**Day – 39 of the #101days of coding Challenge-----**

**Ouestion:-** Write a C++ program to sort a given unsorted array of integers, in wave form.  
Note: An array is in wave form when array[0] >= array[1] <= array[2] >= array[3] <= array[4] >= …………

Solution formet—

Original array: 4 5 9 12 9 22 45 7

Wave form of the said array: 5 4 9 7 12 9 45 22

Code:-

#include<iostream>

using namespace std;

void swap(int \*a, int \*b)

{

int temp;

temp = \*a;

\*a = \*b;

\*b = temp;

}

void sorting(int \*arr, int n)

{

int i, j;

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

{

for(j = 0; j<n-i-1; j++)

{

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

{

swap(&arr[j], &arr[j+1]);

}

}

}

}

void waveFormArray(int \*arr, int n)

{

sorting(arr, n);

for(int i = 0; i<n-1; i+=2)

{

swap(&arr[i], &arr[i+1]);

}

}

int main()

{

int n;

cout<<"Enter the size of the array"<<endl;

cin>>n;

int arr[n];

cout<<"Enter the elements of the array"<<endl;

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

{

cin>>arr[i];

}

waveFormArray(arr, n);

cout<<"After the solution"<<endl;

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

{

cout<<arr[i]<<" ";

}

return 0;

}

Output:-

