DATA STRUCTURES AND ALGORITHMS using JAVA

Course Introduction

Objectives

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- Course description
- Text book(s) & Reference Resourses
- Learning Tools
- Requirements of the course
- Grading policy
- Academic policy

Instructor introduction

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Course description

- This course introduces the **fundamental** concepts of **data structures** and the **algorithms** that proceed from them. Topics include the basics of **algorithmic analysis**, fundamental **data structures** (including **stacks, queues, linked lists, hash tables, trees**), recursion, and some important applications of these data structures and algorithms.

- Such data structures and algorithms as being implemented in Python are also given in this course.

Textbook(s) & Reference Recourses

- 1) **Textbook**
  - Michaelt T. Goodrich, Roberto Tamassia, Michael H. Goldwasser: Data Structures and Algorithms in Java, 6th Edition, 2014 (ebook)
- 2) Reference books:

  - Introduction to Algorithms, 3rd Edition (The MIT Press) 3rd Edition

  - Data Structures and Algorithms in Java
- 3) Slides
- 4) Exercises
- 5) Example Code

Learning Tools

- – JDK 15.0.1
- – The Java Tutorials
- – IntelliJ IDEA

Requirements of the course

- Following lessons in classrooms

- Reading textbooks at home

- Completing assignments and practices in time

- Completing and submitting assignments in time

- Discussing actively with your team members and in classrooms

- Presenting your presentations in classroom

Grading policy

- **On-going assessment:**
  - 2 Assignments: 25%
  - 2 Quiz tests: 10%
  - 5 Practices: 15%
- **Practical and Final Exams:**
  - 1 Final Exam (FE):   50%
- **Completion Criteria:**
  1) Every on-going assessment (average) component > 0
  3) Average Score >= 5

DongA University Academic policy

Cheating, plagiarism and breach of copyright are serious offenses under this Policy.

- Cheating
  - Cheating during a test or exam is construed as talking, peeking at another student's paper or any other clandestine method of transmitting information.

- Plagiarism
  - Plagiarism is using the work of others without citing it; that is, holding the work of others out as your own work.

- Breach of Copyright
  - If you photocopy a textbook without the copyright holder's permission, you violate copyright law.

Assignments submission guide

1. Create the folder with a name like

   ID_Name, e.g. 01245_HungNV   (1)

   to contain your assignment.

2. Compress the whole folder (1) with the same name and submit to lms.

OOP notion conventions

- Class names always start with uppercase character.
- Variable names and function names always start with the lowercase character.
- If a name consists of many words, from second words, start all words by uppercase character.

examples for class names:

Rectangle, SecondDegreeEquation

examples for variable and function names:

sideOfRectangle, setDataToSafety