

CS101 – Course Project

Software Requirement Specification

Wednesday Batch
311

TA – Dinesh Patil
Team

Team 1 : Ezwindows – Graphics and UI

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Introduction

Our project attempts to create a quiz game along the lines of the popular gameshow “ Who Wants To Be A Millionaire“. The player answers multiple choice questions 4 options out of which only 1 is correct. If the player is able to answer 12 questions correctly, then he wins the game. Graphic User Interface has been implemented using EZWindows.

Gameplay

The questions are selected at random from a question bank. The questions have been categorized on the basis of their difficulty. The user has the option of giving input via the screen or keyboard. The money won up to that time is displayed on the right hand side.
A timer is displayed. The player is given 30 seconds per question.

The screens

Screen 1 : It is the welcome screen.

Screen 2 : The player is then taken to the main menu from where he can access the following options.

- 1.Play
- 2.How to Play
- 3.High Scores
- 4.Credits
- 5.Exit

Screen 3 : This is the main playing screen. This screen is accessed from the main menu. The questions and options are displayed on the left of the window. The money tree is shown on the right side. A timer window and quit button are also displayed. Further lifeline buttons are available.

Screen 4 : This is displayed after the gameplay terminates either via a win, wrong answer or time out. Before this screen is opened, the player is prompted to enter his name. This screen shows the players score and time taken to reach this score. If the score is a highscore, the player is notified of this. A "Restart" button is also featured which allows the player to start a new game.

Screen 5 : Instructions screen. States the rules and format of the game. Explains the lifelines available and the scoring system.

Screen 6 : High Score screen. Shows the high scores of the top 5 players. This list is updated every time the game runs.

Screen 7 : Shows the credits.

Functionality

The game begins and the main program proceeds to display the opening screen and the main menu. The "How To Play" and "Credits" choices in the main menu simply involve displaying one screen with the relevant information in it and a "Back" button to go back to the main menu.

The "Exit" button will end the program and cause it to exit, once a player chooses to begin the game, the main program will flow as follows.

Question Selection

All the questions are maintained in a 3 files, one each for easy, medium and hard questions. Depending on the players progress, one of the 3 question bank files is copied to 20 clases. Each question is defined as a class and has associated to it

- The question text
- Four options
- An alphabet (A,B,C,or D) which points to the correct option

A random picking function picks a question object, checks whether it is a “used” question or not, and then proceeds to display it on the screen along with the 4 options and the timer.

Checking If The Question Selected is Used

A 20 cell integer array is maintained with all the values initialized to 0. When a question is used, the index corresponding to that question is incremented to 1. Checking if a question is used consists of checking if the index corresponding to it is 0 or 1. If the question is used, the question selection loop will restart.

The Timer

A circle is drawn and a two digit number from 00 to 30 is displayed in the circle depending on how much time has elapsed. The number displayed is decreased by one every one second and the new number is displayed instead of the old one.

Playing The Game

If a question is answered wrongly the main game loop is broken and the game over screen is displayed. Then a screen is displayed prompting the player to enter a 5 character name for logging high scores. If the question is answered correctly then the question selection and presenting loop will be repeated till the player answers a question wrongly. The number of questions correctly answered is tracked using a count variable. After answering 12 questions the loop is made to break. The “Game Won” screen is displayed, which will closely resemble the “Game Over” screen in all but the text displayed. A “Restart” option is provided at the “Game Over” screen to restart the game. This works by starting the main game loop again.

Money Tree

A money tree is shown on the right side of the game screen, which tracks the player's progress. The money won by the player is displayed along with the lifelines.

Graphic User Interface and Requirements

This has been implemented using EZWindows. The user can use the mouse to give his response. For this, regions have been defined in the windows. Response given via mouse is recorded according to the option button on which the mouse-click occurred.

Requirements

- Playing the game - Mouse with left click function, or Keyboard
- Logging high scores - Keyboard

References

Class Notes

Lab handouts

Programming in c++ by Cohoon and Davidson

Object Oriented Programming with C++