

Problem Solving Phase-----

1- Finding third Largest Elements in the array----

Code:-

```
#include<iostream>
```

```
using namespace std;
```

```
int sortingElements(int *arr, int n)
```

```
{
```

```
    int i, j;
```

```
    for(i = 0; i<n; i++)
```

```
    {
```

```
        for(j = 1; j <= n-i-1; j++) // everyTime leaving the  
last elements as it becomes the heighest and located  
into the right place
```

```
        {
```

```
            if(arr[j] > arr[j+1])
```

```
            {
```

```
                int temp;
```

```
                temp = arr[j];
```

```
                arr[j] = arr[j+1];
```

```
                arr[j+1] = temp;
```

```
            }
```

```
        }
```

```

    }
}
int thirdLargest(int *arr, int n){

    if(n < 3)
    {
        cout << "Array has less than 3 elements." << endl;
        return -1; // Return a special value to indicate an
error
    }

    // Sort the elements
    sortingElements(arr, n);

    // The third largest element is at index n - 3 (0-based
index)
    return arr[n - 3];
}

int main()
{
    int n;
    cout<<"Enter the size of the array"<<endl;
    cin>>n;

```

```

int arr[n];

cout<<"Enter the Array's elements"<<endl;
for(int i = 0; i<n; i++){
    cin>>arr[i];
}

int result = thirdLargest(arr,n);
if(result == -1)
{
    cout<<"Empty "<<endl;
}

else{
    cout<<"Third Largest Elements"<<result;
}

return 0;
}

```

// 1 4 5 3 8 0 9

// after sorting---0 1 3 4 5 8 9

// sorting-----

```
//1 4 3 5 0 8 9-----1
//1 3 4 0 5 8 9-----2
//1 3 0 4 5 8 9-----3
//1 0 3 4 5 8 9-----4
//0 1 3 4 5 8 9-----5
```

Output:-

```
Enter the size of the array
6
Enter the Array's elements
5 7 9 0 1 8
Third Largest Elements7
-----
Process exited after 24.36 seconds with return value 0
Press any key to continue . . .
```