1. In project2, one of the most serious obstacles is that we can’t use loop. While compiling, I always came up with solutions using loops first and failed to transfer them into recursion versions. After considering the method provided in Q&A, I finally succeeded in creating several “loop helpers” using only recursion code. Besides, it took very long time to traversal the words.txt to match potential words, so I changed to employ binary search given that the dictionary is arranged alphabetically. Moreover, my program tended to show a matching word more than once when input had two same letters (for example, three); I added a step to remove repetitions.
2. 1. purple – to test if the program correctly produces one single output.

2. top – to test if the program produces results that contain switched orders of the input

3. 10th and zygote– to test if the program produces correct results with extreme values(the first and the last word in the dictionary

4. AAA – to test if the program produces correct results that contain capital letters

5. three – to test if the program works fine when input contain same letter

6. 1st – to test if the program produce correct result that contains number