

Algorithms and data structures

Labwork 2

After each labwork session:

- You will have one week (or 7 days) to complete the remaining exercises and upload your files to the “Labwork X” assignment in Google Classroom.
- Compress all code source files in a zip file and rename it as FULLNAME-ID-Lab#no.zip (e.g NguyenVanA-BI10-070-Lab1.zip). Save your files according to the exercise number i.e Ex1.cpp, Ex2.c, etc. Incorrect filenames will result in no score for the respective exercises.
- Only code source files (.c or .cpp) should be in the zip files. Other files (.exe, .o) MUST be removed from the zip file.
- - Copy/Paste from any source is not tolerated. Penalty will be applied for late submissions.

NOTE: You must follow the guide. Incorrect zip file names, zip files containing other files (.exe), and copy/paste lead to heavy penalties.

Exercise 1:

Write a pseudocode and implement a program in C to swap the first and last digits of a positive integer.

Exercise 2:

Complete this given function void findMax(int *max, int a), which assigns a value a to max if $a > \text{max}$.

Exercise 3:

Write a structure to represent complex numbers and complete operators: add and multiply.

Exercise 4:

Write a pseudo-code by commenting in the file then implement a program in to enter a natural number n and verify whether n is sphenic. Calculate the complexity of your program.

Note: A sphenic number is a product of $p*q*r$ where p, q, and r are three distinct prime numbers. Example: $30 = 2 * 3 * 5$; $42 = 2*3*7$; $66 = 2*3*11$