

CS 311 - Programming Language Concepts

Programming Assignment #2

Objectives:

Investigation, comparison and critique of features in the programming language **Python**.

Language:

Python is an interpreted, object-oriented programming language developed in 1990 by Guido van Rossum, computer scientist at CWI in Amsterdam and *Monty Python* fan. Python is very portable since Python interpreters are available for most operating system platforms. The latest Python source distribution and Python documentation is available from python.org, at <http://www.python.org/>. Python is enough like languages you are familiar with to make it fairly easy to learn, yet different enough to be interesting to study.

Assignment:

Investigate the following features or constructs as they pertain to Python:

1. interpretation
2. Boolean expressions
3. short circuit evaluation
4. numeric types
5. strings
6. arrays
7. lists
8. tuples
9. slices
10. index range checking
11. dictionaries
12. if statement
13. switch statement
14. for loop
15. while loop
16. indentation to denote code blocks
17. type binding
18. type checking
19. functions
20. one other feature - your choice

For each of the above features you should do the following:

- a. Write a short program or programs to investigate its use. You may combine more than one feature into a single program.
- b. Explain how the feature works in Python and compare it to one or more languages with which you are familiar.
- c. Critique the implementation or use of the feature or construct.

Note: Some of the features above are not included in Python, in which case you should note that they are missing and critique the decision to leave them out.