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# **Reading and Practice for Section 5a**

This guide assumes that you have watched section 5a (video lecture segments Lec 5.1, Lec 5.2, Lec 5.3, Lec 5.4) in Courseware.

This corresponds to textbook sections:

- Chapter 4.2: Strings 🗹
- Chapter 6: Tables ☑

In section 5a, we learned a little more about building tables, and we were introduced to text representations in Python, otherwise known as strings. Just like floats and ints that represent numbers, strings are a very powerful data type for text. It's important to understand the different behaviors of strings, ints, floats, and other data types in Python.

Here are the table methods we learned. These will be important later on in the course!

Table.read\_table(filename) create a table with data from a file

Table() create an empty table

Table().with\_columns(name, values, ...) creates a table with an array of values for each column name

tbl.with\_columns(name, values, ...) appends a column name with an array of values to an existing table

tbl.num\_rows returns the number of rows in a table

tbl.num\_columns returns the number of columns in a table

tbl.labels returns a list of column labels of a table

tbl.relabeled(old\_label, new\_label) returns a new table with a changed label column

tbl.drop(col1, col2, ...) returns a table without the dropped columns

Here is some more practice with strings and types.

## Practice for Section 5a

0 points possible (ungraded)

Assume you have run the following statements

```
a = 2
b = '3'
c = '4.5'
d = 10
```

What is the output for each of these code statements? Fill in your exact answer. If your answer is a string, please use SINGLE quotations (i.e. '10'). If the code results in an error message, write Error. Make sure to include quotations if your answer is a string (i.e. '1').

3 ✓ Answer: 3

#### **Explanation**

We assign b to a string with value '3'. If we use the int(...) function on the string '3', it returns an int value with 3.

str(a)

#### **Explanation**

We assign a to an int with value 2. If we use the str(...) function on the int 2, it returns a string value with "2". Make sure to notice how string are represented with single quotations " " or double quotations " ".

int(c)

#### Explanation

We assign c to a string with value '4.5'. If we use the int(...) function on the string '4.5', it returns an error because Python does not know how to convert the period in '4.5' into a int.

a \* b

'33' **✓ Answer:** '33' **or** "33"

#### **Explanation**

We assign a to an int with value 2 and b to a string with value '3'. When we multiply a string by an int, the result is a string repeated the number of times specified by the int. In this case, the result repeats the string '3' 2 times, or '33'.

int(str(d) + b)

103 **✓ Answer:** 103

### **Explanation**

We assign [b] to a string with value ['3'] and [d] to an int with value [10]. To approach this problem, we work from the inside out. The int [d] is converted to a string with value ['10']. We add strings ['10'] and ['3']. When we add strings, we concatenate them together. So in this case [str(d)] + [b] is ['10'] + ['3'] or ['103']. Finally, we take the int value of ['103'], giving us a final result of an int with value [103].

int(str(a) \* c)

Error **Answer:** Error **or** error

#### **Explanation**

We assign a to an int with value 2 and c to a string with value '4.5'. We convert a to a string and then try to multiply two strings together. Multiplying two strings together is not possible and causes Python to throw an error.

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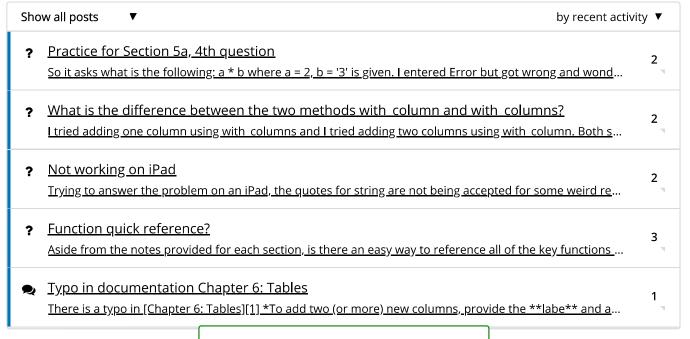
**1** Answers are displayed within the problem

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