1. You are given 1 string of alphabetical characters. Each character can occur 1 or more times. Put every third character into an array (3^{rd}, 6^{th}, 9^{th}, 12^{th},.....). Print the arrays and also the maximum recurring element.

   Sample Input 1:

   S = “abcbjjfgqaazckucccpcp”

   Sample Output:

   [c, j, g, a, k, c, c]

   Maximum recurring character: c

2. You are given a sorted array of integers. Each element in the array occurs 2 times expect one element. Find the element that occurs just once in the array in just O(logN) time and O(1) extra space.

   Sample Input 1:

   Array = 1,1,2,2,3,4,4

   Output Input 1:

   3

3. Aman is the CEO of a security company. He wants to send a secret message S to his colleague. The message is a single word consisting of only lowercase English letters but due to security reasons he decides to encrypt the message and makes a string X of length Y, such that after deleting a substring of non-zero length from X, the remaining string is S.

   Calculate the number of all such possible strings X he can form.

   Sample Input 1:

   Y = 3, S = a

   Sample Output 1:

   1326

   Sample Input 2:

   Y = 3, S = ab

   Sample Output:

   76

4. In the geometrical world of Fireland, the Triangles were having their sports day and wanted to end it with a nice formation. So, they called

upon Mr. Circle from Spaceland for help. Mr. Circle decides to arrange the Triangles in square formations. He starts with N Triangles and forms the largest possible square using these Triangles. He then takes the remaining Triangles and repeats the procedure. A square of side S requires S^2 (S to the power 2) Triangles to create.

Find the number of squares he will be able to form at the end of the process.

Sample Input 1:

N = 85

Sample Output 1: 2

Sample Input 2:

N = 114

Sample Output 2: 4

5. Rahul recently visited Atmana's Cafe and was highly impressed by the food. Being a food enthusiast, he decided to enquire about the ingredients of each dish. There are N dishes represented by strings S1,S2,…,SN. Each ingredient used for making dishes in Atmana's Cafe is represented by a lowercase English letter. For each valid i, the ingredients used to make dish i correspond to characters in the string Si (note that ingredients may be used multiple times). A *special ingredient* is an ingredient which is present in each dish at least once. Chef wants to know the number of special ingredients in Atmana's Cafe. Since Chef is too busy with work, can you help him?

Sample Input 1:

N = 3

S1 = abcaa, S2 = bcbd, S3 = bgc

Sample Output: 2

Sample Input 2:

N = 3

S1 = quick, S2 = brown, S3 = fox

Sample Output: 0

6. You are given with a list of words. For each word in a list, if any two adjacent characters are equal, change one of them to any random character. Determine the minimum number of substitutions so the final string contains no adjacent equal characters.

   Sample Input 1:

   ['add', 'boook', 'break']

   Sample Output 2:

   [1,1,0]

   Explanation:

   'add': change one *d* (1 change)

   'boook': change the middle *o* (1 change)

   'break': no changes are necessary (0 changes)

7. Scenario:
   a. You need to install and setup docker on 10 ec2 instances, IP of those instances are already known.
   b. You also need to create a user called “deploybot” on each host, and that user should be able to run all docker commands without using sudo
   c. Question
      i. What tools you will use, write and describe tools you choose, and a working script/solution which when executed perform above 2 tasks
8. Scenario:
   a. You are given admin access to one AWS account which runs production workloads
   b. Question
      i. What all steps you will review to ensure account and its services are running securely
9. Scenario
   a. Using the sample logs from https://raw.githubusercontent.com/elastic/examples/master/Common%20Data%20Formats/apache_logs/apache_logs
   b. Question:
      i. List out count of all status codes, output syntax doesn’t matter
         1. {'200': 9125, '304': 445, '404': 213, '301': 164, '206': 45, '500': 3, '403': 2, '416': 2}
      ii. List top 3 IP which are making requests