OOP244 Lesson Outline: Week 2 Dr. Peter Liu

A. Concepts

1. dynamic memory allocation

a) static array

b) benefit

c) three basic programming steps

2. use cases

a) memory allocation for one structure

b) memory allocation for an array of structures

3. C++ reference type

a) passing by reference

4. the keyword const

5. Linux debugging tool: valgrind

B. Video Clips

Part 1: Dynamic Memory Allocation [15 minutes]

Part 2: An Array of Structures [13 minutes]

Part 3: Reference Parameters [10 minutes]

Part 4: Valgrind [13 minutes]

<https://ict.senecacollege.ca//~peter.liu/onlineF2020/oop244/OOP244Week2_Part1_DynmaicMem.mp4>

<https://ict.senecacollege.ca//~peter.liu/onlineF2020/oop244/OOP244Week2_Part2_Struct2.mp4>

<https://ict.senecacollege.ca//~peter.liu/onlineF2020/oop244/OOP244Week2_Part3_Ref.mp4>

<https://ict.senecacollege.ca//~peter.liu/onlineF2020/oop244/OOP244Week2_Part4_Valgrind.mp4>

C. Code Examples (matrix server)

dynamic\_memory.cpp, dynamic\_mem\_struct.cpp, references.cpp

sample3\_errors.cpp, sample4\_errors.cpp

D. Video Recording of the Lecture Hours (available on Blackboard)

E. Course Notes

<https://ict.senecacollege.ca/~oop244/pages/content/rudim.html>

<https://ict.senecacollege.ca/~oop244/pages/content/dynam.html>

<https://valgrind.org/docs/manual/quick-start.html#quick-start.intro>