Interactive Game-based Quiz development for ME1101 course
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Abstract

The objective of this UROP project is to create an online gaming quiz on the topic of welding. It is meant to be a fun, relaxed and interactive quiz for students to learn. And at the same time, the objective was meant to research on using flash to create a quiz.

Results

The program used to create the quiz was Flash 5.0. Different layers of pictures, words and buttons had to be combined to form the quiz. They are built from bottom to top, with each layer ‘stacking’ up over one another. The various layers will therefore overlap to create the overall image of the quiz.

Figure 1: General view of the quiz with a layer highlighted

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Besides creating layers, Frames had to be created to form the quiz. These frames are similar to movie clips whereby the quiz moves from one frame to another.

**Key frames**

A key frame is a frame whereby changes to animations or graphics can be specified. They can be identified by frames with dots. By dragging the keyframes over a few empty frames, the animations or graphics created on the keyframe will be brought over as well. This can save time as there is no need to redo a whole frame from scratch.

**Graphics**

Graphics are basically pictures that are used in the quiz. They have no links to other frames and no actions, in other words, they are considered static.

**Buttons**

Buttons are graphics that create a link to another frame or url. In this quiz, all of the buttons link to another frame. Examples of buttons are the answers A, B, C, D, Next, Exit, Try Again and the advisors (on certain frames).

To edit a button, there are 4 frames that can be edited. Namely Up, Over, Down and hit.

- **Up** - This is the picture that appears when the page is first viewed
- **Over** - This is the picture that appears when the mouse cursor is moved over the button
- **Down** - This is the picture that appears then the person clicks on the button
- **Hit** - The picture on hit is not visible to the viewer

![Figure 2: Buttons in edit mode](image)
Action scripts

These are scripts that tell the program what to do when the frame appears or when a button is clicked on. In this quiz, the action script used for frames is Stop O. This will cause the program to stop at that frame and stay there. Frames that that have an action script are those marked with a letter ‘a’.

The action script for buttons is Go To. This will cause the program to go to a certain frame when the button is clicked on.
Dynamic/static text

To create a counter for the score, a dynamic text was used. This is another type of action script used to count. In this quiz, the script used is x +1 and x += 0. For the script x + 1, the counter will add 1 when the frame is reached. Although the script for x += 0 is not necessary, it was used to experiment with counters and how different scripts can be written for various counters.

Discussion

This quiz serves as an e-based learning tool for students who would like to test their knowledge on a welding or other topics. This quiz can be done in the comfort of their homes, and they could raise any doubts about the quiz during tutorials or lecture breaks. There is a total of 18 questions and students may ask the advisors only once, after which they would have to decide on their choice of answer. If they should get the answer wrong, they may try the question again, however it would not be counted towards the final score should they get it right in subsequent tries.

Although cutting and pasting solve certain problems, certain layers such as ‘Advisors + Answer’ are unique to each other. Therefore each frame had to be edited individually, which was a tedious process.

Using basic features of Flash 5.0, the quiz was finally completed after several months of editing and creating. Learning to use Flash was a new and enriching learning experience. This project has given me a better appreciation of using the program to design and animate.

References:

1. [www.help4flash.com](http://www.help4flash.com)

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