**Exercise 16: Write a program to implement Bubble Sort**

#include <stdio.h>

void bubbleSort(int arr[], int n)

{

int i, j, temp;

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

{

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

{

// introducing a flag to monitor swapping

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

{

// swap the elements

temp = arr[j];

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

arr[j+1] = temp;

// if swapping happens update flag to 1

// flag = 1;

}

}

// if value of flag is zero after all the iterations of inner loop then break out

}

// print the sorted array

printf("Sorted Array: ");

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

{

printf("%d ", arr[i]);

}

}

int main()

{

int arr[100], i, n, step, temp;

// ask user for number of elements to be sorted

printf("Enter the number of elements to be sorted: ");

scanf("%d", &n);

// input elements if the array

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

{

printf("Enter element no. %d: ", i+1);

scanf("%d", &arr[i]);

}

// call the function bubbleSort

bubbleSort(arr, n);

return 0;

}