Lesson 2.05: Booleans & Expressions

# Learning Objectives

* Define and identify: evaluating, composing, expressions, True, False
* Describe what a Boolean expression is and what it evaluates to
* Compose Boolean expressions

# Materials/Preparation

* Lab handout
* Read through the handout so that you are familiar with the requirements and can assist students

# Pacing Guide

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| Duration | Description |
| *Day 1* |  |
| 5 Minutes | Welcome, attendance, bell work, announcements |
| 10 Minutes | Lecture |
| 30 Minutes | Interactive Booleans + Simple Lab |
| 10 Minutes | Wrap Up |
| *Day 2* |  |
| 5 Minutes | Welcome, attendance, bell work, announcements |
| 10 Minutes | Lecture |
| 30 Minutes | Lab |
| 10 Minutes | Discussion |

# Instructor’s Notes

1. Lecture
   1. Booleans are data types that are True or False only
   2. Boolean Expressions are expressions that when evaluated become Booleans as well.
      1. Expressions are True if they are not 0 or the Empty List. So in Python 1 is True and 0 is False.
      2. Often operators are used to create Boolean expressions like: >, <,
         1. So what would 3 < 2 evaluate to?
      3. There is also an operator that checks if two things are equal. Since the equal sign is already taken python uses the ==
         1. 1 == 1
         2. “a” == “a”
2. Interactive Section + Simple Lab
   1. Use simple < or > to put laws (like must be greater than 21 to drink)
   2. Set a variable to your own age and print out Can I drink. Can I vote. Can I serve in Military. Am old enough to be president.
   3. Students can work together on this
3. Discuss
   1. Go over an issues with composing the expressions like this
4. Lecture 2
   1. Creating Expressions using And/Or/Not
      1. Can go into logic
5. Lab
   1. Help students with the self composition/ 20 questions
   2. Have some basic examples that students can use
6. Discuss
   1. Logic tables might be a good option if students are moving really fast