

What Next?

Python, Java, CSE Courses

Ruth Anderson

UW CSE 160

Autumn 2021

We want your feedback!

- Please fill out evaluations for lecture AND for section
 - The link for lecture is [here](#).

There is more to learn!

- You have come a long way from the first day of class!
 - But there is more to learn!
- Data analysis, data science, and data visualization
- Scaling up:
 - Larger and more complex programs
 - Algorithm selection
 - “Big data”: out-of-memory data, parallel programming, ...
- Ensuring correctness
 - Principled, systematic design, testing, and programming
 - Coding style
- Managing complexity
 - Programming tools: testing, version control, debugging, deployment
 - Graphical User Interfaces (GUIs), user interaction
 - Data structures and algorithms
 - Working in a team

More UW Computer Science Courses!!

You could take any of these now!

- [22wi & 22sp] [CSE 163](#) Intermediate Data Programming
- [every quarter + summer] [CSE 142](#), [143](#), [143x](#) Programming in Java (143x only in fall)
- [22wi & 22sp] [CSE 154](#) Web Programming
- [22sp] [CSE/STAT 416](#) Intro to Machine Learning (requires Stat 311/390)
- [every quarter] [INFO/STAT/CSE 180](#) Intro to Data Science (some Math pre-req)

Require **CSE 143**:

- [every quarter] [CSE 373](#) Data Structures & Algorithms (all year)
- [22sp] [CSE 412](#) Intro to Data Visualization (requires CSE 143 or CSE 163)
- [22wi & 22sp] [CSE 414](#) Databases
- [22wi & 22sp] [CSE 374](#) Intermediate Programming Concepts & Tools

Require **CSE 373**:

- [CSE 410](#) Computer Systems (Operating Systems & Architecture)
- [CSE 413](#) Programming Languages and their Implementation
- [CSE 415](#) Artificial Intelligence
- [CSE 417](#) Algorithms and Complexity



















More Info on UW CSE Courses!!

- Which Course should I take:
 - <https://courses.cs.washington.edu/courses/cse160/21au/which-class/>
- Intro CSE courses:
 - <https://www.cs.washington.edu/academics/ugrad/nonmajor-options/intro-courses>

More Python Resources

- More Python practice:
 - <https://courses.cs.washington.edu/courses/cse160/21au/computing/>
- Runestone – free interactive textbooks:
 - How to Think Like a Computer Scientist
(the “Try” text we [used this quarter](#))
<https://runestone.academy/runestone/books/published/thinkcspy/index.html>
 - Problem Solving with Algorithms and Data Structures using Python
<https://runestone.academy/runestone/static/pythonds/index.html>

Why the Python language?

	Python	Excel	MATLAB	R	C/C++	Java
Readable syntax						
Easy to get started						
Powerful libraries						

Comparison of Python with Java

- Python is better for learning programming
- Python is better for small programs
- Java is better for large programs

Main difference: dynamic vs. static typing

- Dynamic typing (Python): put anything in any variable
- Static typing (Java):
 - Source code states the type of the variable
 - Cannot run code if any assignment might violate the type