2023 INF1511 Unit 6 Visual Programming I

Classes

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for INF1511
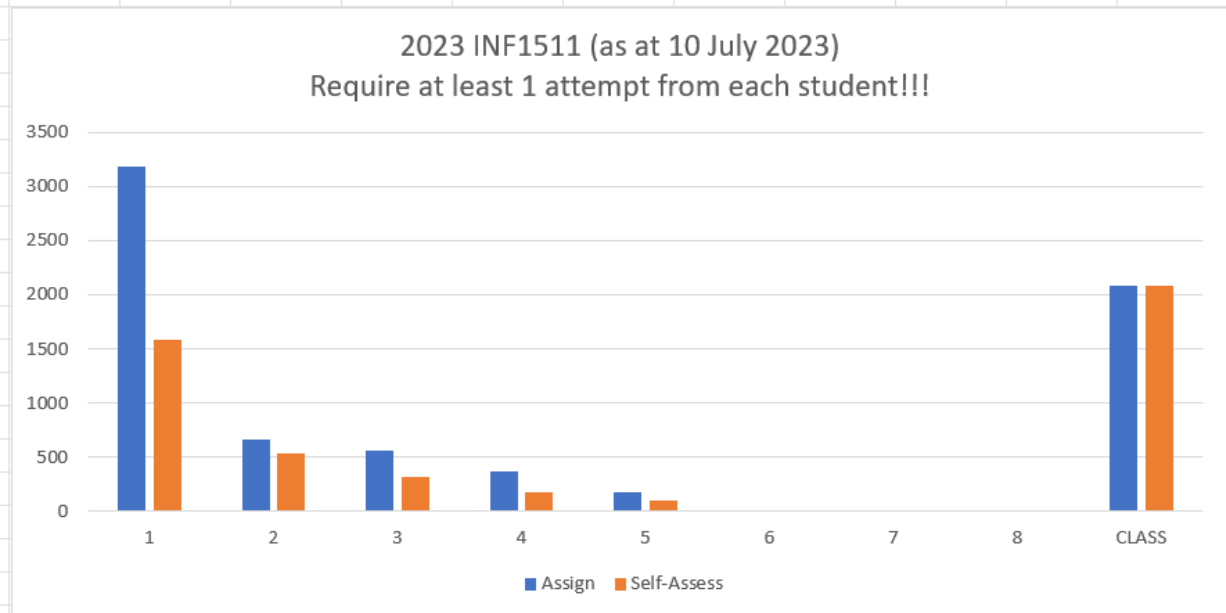
Define tomorrow.

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NEWS!

UNIT	Assign	Self-Assess
1	3182	1578
2	666	530
3	559	316
4	366	179
5	179	94
6	14	15
7	0	13
8	0	0
CLASS	2077	2077

2023 INF1511 (as at 10 July 2023)
Require at least 1 attempt from each student!!!

Assumptions

- Installed Jupyter Notebook.
- Done the theory self-assessments for Units 1-5
- Watched all the recordings for Units 1-5.

Overview Unit 6

- The theory of classes in programming.
- The practical application (and demonstration) of classes in programming.
- The assessment of learning in this unit.

Programming elements

- Literals - _____
- Variables - _____
- Keywords (30 in Python … and else elif exec …)
- Comments #
- A keyword is IF and ELIF
- A keyword is FOR
- A keyword is WHILE
- Functions are declared! The keyword is ……
- CLASS?

Theory – What are classes in programming?

- Classes are ….
- A system. There is always input, processing and output.
- A ==function== has input, processing and output.
- A ==class== has attributes and functions!

Class – OO and re-use of code

- Define a class.
- A template/blueprint – DATA and OPERATIONS.
- Use the class attributes – variables (data members) and methods (member functions).
- Define the functions in a class.
- From classes – create instances – objects.
- Classes can be independent or inherit (from a base class).

Class

- Access the class variables in <u>instance</u> methods.
- Create a <u>class instance</u>.
- <u>Initialize</u> a class instance.
- Class and Static <u>methods</u>.

More Class

- Inheritance - single, multi-level and multiple.
- Control specifiers.
- Method overriding.
- Operator overloading.
- Polymorphism.
- Use of properties and descriptors.

Assessment for Unit 6

- **Theory MCQ quiz is** available. Available until 9 October 2023.

- **Programming activities** for this unit on Jupyter Notebook page. Available. Practise! Use this to complete Assignment 6.

- **Practical MCQ quiz** (Assignment 6) available. One attempt. Available until 9 October 2023.

Practical application

- Demonstrate the syntax and use of classes
- Using ANACONDA programming environment.