Quiz 0 Review Session

with Sophie and Henry!

Content on Quiz 0

- Objects & data types
- Expressions
- Functions
- Memory diagrams

Disclaimer: We haven’t seen the quiz; this review session covers the main topics in the unit.

Data types we've covered

- Data Types
  - `float` (decimal, e.g. `2.0`)
  - `int` (whole number, e.g. `2`)
  - `str` (string of characters, e.g. `"Hello"`)
  - `bool` (evaluates to True or False, e.g, `True`)
- Check the type of a value
  - `type()`
- Change the type
  - `str(), float(), int()`

Review: Data Types

Discuss these questions with your neighbor and jot the answers down.

1. What is the difference between `int` and `float`?

2. Is there a difference between the following? What *type* of **literal** is each an example of?
   a. `"True"`
   b. `True`
   c. `TRUE`

3. What role do **types** play for data in Python?

Review: `str` is a *Sequence* Type

Discuss these questions with your neighbor and jot the answers down.

1. What does the `len()` function evaluate to when applied to a `str` value? What will the expression `len("cold")` evaluate to?

2. Is there a difference between `"False"` and `False`? What *type* of **literal** is each an example of?

3. What are the **square brackets** called in the following *expression*? What does the following expression evaluate to? `"The Bear"[4]`

4. Can a string be a number in Python? Explain.

Numerical Operators

Symbol	Operator Name	Example
`**`	Exponentiation	`2 ** 8` equivalent to 2^8
`*`	Multiplication	`10 * 3`
`/`	Division	`7 / 5` result is `1.4`
`//`	Integer Division	`7 // 5` result is `1`
`%`	Remainder “modulo”	`7 % 5` result is `2`
`+`	Addition	`1 + 1`
`-`	Subtraction	`111 - 1`
`-`	Negation	`-(1 + 1)` result is `-2`

Relational Operators

Operator Symbol	Verbalization	`True` Ex.	`False` Ex.
`==`	Is equal to?	`1 == 1`	`1 == 2`
`!=`	Is NOT equal to?	`1 != 2`	`1 != 1`
`>`	Is greater than?	`1 > 0`	`0 > 1`
`>=`	Is at least?	`1 >= 0` or `1 >= 1`	`0 >= 1`
`<`	Is less than?	`0 < 1`	`1 < 0`
`<=`	Is at most?	`0 <= 1` or `1 <= 1`	`1 <= 0`

Order Of Operations

- P ()
- E **
- MD * / %
- AS + -
- Tie? Evaluate *Left to Right*

Practice: Operators and Expressions

Discuss these questions with your neighbor and jot the answers down.

1. What is the result of evaluating `10 % 3`? What about `10 // 3`? `10 ** 3`?

2. Is there an error in the expression, `"CAMP" + 110`? If so, how would you fix it such that the `+` symbol is evaluated to be **concatenation**?

3. What is the evaluation of the expression `10 / 4`? What types are the operands (`10` and `4`), what type does the expression evaluate to?

4. What is the evaluation of the expression `2 - 6 / 3 + 4 * 5`?

Practice! Simplify and Type

- 2 + 4 / 2 * 2

- 220 >= int((“1” + “1” + “0”) * 2)

Simplify: 2 + 4 / 2 * 2

(Reminder: P E M D A S)

What type does
2 + 4 / 2 * 2 evaluate to?

Simplify:

220 >= int((“1” + “1” + “0”) * 2)

Mods Practice! Simplify

- 7 % 2
- 8 % 4
- 7 % 4
- Any even number % 2
- Any odd number % 2