CPSC 1301, Computer Science I Homework 11

Chapters 16 and 17, *Learning Python*

Readings

Read chapters 16 and 17 in the *Learning Python* book.

Discussion Questions

Answer the discussion questions in writing.

1. What is a *function*?

2. Why do we use functions in computer programs?

3. What is the Python syntax for writing a function?

4. What is the Python syntax for calling a function?

5. How do you return values from a function?

6. What does a function return that does not have a `return` statement?

7. What is a *local variable*? What is the scope of a local variable?

8. What is a *namespace* in Python?

9. How do functions and namespaces interact? Does one influence the other?

10. What happens in a function if you use a variable without assignment it a value?

11. What is Python's *LEGB* rule? Please be specific.

12. What is the *build-in* scope?

13. What happens when we use `global` in a function?

14. What happens when we use `nonlocal` in a function?

15. The book states, "functions should rely on arguments and return values instead of globals ..." We can add to this sage advice by further stating that functions should avoid side effect and work only by returning values. This is a crucially important consideration of software design. Can you think of a very good reason for this?

16. In your own words, what is a *closure*?

17. In your own words, what is a *lambda* expression? In time, you will both see and use many lambda expressions.

18. Review the Test Your Knowledge quizzes at the end of the chapters.