

Assignment #4

*Problem Solving and Programming in C++
Department of Computer Science
Old Dominion University*

Objectives:

The main objective of this assignment is checking the student's ability of implementing membership functions. Please note that this assignment is split into two parts (*Part-A* and *Part-B*)

Part-A (50 marks):

Description: In this assignment, we will revisit **Assignment #1** – which required you to create simple hospital management system. This portion of the assignment (*Part-A*) is an extension of **Assignment #1**, but with more focus on the membership functions. You will need to add a menu item (*Sorting*) and implement a new member function that takes care of its respective selection. The new menu item sorts (*earliest first*) the Hospital Personnel based on the admission date (*AdmitDate*).

You must use a member function of the corresponding *struct* to perform the comparison. You must use constructor(s) to initialize all data variables with default values at the beginning of the program.

Submission notes:

- Zip all files from your project, especially the *.cpp*, *.cbp* and *.h* and name it as “*Assg4A_cslogin*”, where the *cslogin* is your login ID for the computers at the Department of Computer Science at ODU.
- Submit the zipped file in the respective Blackboard link.

Part-B (50 marks):

Description: Your task for this portion of the assignment is to choose one of these member functions which you used in **part-A** of this assignment to perform the comparison and make it a non-

member of the `struct`. You will need to make the appropriate changes accordingly. Your program should also compile and run. The user of the program should not notice any difference when running the program with any of your implementations for *Part-A* and *Part-B* of this assignment.

Submission notes:

- Zip all files from your project, especially the `.cpp`, `.cbp` and `.h` and name it as “Assg4_cslogin”, where the `cslogin` is your login ID for the computers at the Department of Computer Science at ODU.
- Submit the zipped file to the respective Blackboard link.

Sample output:

Sort based on AdmitDate:

```
Press 0 to print all Hospital Personnel
Press 1 to print only Patients
Press 2 to print only Doctors
Press 3 to print only Nurse Practitioners
Press 4 to print only Admitted Patients
Press 5 to print only non-Admitted Patients
Press 6 to print all Personnel sort based on admitDate
Press 7 to exit: 6

*****
*****
0  Hans      Zimmer    000000005    PT      N      11:09:2015
1  Bruno     Coulais   000000001    PT      N      08:04:2015
2  Danny     Elfman     000000002    PT      N      02:03:2015
3  Craig     Armstrong 000000007    PT      Y      06:11:2014    06:15:2014
4  Michael   Giachino   000000008    PT      Y      09:11:2013    10:11:2013
5  Ennio     Morricone  000000009    PT      Y      09:11:2012    09:13:2012
6  Alexandre Desplat  000000000    MD      Mondays-Wednesdays-Fridays
7  Rachel    Portman    000000006    MD      Tuesdays-Thursdays-Fridays
8  Yann      Tiersen   000000003    NP      Mondays-Wednesdays-Fridays
9  Clint     Mansell    000000004    NP      Fridays-Saturdays-Sundays
*****
*****
```