Software Engineer Assignment

Question 1

There are companies and cleaners that work a particular day and time. A cleaner is linked with a company.

1. Friday is a holiday for cleaners.
2. Cleaners working hours are between 08:00 to 22:00.
3. Cleaners can complete multiple bookings each day according to their availability.
4. A booking can have 2 or 4 hours duration only.

The booking process should be created as below;

1. Availability check: This service should return a cleaner's list and available times. A cleaner might not be available at a particular time.
2. Booking creation: Each booking should be assigned to a cleaner. After a booking is created, cleaners' available times will be updated.

Technical requirements:

1. Use a queue mechanism for sending confirmation emails to the customer and companies when a booking has been created
2. Write functional and unit tests.
3. API documentation should be created automatically.
4. Any errors should be added to MongoDB.
5. The cleaner availability service should return the results from the cache.

Question 2

For two strings A and B, we define the similarity of the strings to be the length of the longest prefix common to both strings. For example, the similarity of strings "abc" and "abd" is 2, while the similarity of strings "aaa" and "aaab" is 3.
Calculate the sum of similarities of a string S with each of it's suffixes.

Input Format
The first line contains the number of test cases t.
Each of the next t lines contains a string to process .

Output Format
Output t lines, each containing the answer for the corresponding test case.

Sample Input
ababaa
aa

Sample Output
11
3

Explanation
For the first case, the suffixes of the string are "ababaa", "babaa", "abaa", "baa", "aa" and "a". The similarities of these strings with the string "ababaa" are 6,0,3,0,1, & 1 respectively. Thus, the answer is 6 + 0 + 3 + 0 + 1 + 1 = 11.
For the second case, the answer is 2 + 1 = 3.

Please submit your assignment to Github and share the link with us.

If you have any questions, please feel free to contact us.

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