Q1: (logic)

Clap at 7 Fun Party Game:

This is a fun party game that you have to just start saying numbers one after the other like “1, 2, 3, 4…”, and when you encounter 7 in the number that you are supposed to say, you clap instead of saying the number, and next person follows with the next following number. Suppose there are less than 100 people in the party, and every person says number once and one by one, what we need to do is to count how many people clap in the game given the total number of people in the party.

There are two situations when you need to clap:

1. For all the numbers in the table of 7, such as 7, 14, 21, 28, 35.

2. For all the numbers that contain 7, like 7, 17, 27, 37, also all numbers between 70-79.

For example, if the number of people given is 27. Then the number of claps is 5

7,14,17,21,27

If the number of people given is 28, then the number of claps is 6.

Q2: (Set)

What everyone loves for dinner?

Suppose you are deciding what to eat for dinner with your group members. Everyone has his or her preferences, which are represented as an array of strings. The food inside each preference is separated by blank space (“ ”). Your goal is to find the food that everyone loves. If there is more than one food in the result, return the array in order of the length of the food string. So if two foods tie, the one with the shorter string goes first. If two strings have the same length, sort them lexicographically.

For example,

preferences = [“pizza ramen sushi”, “sushi hotpot spaghetti”, “salad ice-cream sushi”]

Returns [“sushi”]

preferences = [“pizza ramen sushi”, “sushi hotpot spaghetti”, “”]

Returns [“”]

preferences = [“pizza ramen sushi”, “sushi ramen spaghetti”, “ramen ice-cream sushi”]

Returns [“ramen” , “sushi”]

Q3: (Maps)

Prepare food for customers:

Suppose you are working at a restaurant, and your duty is to find the most popular items that costumers would like to order based on a small group of orders, (the item that shows the most) which are represented as an array of strings. The food inside each order is separated by blank space (“ ”). If there is more than one item in the result, return the array in order of the length of the food’s string. So if two foods tie, the one with the shorter string goes first. If two strings have the same length, sort them lexicographically.

For example,

orders = [“hamburger fries drink”, “hamburger tenders waffles drink”, “pizza fries drink”]

Returns [“drink”]

orders = [“fries”, “hamburger tenders waffles drink”, “pizza fries drink”]

Returns [“drink”, “fries”]

Q4: (Arrays and Maps)

Guess word:

Given a target word and a word that you guess with the same length with the target word, both are represented as string. try to find the point of the word you guess to the target word.

The way to define points of any word to the target word:

if a character of the word matches both position and the value(content), then get 2 points

if a character of the word matches only value, then get 1 point. (No worries about the uppercase or lowercase, all words and target are in Uppercase.)

For example,

target word: APT one of the words in word String: APT, point would be 6

(All three characters of the word have the same value and the same position. Therefore, 3\*2=6)

target word: APT one of the words in word String: PAT, point would be 4

(‘T’ has the same value and position like in the target word, 2 points for this, and target word contains ‘A’ and ‘P’ but not the correct position, 1 point for each, therefore, 1+1+2 = 4)

target word: APT one of the words in word String: PPP, point would be 2, in this situation notice P in the word String shows three times. While in the target word, P is shown once at index 1. Therefore, in this case the ‘P’ at index 1 matches both value and position for 2 points, while the other ‘P’s in the word receive no point (even not the point for the same value). Try to think in a way that if you don’t know the answer and guess all characters of the word as the same value, for example, “AAAAA”, then if the target contains no A, you should receive 0 point, if the target contains only one A, then no matter where the A is in the target word, you will receive 2 points for that A. And if the target contains two As, no matter where the As are in the target word, you will receive 4 points for those As.