**Institute of Computer Technology**

**B. Tech. Computer Science and Engineering**

**Sub: DS**

**Course Code: 2CSE302**

**Practical – 19**

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**Sem - 3**

**Branch: CS**

**Class: A**

**Batch: 32**

**Code:**

*#include* <stdio.h>

void bubbleSort(int *arr*[], int *n*) {

    int i, j, temp;

    int isSorted;

    printf("Initial Array:\n");

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

        printf("%d ", *arr*[i]);

    }

    printf("\n");

*//* **Bubble Sort Algorithm**

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

        isSorted = 1;*//* **Assume array is sorted at the start of this iteration**

        printf("Iteration %d:\n", i + 1);

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

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

*//* **Swap arr[j] and arr[j + 1]**

                temp = *arr*[j];

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

*arr*[j + 1] = temp;

                isSorted = 0;*//* **Array was not sorted**

            }

        }

*//* **Print the array after each iteration**

*for* (j = 0; j < *n*; j++) {

            printf("%d ", *arr*[j]);

        }

        printf("\n");

*//* **If no swaps were made, array is sorted**

*if* (isSorted) {

*break*;

        }

    }

    printf("Final Sorted Array:\n");

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

        printf("%d ", *arr*[i]);

    }

    printf("\n");

}

int main() {

    int truck\_weights[] = {40, 10, 30, 50, 20};

    int n = sizeof(truck\_weights) / sizeof(truck\_weights[0]);

    bubbleSort(truck\_weights, n);

*return* 0;

}

**Output:**

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