Week 5 - Overview

This week we get our start with algorithm analysis. As we build programs and start to make comparisons, we need to understand how the computer's resources are utilized. Readability becomes important as well, as demonstrated in the examples provided in the video overview.

Objectives

During this week, you will:

- State the importance of algorithm analysis.
- Defend the role of efficiency in relation to space requirements and execution time in programming.

Readings

You will be responsible for reading the following chapters this week:

- *Data Structures and Algorithms in Python* by Michael Goodrich
  - 3. Algorithm Analysis

Additional pages are available in this module reviewing:

- **Algorithmic Analysis (https://maryville.instructure.com/courses/43640/pages/algorithmic-analysis)**
- **The Big-O Notation (https://maryville.instructure.com/courses/43640/pages/the-big-o-notation)**

- **Lists** (https://maryville.instructure.com/courses/43640/pages/lists) *and* ***The List Data Structure*** *(https://maryville.instructure.com/courses/43640/pages/the-list-data-structure)*
- **Dictionaries** (https://maryville.instructure.com/courses/43640/pages/dictionaries)
- **Do Together - Anagram Analysis** (https://maryville.instructure.com/courses/43640/pages/do-together-anagram-analysis)
- **Searching** (https://maryville.instructure.com/courses/43640/pages/searching) , **Hashing** (https://maryville.instructure.com/courses/43640/pages/hashing) , and **Sorting** (https://maryville.instructure.com/courses/43640/pages/sorting)

Resources

This week highlights resources available through Runestone Interactive. This open education resource provides open source textbooks for computer science and programming content. The materials are licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Licence. You may access the source material using the link below.

- Miller, B. & Ranum, D. (2011). Problem solving *with algorithms and data structures using python* (2nd ed.). Retrieved from **http://interactivepython.org/runestone/static/pythonds/index.html** **(http://interactivepython.org/runestone/static/pythonds/index.html)**