

# Online assessment

Question 1. The input is a file list, and the content of the file is English articles (without punctuation). Please implement the word count program with best speed to print out the statistics of each word. Multithreading is allowed.

Example:

Input:

File 1:

hello java

hello word

file 2: java

Output: hello 2, java 2, word 1

Question 2. Given a non-empty string *S* and a list of non-empty words, *WordDict*, determine whether *S* can be split into one or more words that appear in the dictionary by spaces.

Note: Words from the dictionary can be reused when splitting. You can assume that there are no duplicate words in the dictionary.

Example 1:

Input: *S* = "leetcode", *wordDict* = ["leet", "code"], Output: true

Example 2:

Input: *S* = "applepenapple", *wordDict* = ["apple", "pen"], Output: true

Question 3. Design a mini payment system with the followings requirements:

1. The application must be designed by using micro services architecture.
2. Layout the architecture in both logical and physical design (deployment diagram).
3. The application must be designed by using micro services and hosted on cloud.
4. The latency of client <> server calls must be under 3ms, TPS is 100k (at least 100k transactions hit the DB at the same time).
5. System must be secured in both external API call and internal API call.
6. Specify methods to handle concurrency.
7. Freely to choose technical stack.

Question 4. Please design an end to end process that support CI/CD process, which can achieve zero service downtime during system deployment.

Question 5. Please provide a solution to generate the unique transaction id which must not be duplicated. Please describe the solution in detail, and explain what is advantage and disadvantage