

Programming Test

1. Given a sequence of M and N, form smallest possible number under following condition
-> M denotes the sequence is decreasing, N denotes the sequence is increasing.

Constraints / Assumptions:

- 1] Digits must not repeat.
- 2] Allowable digits are 1-9.
- 3] Maximum length of input sequence will be 8 characters.
- 4] No characters other than M & N will be there in the input.

Example:

Input: M Output: 21
Input: N Output: 12
Input: MM Output: 321
Input: NN Output: 123
Input: MNMN Output: 21435
Input: NNNMM Output: 126543
Input: MMNMMNNM Output: 321654798

2. A mall wants to make a royalty program. For every 1,000,000 rupiahs spent on a mall tenant, will award a 10,000 rupiahs voucher to the registered customer. To get the voucher, the customers need to show the tenant invoice. This invoice will have a unique transaction ID and can only be used once. This voucher has a unique code that can only be used once. Each voucher has expired time for 3 months. Make a program and database to distribute and redeem the voucher (including registration and transaction). Make using CodeIgniter 4 or Laravel 10.
3. A farmer has 3 different capacities for a bucket of water, and the waterbucket capacity is a prime number between 0 to 30 liters ($0 < \text{Bottle } x < 30$). How many bottles from each different capacity does the farmer need to contain X liters of water ($100 < X < 10000000$) such that the total number of bottles needed is the fewest?

Example:

Bottle 1 = 5 litter

Bottle 2 = 7 litter

Bottle 3 = 11 liter

X = 100

Answer:

Bottle 3 = 9 bottles, Bottle 1 = 1 bottle, Bottle 2 = 0 bottle, total = 10 bottles
or

Bottle 3 = 9 bottles, Bottle 1 = 0 bottle, Bottle 2 = 1 bottle, total = 10 bottles

4. Tell us about your favorite project and how you completed it?
5. How do you explain the concept of MVC to your teammates?