

Programming Project / C++ – Hangman Manager and Player System –

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I. Task Description

Student 1 is responsible for managing the game:

- Adding/removing words to the word list
- Viewing the leaderboard and player history

Student 2 is responsible for interacting with the game:

- Playing the hangman game using the available words
- Saving the player's score to the leaderboard

II. Classes Used by the Team

- WordManager

- Manages the word list used in gameplay.
- Adds, deletes, and views words stored in words.txt.

- Leaderboard

- Stores and retrieves player scores.
- Aggregates multiple scores per player.
- Can show individual player history.
- Used by both the score manager and Hangman game.

- HangmanGame

- Main gameplay class.
- Loads words, manages guesses, and updates game state.
- Saves session progress to game_state_<name>.txt.
- At the end of a game, it calls Leaderboard to save the player's score.

Class Relationships:

- `HangmanGame` directly uses `Leaderboard` to store results when a player finishes a game.

III. File Structure

The following files are used:

- words.txt
Stores the word list. One word per line.
- leaderboard.txt
Stores scores. Each line is in the format: <player_name>,<score>
- game_state_<player_name>.txt
Temporarily stores the current state of a running game so players can resume guessing in separate commands.

Source code files:

- WordManager.h / WordManager.cpp – Handles word list
- Leaderboard.h / Leaderboard.cpp – Manages scores
- HangmanGame.h / HangmanGame.cpp – Main game logic
- HangmanApp1.cpp – Entry point for managing words and scores
- HangmanApp2.cpp – Entry point for starting and playing the game

IV. Interacting with Executables

Application 1 will offer the following options:

`./app_1.exe add_word <word>`

To add a word to the list of available Hangman words

`./app_1.exe delete_word <word>`

To delete a word from the list

`./app_1.exe view_words`

To view all available words

`./app_1.exe view_leaderboard`

To view all scores saved by previous players

`./app_1.exe view_history <player_name>`

To view all past scores for a specific player

Application 2 will offer the following options:

`./app_2.exe play <player_name>`

To start playing the game

`./app_2.exe guess <player_name> <letter>`

To guess a letter