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Project Specification: Hang Man

**Problem Definition:** We want our program to run a successful game of Hang Man. To do so, it will input words from a file, keep track of multiple users, allow users to take turns to guess letters in the active word or guess the active word, limiting the guesses based on difficulty selected by the user (this may be a place to implement graphics). In addition, the program will export files that track user statistics, even after the program has been closed.

**Assumptions:** We assume that users will not use numbers or symbols when guessing the letters. We also assume that users will enter their names in a consistent manner, so that the statistics tracking will work correctly. We also assume that users will not input in the “name” field a name that is the same name as one of our source files, because that would be bad.

**Design:**

|  |  |
| --- | --- |
| Player | Game |
| \*string name  \*int wins  \*int losses  \*int timesPlayed | \*string word  \*array of player players  \*int guesses |
| +string getName()  +int getWins()  +int getLosses()  +double getAverage()  +int getTimesPlayed()  +void setName() | +void makeTurn()  +void guessWord()  +boolean checkWord(string, string)  +void guessLetter()  +Boolean checkLetter(char, string)  +void chooseCategory()  +void openFile()  +void updatePlayers()  +void SaveScores() |

\*private

+public

**Properties:** We plan to use inheritance to allow users to select easy, medium, or hard difficulty, as these classes will then use the same functions as a ‘Game’ class, but be changed in how many guesses they allow the user to make. ‘Player’ and ‘Game’ are both classes that are defined in separate .h and .cpp files. ‘Player’ manages information about users, especially with regard to win/loss statistics, while ‘Game’ manages the functions that are necessary to implement the game itself.