Assignment-28: Mixed C Language

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1. Define a function to produce all the combinations of strings that can be made out of characters of a given string, selecting **r** at a time. Return a dynamically created array of strings holding all combinations.
2. Write a function to print all distinct patterns of 0s and 1s of a given length.
3. Write a program to print the system date.
4. Write a program to print the system time.
5. Given an array of size **n**, reverse it.
   Input format:
   - The first line contains an integer **n** denoting the size of the array.
   - The next line contains **n** space separated integers denoting the elements of the array.

     Output format:
   - Print the array in the reversed order, elements separated by spaces.
6. There is a series S, where the next term is the sum of previous three terms. Given the first three terms of the series: **a**, **b**, and **c**, output the **nth** term of the series using recursion.
   Input format:
   - The first line contains a single integer, **n**.
   - The next line contains three space separated integers **a**, **b**, and **c**.

     Output format:
   - Print the **nth** term of the series.
7. Define a structure `triangle` which contains lengths of the sides of a triangle. Sort a list of triangles according to their areas.
   Input format:
   - The first line contains a number **n**, which is the number of triangles.
   - The subsequent **n** lines each contain three space separated numbers (sides of the triangle).

     Output format:
   - Display the tuples `(side1, side2, side3)` of triangles in sorted order according to their area.
8. Define a function to remove duplicate numbers from an array. Return the resulting array.
9. Define a function to find the maximum frequency element in the given array.
10. Define a function to create an array of size **N** and store the first **N** prime numbers in it.