CS 3305: Data Structures

Assignment 10 - Graphs Check D2L for Due Dates (100 points total )

GENERAL SUBMISSION REQUIREMENTS

Upload all files individually as specified, not as zip files, to Assignments in D2L. Do not email files.

Make sure your program compiles, runs and produces the correct output.

Ensure you have the correct file name(s), and author header, as specified in the Assignment.

Always use meaningful labels for prompts, inputs, and outputs.

Always use comments, indentation and whitespace as shown in examples.

**Note:** Never hard-code test data in the test program, unless explicitly stated in the assignment. Always allow the user to enter the test data using a menu option.

**Assignment 10 – PART 1 DFS \_\_\_\_\_\_\_\_\_\_\_\_\_ (100 points) :**

There is only one Part to this assignment, Programming Exercise 28.3 from the Liang textbook, end of the Chapter Programming Exercises, re-printed below.

*Implement Depth First Search (DFS) using a stack. The depth-first search (DFS) algorithm described in Listing 28.8 uses recursion. Design a new algorithm without using recursion. First, describe it using pseudocode and copy that pseudocode into the assignment submittal. State the pseudocode as a separate viewable listing. Implement it by defining a new class named UnweightedGraphNonrecursiveDFS that extends UnweightedGraph (shown in Listing 28.4) and overrides the [Depth First Search] DFS method. In addition, use your pseudocode as comments in your implementation.*

NOTE: when you review AbstractGraph.java Listing 28.3 you will notice that there are two DFS methods (page 1031). You need to override the method dfs(int v), (line 164, page 1031) not the other one with the longer list of parameters.

Do not forget to include author header in each submitted file as shown, no header, no points!

// Name: <your name>  
// Class: CS 3305/ put your section number after the /  
// Term: Semester Year  
// Instructor: Sharon Perry  
// Assignment: 10-Part-1-DFS

First, capture a **READABLE** screenshot(s) of your program output and paste into your document. Screenshots ***should not be an entire desktop*** – use some type of snipping tool. After your output screenshots, copy and paste the pseudo code, AND then the source code for your program into the word/pdf doc. Save doc as a file named LastName-A10-Part-1-DFS.docx or .pdf. Last step is to upload word/pdf and .java files to D2L.

**SUBMIT YOUR OWN CODE – Code copied from the internet will receive a score of zero.**

**MAKE SURE YOUR CODE HAS COMMENTS !** We are getting submissions without comments in the code. No comments = ( -30 ) points *per Part of the assignment*

Do not submit zip files.

**Late penalties of 10 % per day are in effect for this assignment.**