SCHOOL OF DIGITAL MEDIA & INFOCOMM TECHNOLOGY

DIPLOMA IN INFORMATION TECHNOLOGY
VISUAL BASIC PROGRAMMING

ASSIGNMENT (2009/2010 S2)

Objective of Assignment

To allow students to practice what they have learnt in Visual Basic Programming by developing a memory game.

Instructions and Guidelines

1. The complete assignment must be submitted to your tutor by **4-Feb-2010** (Thursday) **5pm**. Students are required to submit the VB program through BlackBoard. Provide your class group, admission number, and name in the 'Comment' field.

2. Students are encouraged to work in pairs.

3. Marks will be given separately for each student in a pair, depending on his contribution to the assignment.

4. The development platform will be **VB.Net** only**.**

5. As this is a programming module, your contribution to the project has to be in the programming aspect.

6. The interview will be conducted during the practical lessons in **week 16 or 17**. Students are expected to explain the program logic and modify the program during the interview. Students who are absent from the interview will be awarded zero mark for the assignment.

7. No marks will be awarded, if the work is copied or you have allowed others to copy your work.

8. 5 marks will be deducted for each day of late submission.

Programming Task

Develop a Visual Basic application that stipulates the memory game.

Figure 1: Default character at Start-Up remain open

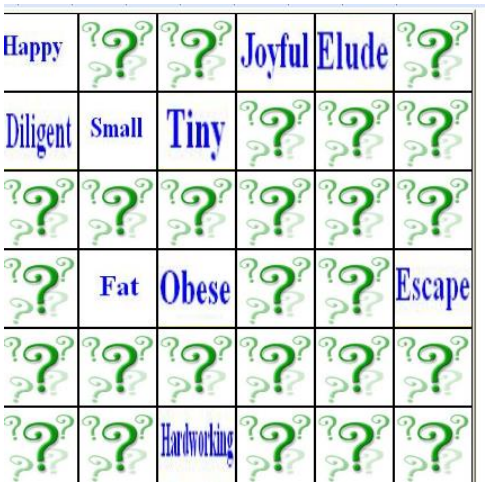

Figure 2: Pictureboxes with synonyms

Minimum requirements:

Submitted programs are expected to meet the following minimum requirements:

- Your program should comprise the following forms and classes:
  - An animated splash screen (Welcome screen)
  - Main game form
  - Help form(s) containing instructions on how to play the game
  - Congratulation form, displayed when player manages to guess all words
  - Hall of Fame, displaying a list of all the gamers' names and timing.
  - Cell class representing a cell in the grid (should have properties such as filename, pair_id, etc)
  - DbCell class

- Your program should retrieve all image filenames from the database and store them in an array.

- Randomly assign an image to each cell in the 6 by 6 grid. An image that has been assigned should **Not** be assigned to another cell, i.e. the same image should not be assigned to more than 1 cell.

- The 6 by 6 grid must be able to display the 18 randomly selected images together with their corresponding synonyms i.e. 36 images, as shown in figure 2.

- Display time elapsed on game form.

- At the beginning of the game, all the pictureboxes should display the same default image (i.e. pictureboxes are **closed**), as shown in figure 1.

- To open a picturebox, click on it and its image displayed should change to the randomly assigned image.

- When the second picturebox is opened, your program should check if the words (or meaning) in the 2 most recently-opened pictureboxes are synonyms.

Pictureboxes that display synonyms should remain open (i.e. display the synonyms).

- If the 2 most recently-opened pictureboxes do not contain synonyms, your program should close both of them (i.e. change the displayed image to the default image).

- To complete the game, the player must guess all synonyms correctly, i.e. all the pictureboxes are open. Once the game is completed, a congratulation screen is displayed.

- If the player fails to guess all the synonyms within the time limit set (e.g. 5 minutes), they will lose the game.

- The program must display time elapse.

- The pictureboxes must be implemented using control array, i.e. they are created in runtime.

- You are encouraged to use your own creativity to come up with the design of the GUI of the program.

Advanced features:

Bonus marks will be awarded for advanced features, such as, but not limited to the following:

- Animated effect of picturebox opening or closing.

- Maximum number of attempts allowed within time limit.

- Background music / Sound effect

- Hall of fame feature to keep and display the names of the top-10 players who manage to complete the game in the shortest time (required external files or database).

- Allow the customization of GUI such as allowing the player to select grid size, color theme, etc.

Please keep in mind that all these are just bonus features. The tutor will not give you any advice on these features. You are encouraged to do some research from the Internet or library on your own. You should note that the main bulk of marks are allocated to the completion of a workable program that meets the minimum requirements.