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C++
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Project Idea

The project that we chose to work on was the Correct the Word game. The goal of this game was to create a text file of words that would randomly select a word from a list, scramble that word, and prompt the user to guess the correct spelling of the word until it was correct. If the user guessed the correct word, they would score a point of one. However, if the user guessed the word incorrectly, the score would not be incremented and the user would be prompted to guess again until they got the correct answer. Once the correct spelling of the word was guessed, the score would be displayed and the user would be asked if they wanted to play again.

To write the program, we first had to decide what the variables were going to be as well as where they were going to be implemented in the program and how it was going to iterate through the list of words supplied. The random word generator was an important part of our code as the same word should not be shown multiple times in a row and the list should not be gone through sequentially. We also put the word scrambler in a string statement outside of the main function which was then read into the main function. The same happened for the void function which was used to read the directions into the file. For the user based part of the program, the users guess was put into a nested while statement. By doing this, if the user wanted to continue playing, the program could pick another word out of the list without opening and closing the dictionary file, which would have been inefficient. By figuring out how to implement what was previously stated through the use of an IPO chart and a flowchart, we were able to create a perfectly running Scramble the Word.

IPO Chart:

IPO	C++

Input
numberOfGames
totalGuesses
originalWord
userInput
choice
numberOfWords
	int numberGames = 0;
	int totalGuesses = 0;
	string originalWord;
	Char choice;
	int numberOfWords = 0;

Processing scrambleWord getDirections function getWord function	string scrambledWord; getDirections; getWord;
Output score	int score = 0;

Algorithm
 	
Void getDirections
String function getWord
Display directions
Read word from the file
Prompt user to play
Scrambled word shows up
Person guesses (compare users word to original word)
      If correct - +1
      If incorrect 0
Show score
Would you like to play again
User input of y or n	

Flowchart:
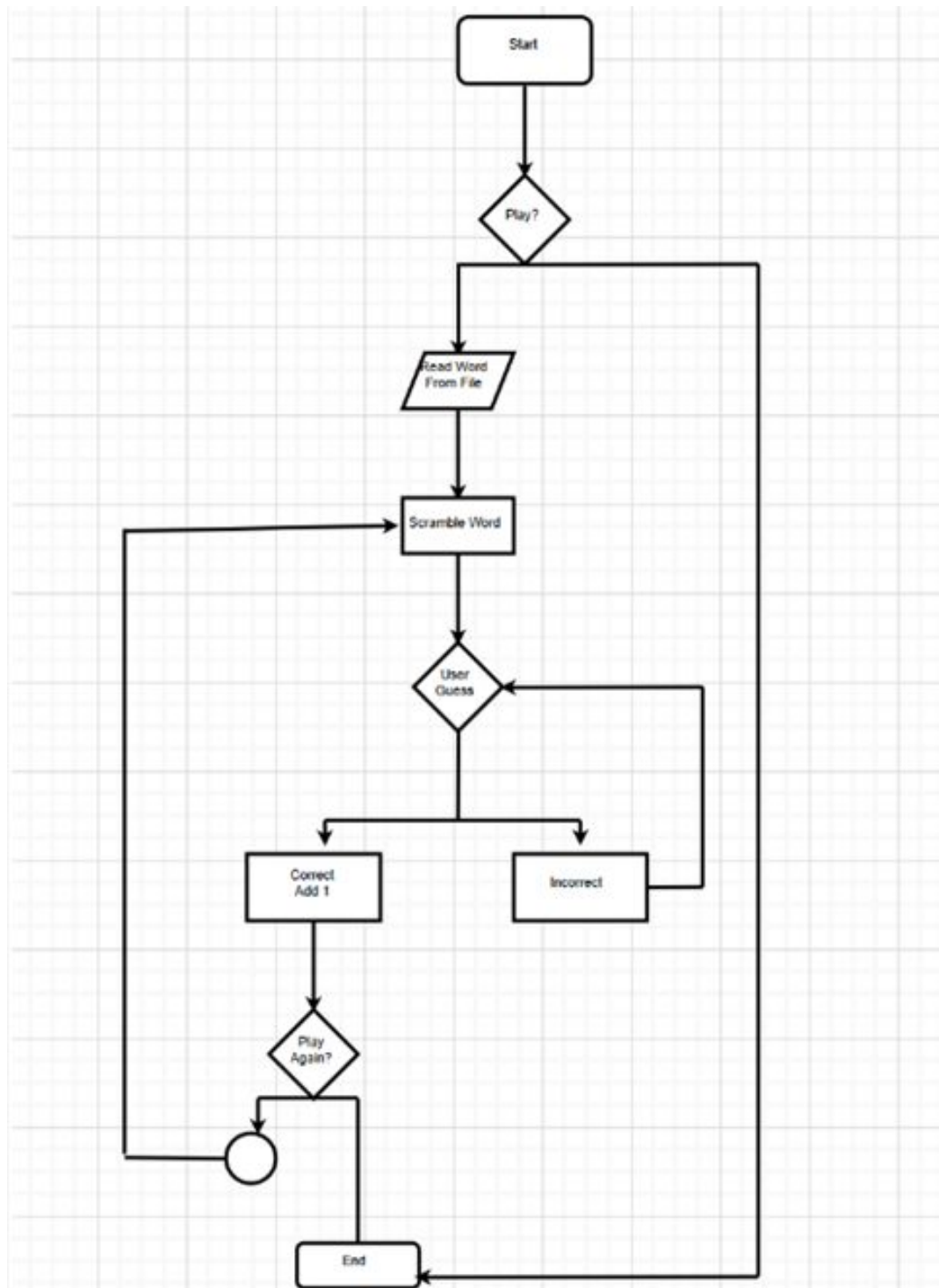
Test Specification:

In order to make sure that the program is working properly, we will test the program multiple times. Throughout the different tests, we will be looking at the dictionary text file to make sure that the order of the words being scrambled is going in random order. While making sure that the words are being randomly selected, we will also make sure that the words are being randomly scrambled. This means that you play the game a different word will be the starting word, and if the same word appears twice, they will be scrambled in a different order. One important thing we will look for, is for one word in the file to appear multiple times in a row. These issues would show a problem with the algorithm, which we would go back to and look at the logic to find the problem. We will run through the program multiple times to make sure that the issues that could happen in this program do not appear in the final product.