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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').

`int(b)`

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)`

'2'

✓ Answer: '2' or "2"

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 strings are represented with single quotations `' '` or double quotations `" "`.

`int(c)`

✓ Answer: Error or error

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`

✓ 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)`

✓ 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)`

✓ 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.


 Answers are displayed within the problem

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<div><div></div><div>Typo in documentation Chapter 6: Tables</div><div>There is a typo in [Chapter 6: Tables][1] *To add two (or more) new columns, provide the <code>**labe**</code> and a...</div></div>	1

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