

CPSC 1301, Computer Science I Homework 07

Chapter 09, *Learning Python*

Readings

Read chapter 9 in the *Learning Python* book.

Discussion Questions

Answer the discussion questions in writing.

1. What is a *tuple*?
2. Are tuples mutable or immutable? What is the difference between “mutable” and “immutable?”
3. What does the book mean when the book says, “tuples are best thought of as object reference arrays ...”?
4. Of what significance is the comma character (,) when defining tuples? Especially consider one element tuples.
5. What is the main difference between list slicing operations and tuple slicing operations? This is an important question.
6. What is a *file* when we think of files as programmable objects?
7. How do you open a file for reading?
8. How do you open a file for writing?
9. How do you open a file for *appending*? Not in book.
10. How do you read the entire file into memory all at once?
11. How do you read a file one line at a time?
12. What is JSON? This is not in the book, but it’s an important question and you will be using JSON a lot.
13. What is the difference between the `==` operator and the `is` operator? For what purpose would you use each of them?
14. What does `None` represent?
15. What is the `bool` type? Are you required to use the `bool` type in predicates?
16. In some computer languages, the concept of *type* is fundamental. Therefore, it’s critical to understand what types are and why we have them. We will make a connection between data as the computer sees it, i.e., as ones and zeros (01011100111011100101110011110101), and data as humans see it, i.e., as a number or a piece of text. Consider this question: Why are types important to a computer and why are types important to a human?
17. Review the Test Your Knowledge Quiz at the end of the chapter.