**Final Project Statement of Work Template**

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| Rami Toma |

**Group Number:**

**Group Leader:**

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| Hussein Alanbari, Tajwar Rahman |

**Names of Group Members:**

**Summary of what your program will do (be very specific):**

The purpose of this Program is to make a Hangman type of game with two difficulties.

The base class will take the json data with loads of words and input it inside a vector. It will also make a linked list from a template class. It will contain << and == overloaded operators to output via a function which takes in an ostream& and == compares the guessed word with the word selected. Base class only outputs to console how many times won/lost.

the inherited class derived from base class has an overloaded output operation which will changed the output by adding the percentage of attempts of guessing word with the overall win rate. (times won/attempts).

Aggregation class introduced a more difficulty game, that only uses words longer than 6 characters, pts earned are doubled, 3 chances instead of 6. The word is also chosen by random as well.

template class will create a linked list. It will contain a struct, delete, push, return amount of times won, return amount of times lost, output to an ostream& (this will usually happen when program is quitting, i.e. outputting to an external file and to console). This of course is dynamically allocated as well.

Search function/operation that is user defined by a single character or by word, that removed all words that begin with that letter or that specific word. if char is not a letter and if the word is not all letters, it loops back around clears the cin and asks again

BubbleSort function/operation will ask the user to sort based on ascending or descending order. This will iterate through the vector via iteration. It will be based on two char characters.

Their will be additional input regarding if you want to continue to play or quit.

When we output when the user quits it writes to a file. Their will be an output to the console indicating this.

**Decomposition with Assignments:**

Use the space to list the decomposition or outline of your program. Next to each section, provide the name of the student who will be working on that portion.

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| **Decomposition** | **Responsibility** |
| Base Class, Template Class | Rami |
| Derived Class, Searching Operation | Hussein |
| Aggregation Class, Sorting Operation | Tajwar |
| Main Setup, Entering Input | Everyone |