Instructions: Please read carefully

- Please rename this file as only your ID number **(e.g. 18-*****-1.doc or 18-*****-1.pdf).**
- Submit the file within the given time in the link named Lab Task-6 in portal**.** **If you cannot complete the full task, do not worry. Just upload what you have completed.**

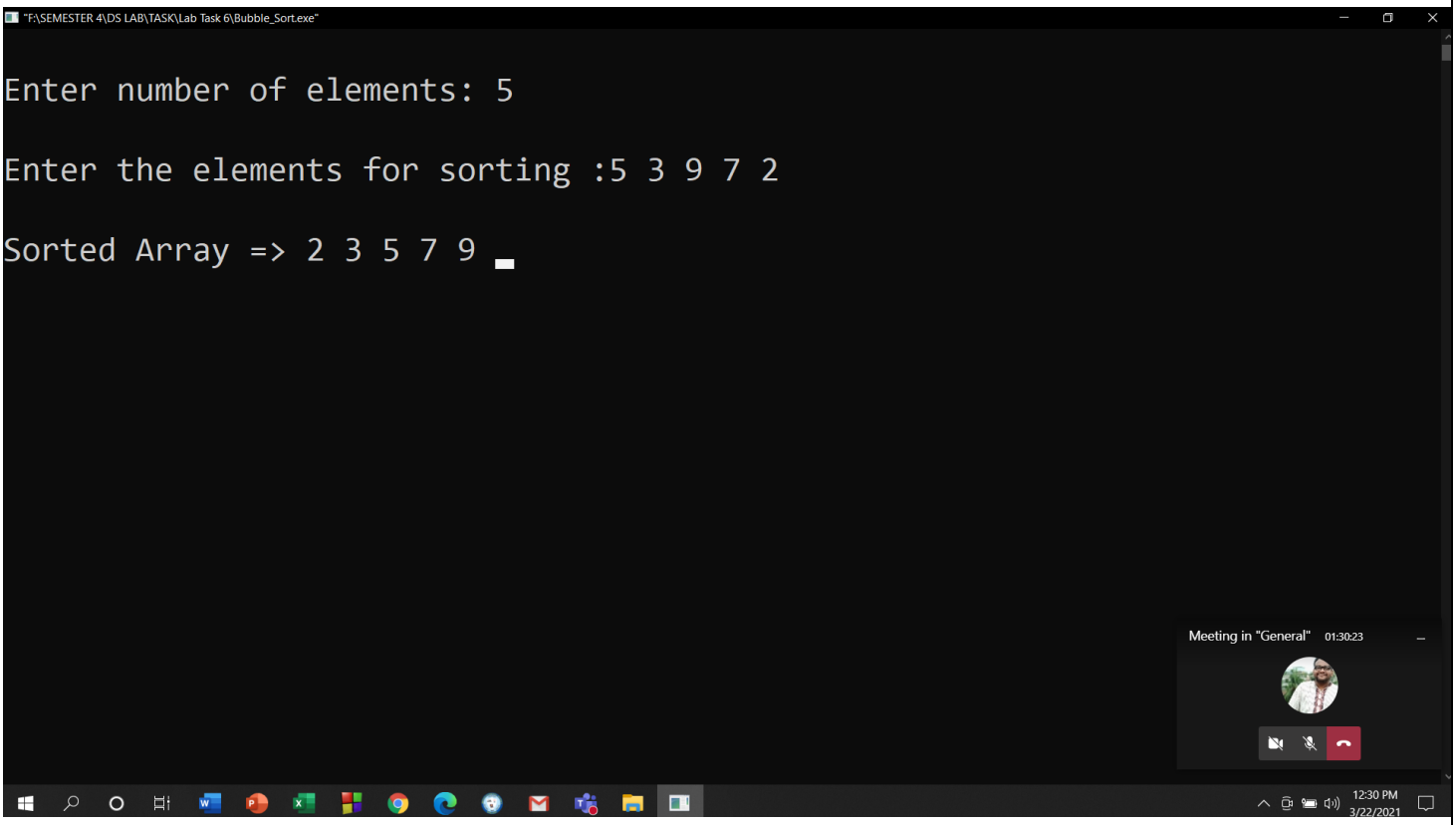
1. Write a C++ code to implement Bubble Sort

Your code here:

```
#include<iostream>
#include<conio.h>
using namespace std;

void swap(int arr[], int i, int j)
{
  int temp = arr[i];
  arr[i] = arr[j];
  arr[j] = temp;
}

void BubbleSort(int arr[], int n)
{

  bool swapped = false;
  do {
    swapped = false;
    int i,j;
for (i=0;i<n-1;i++)
for (j=0;j<n-1-i;j++)
    if( arr[j] > arr[j+1] )
     {
       swap( arr, j, (j+1) );
       swapped = true;
     }
  } while(swapped);
}

void printall(int arr[], int n)
{
 for(int i =0; i < n; i++)
    cout << arr[i] << " ";
}

int main()
{
  int n;
  cout << "\nEnter number of elements: " ;
  cin>> n;

  int arr[n];
 cout<<"\nEnter the elements for sorting :";
 for(int i=0; i < n ; i++)
    cin >> arr[i];
```

```
  BubbleSort(arr,n);
  cout<<"\nSorted Array => ";
  printall(arr,n);
  getch();
  return 0;
}
```

Your whole Screenshot here: (Console Output):



2. Write a C++ Program for Binary Search Implementation

Your code here:

```
#include<iostream>
#include<conio.h>
using namespace std;

void swap(int arr[], int i, int j)
{
  int temp = arr[i];
  arr[i] = arr[j];
  arr[j] = temp;
}

void BubbleSort(int arr[], int n)
{
  bool swapped = false;
  do {
    swapped = false;
    int i,j;
    for (i=0;i<n-1;i++)
```

```
    for (j=0;j<n-1-i;j++)
      if( arr[j] > arr[j+1] )
       {
         swap( arr, j, (j+1) );
         swapped = true;
       }
  } while(swapped);
}

void printArray(int a[], int n)
{
    cout<<"\nSorted Array => ";
   for(int i=0; i<n; i++)
   {
      cout<<a[i]<<" ";
   }
   cout<<endl;
}

int binarySearch (int a[], int n, int val){
   int first = 0, last = n-1, pos = -1, mid;

   while(first<=last){

         mid = (first+last)/2;
      if(a[mid]==val)
      {
         pos=mid+1;
           return pos;
      }

      else if(a[mid]>val)
      {
         last=mid-1;

      }
      else if(a[mid]<val)
      {
         first=mid+1;

      }

   }

   return pos;
}

int main()
{
      int n;
      cout<<"\nEnter array size: ";
      cin>>n;
```

```
    int arr[n];
   cout<<"\nEnter the elements In the Array :";
   for(int i=0; i < n ; i++)
  cin >> arr[i];

    BubbleSort(arr,n);

     printArray(arr,n);
     int value;
     cout<<"\nEnter a value to search: ";
     cin>>value;
     int index = binarySearch(arr,n, value);
     if (index==-1){
       cout<<"\nNot Found"<<endl;
     }
     else
     {
        cout<<"\n *FOUND!*"<<endl;
        cout<<"\n   Position: "<<index<< endl;

     }
  getch();
}
```

Your whole Screenshot here: (Console Output):