# CSC 148: Introduction to Computer Science

## Week 4

## Evaluating efficiency of implementations

Given multiple implementations of the same interface,

what are different ways we can compare them?

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# Consider another stack implementation

- How about putting the top of the stack at the beginning of the list, instead of the end?
  - What code has to change?
  - Make the changes
  - What docstrings must change to go along with your code changes?
  - What changes would be required to the paranthesis balancing code, to make it work with our new Stack?
  - Which implementation is better?

# Worksheet v2…

# A timing experiment

- A common technique used to gain evidence about the efficiency of some code is to run a timing experiment that simply runs the code and see how long it takes to run

- Such experiments often are repeated multiple times for different sizes of data (in our case, stack sizes)

# Two fundamental questions

- 1. Why do Python lists behave this way?

- 2. How can we talk about running time more precisely, without relying on timing experiments?

# Worksheet Efficiency…