

# CMSC434: Introduction to Human-Computer Interaction

## Visual Basic Project #1

### Designing a Symptom Assessment Interface

Due February 19, 2004

This first project is designed to give you experience designing a user interface in Visual Basic. Keeping with the course theme of medical-related applications, this assignment will allow you to design your own symptom assessment interface.

#### **Background**

“The aim of palliative care is to alleviate as many of the patient’s symptoms as possible, and in that way, provide the best quality of life for patients and their families. To achieve this goal, the doctor must have precise knowledge about the patient’s conditions and needs. If a symptom is not mentioned to the doctor, it is unlikely to be treated. Therefore, good symptom assessment is one of the most important components of delivering effective care to palliative patients.” (Hallgren, 2002).

There are two typical ways doctors currently receive information about their patients. Usually, the doctor will learn about the symptoms when speaking to the patient, relatives or other caregivers. The second way to measure symptoms is to use an established symptom questionnaire. For this assignment, you will develop a novel third way: a computer interface that will allow the patient to submit his or her symptoms directly to the doctor.

#### **Interface Requirements**

As a part of the interface, there is a minimum amount of information you need to collect from the patient. You can decide how to collect this information in any manner you wish, provided that the interface is designed in accordance with the standards presented in the course text, *Designing the User Interface*. The information you should gather is:

##### Patient Information

- Patient’s Name
- Patient’s Date of Birth
- Name of Patient’s doctor
- The person using the interface  
(The only valid input for this question should be ‘Patient’ or ‘Caregiver’)

##### Symptom Assessment

The patient must answer the following three questions on a scale of zero to ten

- Wellbeing  
0 = ‘Best Feeling of Wellbeing’, 10 = ‘Worst Feeling of Wellbeing’

- Tired  
0 = 'Not Tired', 10 = 'Worst Possible Tiredness'
- Pain  
0 = 'No Pain', 10 = 'Worst Possible Pain'

### Pain Assessment

Since many palliative patients have major problems with pain, specific pain assessment questions could be useful. You should allow the user to specify exactly where he or she is feeling pain. At the very least, pain should be able to be specified in the following places:

Shoulders, Left Arm, Right Arm, Chest, Stomach,  
Right Leg, Left Leg, Back

You should also gather the following information about the pain:

- The time of the day the pain hurts (Morning/Afternoon/Night/All day)
- Does movement influence pain? (Yes / No)

### **Project Guidelines**

- This is an introduction to the VB design environment. So basically just drag-and-drop controls to enhance your interface and set a few options here and there (in the properties dialog). No coding is required. However, some obvious restrictions should be enforced when appropriate. E.g., if you use groups of radio boxes, there should be one and only one item in each group that is selected. (Still, no coding is needed in this case.)
- You should use only a single form. Your form should be no *larger* than 800x600.
- The focus is on the interface, and the grading criterion is centered on your interface design. Use command-buttons, check boxes, images, color, labels, etc. wherever and whichever way you feel would make an effective user interface.
- You must do this project individually.
- You should only use Microsoft Visual Basic .NET 2003 for this assignment. This software package was handed out during the second week of class. If there is a reason you cannot use this version, you should make special arrangements with the TA.

### **Grading Criteria**

The grading for this assignment will be based on three criteria:

1. Completeness: Did you do everything that was listed in the interface requirements? Did you create a screenshot of your interface with the correct name? Did you email your assignment with the correct subject?

2. Graphic Design: Did you make good use of concepts such as alignment, group, consistency, etc?

3. Aesthetics: Did you an appealing interface by using appropriate fonts, colors, images, etc?

### **Submission Instructions**

You will submit your assignments electronically. All that is required is a JPEG screenshot of the interface you designed. You should name your screenshot '<lastname>-<first-initial>-VB1.jpg'.

(Refer to Appendix 1 for information on how to create a screenshot in Windows and detailed instructions on naming your file).

Once you have created your screenshot, you should email it as an attachment to the TA ([adamp@cs.umd.edu](mailto:adamp@cs.umd.edu)). The subject to the email should be:

CMSC434-<lastname>-<first-initial>-VB1

The email must be received by 9:30am on February 19, 2004.

### **Appendix I: Capturing a Screenshot in Windows**

Capturing a screenshot in Windows is easy. First, run your Visual Basic project. Be sure no other windows are occluding your interface, and then hit the 'Print Screen' key on your keyboard. Then open up a graphics program, such as Paint or Photoshop, and select Paste from the Edit menu. This should paste an entire screenshot of your desktop. Then save this image as a JPEG with the following name:

<lastname>-<first-initial>-VB1.jpg

(Replace '<first-initial>' with your first initial and '<lastname>' with your last name. So if your name was Adam Perer, you should submit a file named perer-a-VB1.jpg).