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Report

**Notable Obstacles**

The first obstacle I encounter is how to find the right number of planets. The function I write for finding planets always repeatedly count the planets. For example, if only one ‘e’ is a planet and there are two ‘e’ ’s in the probe word, my function would count both ‘e’ ’s as planets. Similarly, if there are two ‘e’ ’s in the secret word and only one ‘e’ in the probe word, my function also counts repetitively and return 2. Therefore, I solve the problem by breaking the loop as soon as a planet is found and replacing every letter that is either a star or a planet with a blank space to make sure the loop does not count the letter again.

I am also confused about when and how to use getWords() function. In the beginning, I misunderstood the specifications and thought user inputs should come from the word file. Since getWords() load words with the right number of lowercase letters, the c-string array I get as user inputs only contains valid words. In this case, if I pass this array as the parameter for runOneRound(), the function never outputs “Your probe word must be a word of 4 to 6 lower case letters” even when there are invalid words in user inputs. However, I later realize the program should prompt the user for probe words.

**Pseudocode**

find stars

find the shorter word between probe and secret

repeatedly:

count corresponding letters in probe and secret that are equal

find planets

repeatedly:

if corresponding letters in probe and secret are equal

replace the letters with blank spaces

else compare the current letter in secret with all letters in probe

count letters that are equal but are not stars

replace the letters with blank spaces

check if a word is contained in an array of words

repeatedly:

if a word in the array is equal to the target word

return true

run one round of the game

repeatedly:

prompt user for probe words

check if the input is valid or contained in the word array

write the number of stars and planets

write the score if probe and secret are equal

main routine

load words into an empty array

prompt the user for the number of rounds

repeat for input rounds:

find a random secret word from the array

write the round number

write the length of the secret word

run one round

write the score

if the result is larger than current max

replace max with the score

if the result is smaller than current min

replace min with the score

write average score, max, min