

# Programming Project / C++ Hangman Game

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## I. Task Description

Student 1 is responsible for:

- Designing and implementing the user interface for the Hangman game
- Managing the leaderboard system (tracking player scores and rankings)
- Handling file input/output operations (loading words and saving leaderboard data)

Student 2 is responsible for:

- Implementing the core Hangman game mechanics (guessing letters, checking win/lose conditions)
- Maintaining game history (storing past games played, guesses made, and results)

## II. Data Types/Classes Used by the Team

The following classes will be used:

Player:

- string name
- int score
- int games\_played

GameWord:

- string word
- bool guessed\_letters[] (tracking which letters have been guessed)

GameHistoryEntry:

- string player\_name
- string word
- int attempts
- bool won

## III. File Structure

The following files will be used:

words.txt

A file containing all the possible words for the game, stored as:

<word\_1>

<word\_2>

...

leaderboard.txt

A file containing player scores and statistics, stored as:

<player\_1\_name> <score> <games\_played>

<player\_2\_name> <score> <games\_played>

...

history.txt

A file logging past game sessions, stored as:

<player\_name> <word> <attempts> <won (1 or 0)>

<player\_name> <word> <attempts> <won (1 or 0)>

...

#### IV. Interacting with Executables

Application 1 (Interface, Leaderboard, File Handling):

./hangman\_app\_1.exe view\_leaderboard

To display the current leaderboard

./hangman\_app\_1.exe view\_history

To display past game history

./hangman\_app\_1.exe add\_player <name>

To add a new player to the leaderboard

./hangman\_app\_1.exe reset\_leaderboard

To reset all leaderboard data

./hangman\_app\_1.exe add\_word

To add a new word to the word list

Application 2 (Game Logic and History):

./hangman\_app\_2.exe start\_game <player\_name>

To start a new Hangman game for the player

./hangman\_app\_2.exe guess\_letter <letter>

To guess a letter in the current game session

./hangman\_app\_2.exe view\_word\_status

To view the current revealed letters of the word

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./hangman_app_2.exe end_game
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To end the current game and save results to history and leaderboard