

1. Which data structure(s) did you use for part 1? Why did you select these data structures?

A: I used Trie. I chose Trie in order to challenge myself.

2. What is the runtime (in asymptotic notation) of searching for a food type? Do you think there is a more efficient runtime?

A: $O(n)$; where n is length of `user_input` as we need to search for the right Trie for each character of input. This is the most efficient runtime I can think of.

3. Which data structures did you use for part 2? Why did you select these data structures?

A: I used HashMap. The reason for selecting HashMap over LinkedList is higher efficiency.

4. What is the runtime (in asymptotic notation) of retrieving the restaurant data? Do you think there is a more efficient runtime?

A: $O(1)$; The most efficient runtime

5. Outside of this project, what are other innovative ways you can utilize data structures?

A: I found Trie very useful when it comes to searching for words that start with specific letters.