**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: NNMMM Output: 126543

Input: MMNMMNNM Output: 321654798

1. 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.
2. 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 < Bottle x < 30). How many bottles from each different capacity does the farmer need to contain X litters 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

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

Answer:

* + - 1. Program: Random number with input M and N

Dekalrasi:

M,N:string

Rand:int

Algorithm:

Read(M,N)

If(input == “M” || input ==”N”){

Write(Rand);

}

1. Program: waterbucket farmer

Deklarasi:

Bottle:int

litters:int

Algorithm:

Read(Bottle)

If(Bottle == 1 || Bottle ==2 || Bottle ==3){

Write(litters)

}

Write(“Litters of Bottle: ”+litters)