AS Coursework

A Quiz in C#

Contents

[Background 2](#_Toc183767688)

[Client 2](#_Toc183767689)

[Users 2](#_Toc183767690)

[User Requirements 2](#_Toc183767691)

# Background

The system will have the aim of testing and building upon the user’s knowledge of Team Fortress 2, including its classes, weaponry, maps, items, and history. I have decided to base the quiz on Team Fortress 2 (or TF2) in order to assist those who are new to the game, and allow them the ability to familiarise themselves with the concepts and fundamental mechanics of the game before they play it themselves, or as they are playing it, permitting them to develop their skills further than someone only playing the game would be able to.

The quiz will develop the user’s knowledge on important facets of the game, as well as the underlying story if they are interested. It will assist the user in becoming proficient at the game’s general strategy whilst playing as different classes, as well as the more advanced tricks and techniques individual to each class (for example, rocket jumping as the Soldier, sticky jumping as the Demoman, trickstabs as the Spy, etc.), allowing each individual user to place an emphasis on their class of choice and develop their skills with them as well as their general game sense.

# Client

The client this system is developed for is Ms. McKittrick, who is looking to improve with regards to TF2. He already has a basic knowledge of the game and its mechanics, although he would like to both increase and maintain his skill. He is interested in developing his skills in the game in order to compete efficiently in the game as his class of choice, the Soldier, as well as progress his capabilities with other classes in the game.

# Users

The user of the system will be people who are looking to develop their skills in TF2. This will be either: people who are new to the game, and interested in developing fundamental skills which will be needed for success in the game, as well as more advanced, long-time players, who are looking to advance their skills further and utilise more complex techniques when playing their class of choice.

# User Requirements

1. The quiz will focus on users who are new to TF2, resources will be available for more advanced players looking to improve further, although the quiz will primarily focus on providing support for newer players learning the mechanics of the game for the first time.
2. The quiz will include a wide variety of questions to test the user on their game knowledge and skill. For example, users may be tasked to drag and drop the correct weapon name to an image of the weapon, guess the weapon based off their stats, with hints as to the correct weapon (e.g., year of release, slot it is used in, class it is used by)
3. The quiz will contain the ability to select a character to represent the user throughout the quiz. The characters will be the 9 classes from TF2 and each will have a special ability which may be activated by pressing an ability icon in the bottom right of the question screen. If the ability is not available due to being uncharged or already used, the ability icon will appear greyed out. The special abilities for each character are as follows:
   * Scout – Double Jump – The user may skip the question, automatically getting it correct. Marked via a sound effect – 3 question charge
   * Soldier – Buff Banner – The user gains double the points for the next 3 questions, marked by an icon appearing over the character’s ability icon – 4 question charge
   * Pyro – Flare Gun – If the previous question answered was correct, gain triple the points for the current question. This is marked by a Critical Hit indicator appearing over the character’s ability icon – 3 question charge
   * Demoman – Eyelander – Exponentially gain more points for each question answered (0.5 per question answered, with a max of 2 extra points) but the bonus is lost if a question is answered incorrectly, rewarding skill when answering questions – Passive ability
   * Heavy – Brass Beast – Remove 2 incorrect answers from the potential answers to the current question. Removed questions will appear to have bullet holes, indicating they cannot be clicked – 2 question charge
   * Engineer – Teleporter – Return to any incorrectly answered question, allowing the user to receive another attempt at the question. This is marked by a display which appears as a red coloured screen with scanlines, showing each individual question number as a button. Each question may only be returned to once – Three time use
   * Medic – Übercharge – Immunity for next 3 questions, allowing the user to not get a question incorrect whilst Übercharged, providing the user an advantage whilst answering unfamiliar questions. The usage of this ability will be marked by a red hue around the border of the screen and a static sound playing to indicate an Übercharged state – One time use
   * Sniper – Razorback – The user gains another try on the current question, increasing their confidence when answering as they can be sure they have another chance if the question is answered incorrectly. Marked by an icon of the Razorback appearing over the character’s ability icon – 1 question charge
   * Spy – Disguise Kit – Switch to a different set of questions called BLU side questions, which are comparatively easier than RED side questions, however the user cannot switch back unless they get a question wrong and their disguise is broken – One time use
4. Display of a splash screen including a loading bar which will appear on the screen for three seconds to permit the forms to load properly. The splash screen will also include the name of the quiz and a logo for the quiz.

Processes

* + Appears for three seconds
  + Includes text showcasing the percentage that the loading bar has progressed

Outputs

* After the loading bar is filled, the splash screen will be hidden and the login screen will be shown

1. A login screen which will allow users to either log in with an account they have previously made and continue, or choose to register a new account to use in the future.

Inputs

* Allow the user to input a username and a password
* Allow the user to press a button which will send them to the register screen

Processes

* When the log in button is pressed, the username and password will be checked against a database containing the usernames and passwords of each account

Outputs

**If details are correct**

* Login screen is hidden and the main menu of the quiz is shown

**Otherwise**

* The user will be prompted to re-enter their details and the entry fields will be cleared
* If the register link is clicked, the login screen will be hidden and the register screen will be shown allowing the user to create an account

1. A register screen which will permit users to create a new account if they had not yet created one, permitting them to store their scores allowing them to return to the quiz at a later date and retry it, permitting them to compare their newer scores with their previous attempts

Inputs

* The user will enter their username and password of the account they would like to create
* Allows the user to press a button to return to the login screen

Processes

* When the register button is pressed, the username and password are checked against the database to ensure the account does not already exist

Outputs

**If account does not already exist**

* Account is added to database
* Register screen is hidden and main menu is showed

**Otherwise**

* The user will be told the account already exists and the entry fields are cleared, prompting to re-enter their details