ☐ Microsoft Visual Studio 2k3
- ☐ Microsoft .NET Compact Framework

Part II – At-home lab assignment

The Pizza Program

1. Congratulations, you are the proud owner of a new pizzeria (pick your favorite name). Your employees are all UVA graduates and are not particularly adept at math or remembering things. To make their life much easier, you have decided to create an iPAQ application that will allow them to take and price orders by themselves. The UVA graduates can read (somewhat) but getting them to write correctly on the iPAQ has caused some problems. Because of this, the application must be usable with just the ability to “click” with a stylus.

2. Requirements:

- ☐ User interface (UI):
 - Use *comboBoxes* for the pizza size and crust style.
 - Use *checkBoxes* for the toppings.
 - There must be headers/descriptions for each section.
 - There must be an area for the Total (either *label* or *textBox*).

An example interface is shown in Figure 1.

- ☐ Function:
 - The total should be calculated by clicking a button or updated as selections are made.
 - Sales tax is included in the price, so it does not need to be added to the total.

- ❑ Prices:
 - Size: Small - \$7, Medium - \$9, Large - \$11
 - Crust style: Thin - \$0, Original - \$0, Sicilian - \$1
 - Toppings (each): Small \$0.71, Medium - \$0.81, Large - \$0.91
 - All costs should be stored in a single location so they can be changed with minimal effort. (Storing the values in a file is not recommended.)

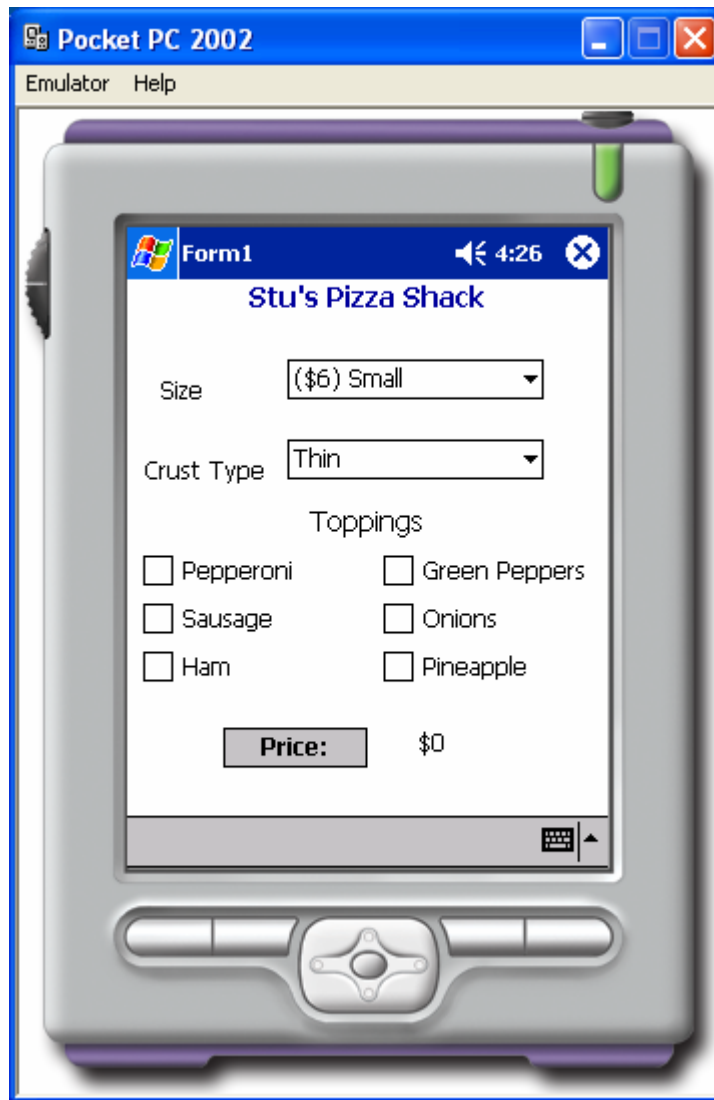


Figure 1. Example user interface.

Part III – Report

This report will include both in-class and take-home aspects of this lab assignment. You must turn in a report containing the following:

Report Part I: In-class Report

1. Name three programming languages that support the full .NET framework.
2. Name *the* two languages that can be used for writing .NET compact framework applications. (These are the two languages that are supported “out of the box.”)
3. Name two similarities and two differences of C# and C++. (Any differences may be specified, including syntax, style, etc.)
4. Include the screenshots of your tip application running with the following bill values: \$0.25, \$2.34, \$5 (each at all tip levels).
5. Include code that is executed when the button is clicked.

Report Part II: Take-home Report

1. Include all code that you added to your Pizza application. This includes any methods to which you added code and any new classes that you created. Make sure to comment the code that you add.
2. Provide at least two screen captures (using Alt-Print Screen to capture the screen image) of the emulator running your pizza application.
3. Summarize how your application works.
4. Discuss one alternative approach to developing this application.

Report Part III: Conclusion

This is the free-form portion of your report. Provide a summary of lessons learned from this week’s assignment. Express any initial thoughts on using C# and what you think of the language itself. Express any thoughts on developing mobile graphical applications. Report any problems encountered and any suggestions, comments, and/or criticisms for this week’s assignments.