#3 Trees & Sequences

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Trees, as seen by computer scientists
Midterm 1

- Congrats on finishing midterm 1!
- There's still plenty of semester left...
Midterm 1: 14%
Everything else: 86%
What is your ideal number of toes?

27 responses

* Caveat: this isn't a rigorous data analysis, errors might have occurred. Please take a real data science class and support your local organic data scientist. Terms and conditions may apply.
Sample SD = 18.32921166

Mode = 10

Sample Var = 335.96

P-VALUE < 0.05!!!
Sample too small whoops

Sample SD = 18.32921166

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>>> a = [1, 5, 4, [2, 3], 3]
>>> print(a[0], a[-1])
1 3
>>> len(a)
5
>>> 2 in a
False
>>> 4 in a
True
>>> a[3][0]
2
WWPD, Slicing

```python
>>> a = [3, 1, 4, 2, 5, 3]
>>> a[1::2]
[1, 2, 3]
>>> a[:]
[3, 1, 4, 2, 5, 3]
>>> a[4:2]
[]
>>> a[1:-2]
[1, 4, 2]
>>> a[::-1]
[3, 5, 2, 4, 1, 3]
```
List Comprehensions

Return a new list of elements, using some rule

```python
[<expr> for <var> in <sequence> if <filter_expr>]
```
>>> \[i + 1 \textbf{for } i \textbf{ in } [1, 2, 3, 4, 5] \textbf{ if } i \% 2 == 0\] \\
[3, 5] \\
>>> \[i * i - i \textbf{ for } i \textbf{ in } [5, -1, 3, -1, 3] \textbf{ if } i > 2\] \\
[20, 6, 6] \\
>>> [[[y * 2 \textbf{ for } y \textbf{ in } [x, x + 1]] \textbf{ for } x \textbf{ in } [1, 2, 3, 4]] \\
[[[2, 4], [4, 6], [6, 8], [8, 10]]]
Trees
An anatomical perspective

Credit: Based on Prof. DeNero's tree diagram [Fa 16 CS 61A]