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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  \* vector <player> players;  \*int guesses  \*string \_found |
| \*void setWinCount(int win)  \*void setLoss(int loss)  \*void setTimesPlayed(int played)  +player()  +player(string \_name)  +player(string \_name, int \_wins, int \_losses, int  \_timesPlayed)  +string getName()  +int getWins()  +int getLosses()  +double getAverage()  +int getTimesPlayed()  +void setName()  +int getTimesPlayed()  +void setName(string \_name)  +void upWins()  +void upLosses()  +void upTimesPlayed()  +void createPlayer()  +void saveScore() | \*bool checkWord(string guessword)  \*void checkLetter(char guessletter)  \*string current(int n)  \*void findLetterPos(char guessletter)  + void addPlayer(player p)  +player getPlayer(int pos)  +player createPlayer()  +char chooseCategory()  +void openFile()  +void chooseWord(ifstream& fin)  +bool makeTurn()  +bool winGame()  +string guessWord()  +char guessLetter()  +void updatePlayers(bool win, int winner)  +void play()  +void saveScores() |

\*private

+public

**Properties:** ‘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.