

Department of Information Systems and Technologies

CTIS 152 – Data Structures and Algorithms

Spring 2024 - 2025

Lab Guide #10 – Week 6-1

OBJECTIVE : Bubble Sort

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BUBBLE SORT ALGORITHM:

1. Repeat
 2. Initialize sorted 1
 3. Repeat for each pair of adjacent array elements
 4. If the values in a pair are out of order
 - 4.1. Exchange the values
 - 4.2. Set sorted to 0
- as long as the array is not sorted

- Q1.** Write a C program that reads the number of pc sold for several labs from the file “**labs.txt**” into an integer array with a **maximum size of 15** and sorts the number of pcs sold using the Bubble Sort algorithm in **ascending order** and displays them on the screen.

Example Run:

#of pcs in labs

20
24
25
27
30
33
39
48
50

labs.txt

36
35
25
20
30
33
45
27
26

Project Name: LG10_Q1
File Name: Q1.cpp

- Q2.** Write a C program that forms a list of football team names by getting from the user until “stop” is entered. Each football team will be added to the list and the list should be sorted in **descending order** by using the Bubble Sort algorithm. After sorting, the new form of the list will be displayed on the screen. **Assume that NO duplicate value is given.**

Write the following functions; **bubbleSort**, **display**

Project Name: LG10_Q2
File Name: Q2.cpp

Example Run:

Enter a football team name(finish to stop): Besiktas
Enter a football team name(finish to stop): Samsunspor
Enter a football team name(finish to stop): Real Madrid
Enter a football team name(finish to stop): Barcelona
Enter a football team name(finish to stop): Liverpool
Enter a football team name(finish to stop): Arsenal
Enter a football team name(finish to stop): Bayern Munich
Enter a football team name(finish to stop): Bayern Leverkusen
Enter a football team name(finish to stop): finish

Football team list

1) Samsunspor
2) Real Madrid
3) Liverpool
4) Besiktas
5) Bayern Munich
6) Bayern Leverkusen
7) Barcelona
8) Arsenal