Function and Structure

CSC10012 - Fundamentals of Programming

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Prepare your submission

1. **For multiple-choice and essay questions**: Present your work to the PDF file whose name is ⟨StudentID⟩.pdf, where StudentID is your student number. The following guide you how to treat with different types of questions
   - Single-choice questions: Each choice is indicated by the circle ◯. Pick the most correct choice and explain for every other choice (i.e., why you did not choose it)
   - Multiple-choice questions: Each choice is indicated by the square ☐ Pick one or many correct choices and explain for every other choice
   - Essay questions: Give a comprehensive answer that covers all aspects of the problem
2. **For C/C++ programming questions**: Present your source codes in C/C++. Do not use any additional libraries/open sources without permission
   - Prepare a separate folder for each question. Name the folder as ⟨StudentID_⟩⟨i⟩ where StudentID is your student number and i is the question index. For example, 24120001_1, 24120001_2, etc.
   - Put all corresponding files (i.e., files of extensions *.cpp, *.h, and data files, etc.) to each folder. Do not include the intermediate files generated by the Visual Studio compiler. Do not include the execution files since they are easily affected by viruses.
   - Programming questions sometimes require brief explanation. In those cases, present your arguments to the report file described above.
3. Solutions for multiple-choice and essay questions will be provided after the submission deadlines, while for programming questions, solutions can be alternatively algorithms or C/C++ source codes.
4. Assignment will have too many questions. Don't worry about this. Please complete as many questions as you can.
5. Students contact TA through Moodle forum or email (Mr. Le Nhut Nam: lnnam@fit...).

1 Programming questions (10pts)

2.1 Declare a structure to represent the real part and imaginary part of a complex number.

1. Write a function to receive two complex numbers and calculate their sum.
2. Write a function to receive two complex numbers and calculate their multiplication.

3. Write a function to calculate complex conjugate, absolute value and argument of an input complex number.

2.2 Declare a structure to represent the numerator and denominator of a fraction.

1. Write a function to receive two fractions and calculate the subtraction/addition of these two fractions.
2. Write a function to receive two fractions and calculate the multiplication/division of these two fractions.

Note that the resulting fraction must be minimal.

2.3 Declare a structure to represent a univariate polynomial, in which each term is represented by its coefficient and exponent. Write a function to receive two polynomials and calculate the addition of these two polynomials.