DSA_DAY5

https://www.geeksforgeeks.org/problems/bubble-sort/1

```
// User function Template for C++

class Solution {
  public:
    // Function to sort the array using bubble sort algorithm
    void bubbleSort(vector<int>& arr) {
        // Your code here
        // Bubble sort focus on sorting elements to last
        for(int i=0;i<arr.size();i++){
            bool swapped = true;
            for(int j=0;j<arr.size()-i-1;j++){
                if(arr[j]>arr[j+1]){
                    swapped = false;
                    swap(arr[j],arr[j+1]);
                }
            }
            if(swapped) break;

        }

    }
};
```

https://www.geeksforgeeks.org/problems/quick-sort/1

```
class Solution {
  public:
    // Function to sort an array using quick sort algorithm.
    void quickSort(vector<int>& arr, int low, int high) {
        // code here
        if(low<high){
            int piv = partition(arr,low,high);
```

```
            quickSort(arr,low,piv-1);
            quickSort(arr,piv+1,high);
        }
    }

  public:
    // Function that takes last element as pivot, places the
    // its correct position in sorted array, and places all sm
    // to left of pivot and all greater elements to right of
    int partition(vector<int>& arr, int l, int h) {
        // code here
        int piv = arr[h];
        int i = l-1;
        // bro l-1 means no piv case may happen so we can ret
        for(int j=l;j<=h-1;j++){
            if(arr[j]<piv){
                swap(arr[++i],arr[j]);
            }
        }
        swap(arr[++i],arr[h]);
        return i;

    }
};
```

https://www.geeksforgeeks.org/problems/non-repeating-character-1587115620/1

```
class Solution {
  public:
    // Function to find the first non-repeating character in s
    char nonRepeatingChar(string &s) {
        // Your code here
        vector<int> lst(26,0);
        for(int i=0;i<s.length();i++) lst[s[i]-'a']++;
```

```
        for(int i=0;i<s.length();i++){
            if(lst[s[i]-'a'] == 1) return s[i];
        }
        return '$';
    }
};
```

https://www.geeksforgeeks.org/problems/k-largest-elements4206/1

```
// User function template for C++
class Solution {
  public:
    vector<int> kLargest(vector<int>& arr, int k) {
        // code here
        vector<int>ans;
        priority_queue<int> pq;
        for(auto i : arr)pq.push(i);
        while(k--){
            ans.push_back(pq.top());
            pq.pop();
        }
        return ans;
    }
};
```

https://www.geeksforgeeks.org/problems/largest-number-formed-from-an-array1117/1

```
// User function template for C++
class Solution {
  public:
    string printLargest(vector<int> &arr) {
        // code here
        vector<string> t;
        for(int i: arr) t.push_back(to_string(i));
        sort(t.begin(),t.end(),[](const string& a,const strin
```

```
            return a+b > b+a;
        });
        string ans ="";
        if(t[0]=="0") return t[0];
        for(string i:t)ans+=i;

        return ans;
    }
};
```

https://leetcode.com/problems/edit-distance/

```
class Solution {
public:
    int minDistance(string s1, string s2) {
        int n=s1.length(),m=s2.length();

        vector<vector<int>> dp(n+1,vector<int>(m+1,0));

        for(int i=0;i<=n;i++) dp[i][0]=i;
        for(int j=0;j<=m;j++) dp[0][j]=j;
        for(int i=1;i<=n;i++){
            for(int j=1;j<=m;j++){
                if(s1[i-1]!=s2[j-1]){
                    dp[i][j] = 1 + min(dp[i-1][j-1],min(dp[i]
                }
                else{
                    dp[i][j]=dp[i-1][j-1];
                }
            }
        }
        return dp[n][m];
    }
};
```