Comp 3020 – Human-Computer Interaction I
Assignment #2
Handed out on: October 12th 2012
Due on: November 5th 2012 at midnight

PART I – Prototyping (30 %)
Use the project for completing this part of the assignment.
(a) Select three major tasks in your application, and produce the respective hierarchical task graphs (HTG). For instance, one could be for searching, the other for placing reviews, and the other for bookmarking which movies to watch next. There should be at least five (hopefully more) major tasks within your system.

(b) Create the low fidelity prototypes (storyboards) of the major tasks you selected above. You should start with the basic grids that will become the underlying structure of your screens.

(c) Evaluate your prototypes with the end-users you selected in Assignment #. There should be **at least** 4 users.

(d) Document the feedback on the prototypes obtained from your users.

(e) Modify your prototypes based on your findings and with .NET or your GUI development tool of choice, translate the low-fidelity prototypes to high-fidelity versions. The high-fidelity version should include the modifications. You should include proper grid layout, screen design guidelines and include basic navigation from screen to screen in your system. You do not need to include data at this point.

Hand-In: the grids for the layout of all your screens, the low-fidelity prototypes, the high-fidelity prototype (screen shots + comments of what was modified from the initial prototype), as well as a written description of part (d).

PART II – GUI Components in .NET (40 %)
Treat each part separately by creating a separate .NET project for each.

(a) Keyboard Input
On your main form drop a panel and change its color. When the user enters "r" and then inputs a number, n, move the panel n pixels to the right. If the user enters "l" and then inputs a number, n, move the panel n pixels to the left.

(b) Timer
Insert a Picture Box, an Image List and Timer on your form. Implement the form such that after every 10 seconds a new image appears in the Picture Box. You should include at least 5 images.

(c) Scroll Bar
Insert a text box on your form and a horizontal scroll bar at the bottom of your form. Your application should behave as follows:
- When the user enters text, the text box should grow by a small amount

- When the text box grows beyond the width of the form adjust the scroll bar so that the user can scroll to see the text box beyond the limits of the form.
(d) Drawing
Create a form that will draw all the mouse movements of the user on the screen.
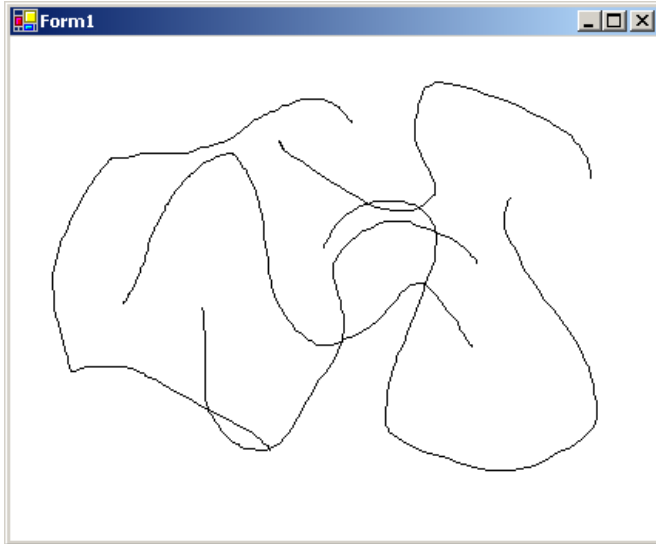
Hand-In: for each part submit the .exe and source code to the TA in an email. The source should be commented where appropriate.

PART III – Accessing Data and 2D drawing in .NET (30 %)

This part of the assignment is designed to get you started on creating a GUI application which will use an XML file (or text file) as a back-end storing medium. It will also allow you to apply the concept of direct-manipulation. The sample application will be demonstrated in class and is on the web. Your application should contain the elements that are in this application. You should enhance the application to include error messages.

1) Create a GUI application similar to the one presented in class and on the website.
2) The application should allow you to add/edit/delete contacts to/from your address book.
3) You should be able to view records based on directly manipulating the "age" field at the interface.

BONUS (10%): Recommend trying this part. You should allow the user to view a scatter-plot representation of age vs. university year. The result of the scatter plot should give you dots on the screen. The size of each dot represents the number of people within that category. Use color coding to indicate the predominant gender in that category (yellow means there are equal number of males as there are females).You should manipulate the scatter-plot on the "# of years" field.

| (a) scatter plot display when user drags slider to show the number of people studying for 4 years and under at the U of M. | (b) scatter plot display when user drags slider to show all the students in your address book. |

Hand-In: the executable, including instructions on running it, the XML file and any other necessary information to make the application work. If your instructions for running the application do not work, it will be considered as not completed. Please e-mail the application to the TA in a .zip file with the following name: "cs302_group#_a2p3.zip".

Format and guidelines
(a) All answers should be typed using an appropriate word processor.
(b) Your document should be properly structured.
(c) Where appropriate, always provide a rationale for your answer.