Intro to Programming with Python Project Group

Thursdays 3:00pm • Jacob Urick

Grade breakdown:

- Quiz/Attendence 35%
- Homework(3 mini projects) 10% Each
- Final Project 35%

There will be a 5 minute review session at the beggining of each lecture followed by an easy 5 minute review quiz. At the end of class, there will be a small quiz that includes a short survey. These quizzes are graded 70% for completion, 30% for corectness.

Week 1

- Introductions
- What is Python?
- Python 2 vs 3
- Setting up the Python environment
- IDLE
- "Hello World!"

Week 2 -

- Basic syntax, data types
- Reading an API
- Discussion about the nature of computation and compilers.

Week 3

- Inputs and functions. Best practices
- Reading and writing I/O files

Week 4

- Basic control flow, more data types
- Choose Your Own Adventure Competition

Week 5

- Continued control flow and an introduction to Pip
- First mini project due.

Week 6

- More on Pip,
- Intoduction to libraries
- Word guessing challange
- Begin discussing data structures

Week 7

- Data structures in detail: trees, graphs, and lists
- Begin discussion of applications including: Automation of repetitive tasks, IFTTT, machine learning(intro), data mining, twitter bots

Week 8

- Second mini project due
- Continue discussion of applications

Week 9

- Cryptography, blockchain, more machine learning(medical example)

Week 10

- Best practices for software development
- Introduce recursion on trees with examples; word guesser challange via decision trees
- Recursion vs looping

Week 11

- Begin discussion of final project, assign final project 'sketch'
- Third mini project is due
- Principles of object oriented programming vs functional programming
- Voting on the topic for week 12

Week 12

- Final project 'sketch' is due.
- Further topics TBD by the class

Week 13(7 percentage points added to final grade for attending; no graded quiz)

- Discussion of Church's thesis, Universal Approximation Theorem
- Work day for final projects

Week 14(No quiz)

- Final project discussion and debreif.