Data Types PROFESSIONAL & CONTINUING EDUCATION UNIVERSITY of WASHINGTON

Common Data Types

Numeric Data Types

- -Integer, Float
- -Arithmetic operations

Text Data Type

- -String
- -Manipulate the text

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Numeric Data Types Create an integer Name Type Size x = 7Value int 1 x + 3In [3]: x + 3Out[3]: 10 Create a Float x = 7.0 Name Type Size Value 7.0 x + 3.0In [5]: x + 3.0PROFESSIONAL & CONTINUING EDUCATION Out[5]: 10.0

Mixing Numeric Data Types

Add a float, an integer, and a Boolean

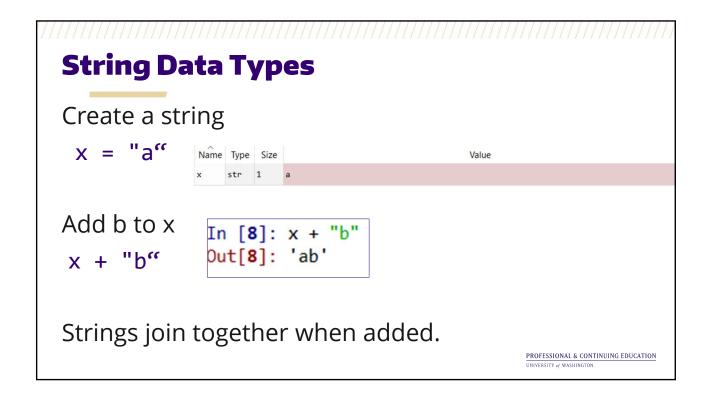
$$7 + 3.0 + True$$

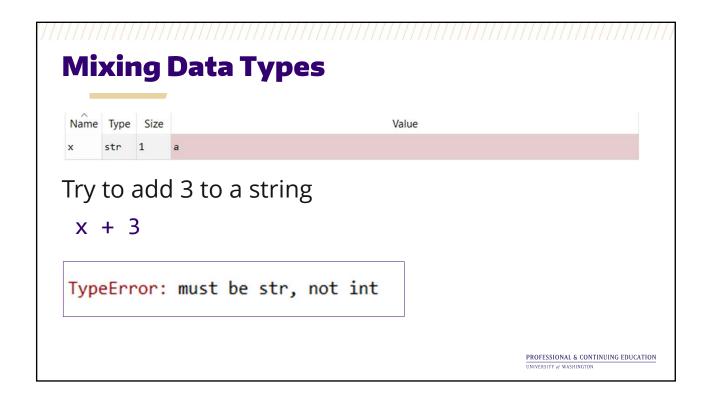
–Boolean True = 1

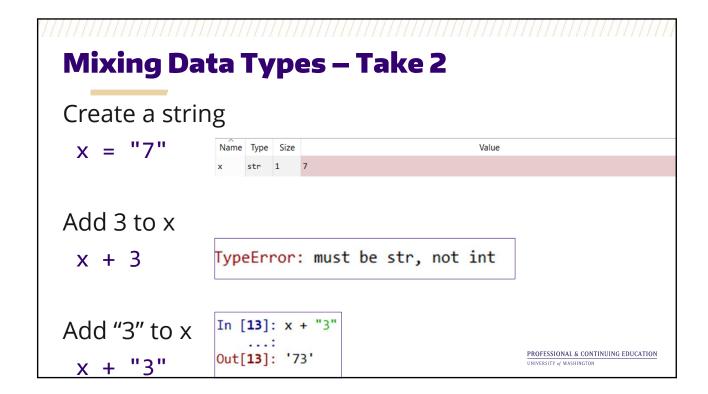
-Boolean False = 0

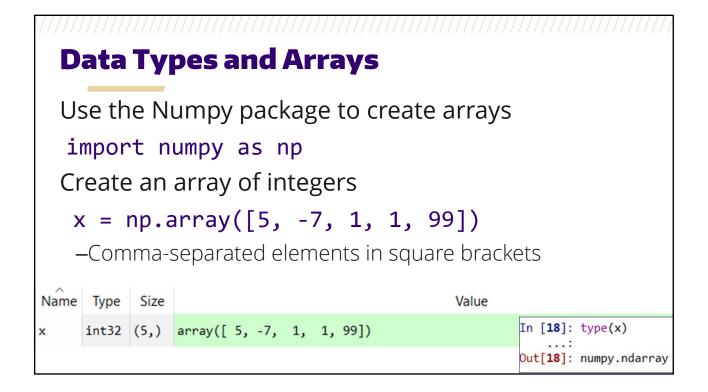
```
In [6]: 7 + 3.0 + True
...:
Out[6]: 11.0
```

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Elements in the array

Find out the data type for the elements in the array

x.dtype.name

int32

-means numeric data, integers.

Add 3 to the array, adds to each element

```
x + 3
array([ 8, -4, 4, 4, 102])
```

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Array of Strings

Create an array of strings

x = np.array(["abc", "", " ", "?", "7"])

```
Name Type Size Value

x str96 (5,) ndarray object of numpy module
```

Str96 means text

Cannot add 3 to a string – no matching types

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Summary

- >Data types are important for what kind of operations can be performed
- >Operator +
 - -Math on numeric data
 - –Joining on text data
- >Check the data type
 - -Type(x)
 - -X.dtype.name on an array

