MATH1401

Fall 2021

Lecture 3

Python

Class Checklist

- **Lab 1 – Due Date** : Tuesday 8/31 – 5 PM
- Graded Questions : 3.1.2, 3.3.1, 3.3.2, 4.1.1, 5.1, 5.1.1
- **Quiz 2** – Tuesday: 8/27 – Covers Chapter 3

By end of class be able to:

- Open the hub
- Edit cells, run cells, and save the assignment
- Turn in the notebook to D2L

Lecture 3 Checklist

Textbook: Chapter 3

- Expressions and Operators
- Names and Assignment
- Call Expressions (Functions)
- Table

Lecture 3 Checklist - Programming

- Be able to use the math operators +,-,*,/, **
- Be able to assign values to a name
- Understand Python only effects code below current line
- Call basic functions like min, max, abs
- Call functions
- Create a simple table, display it, and sort it

Python

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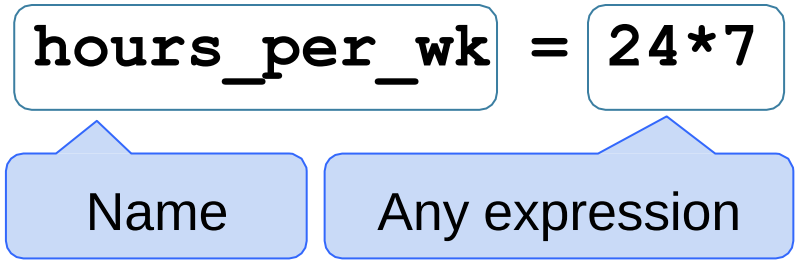
(Demo)

Names

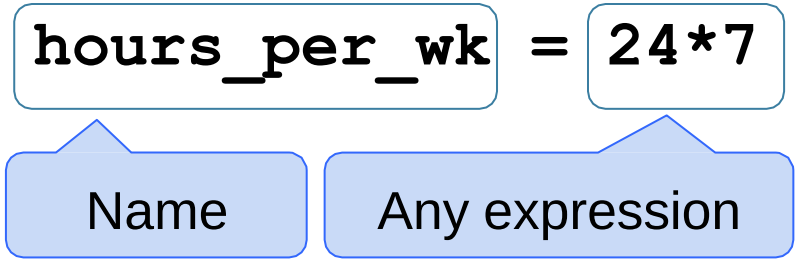
Assignment Statements

```
hours_per_wk = 24*7
```

Assignment Statements

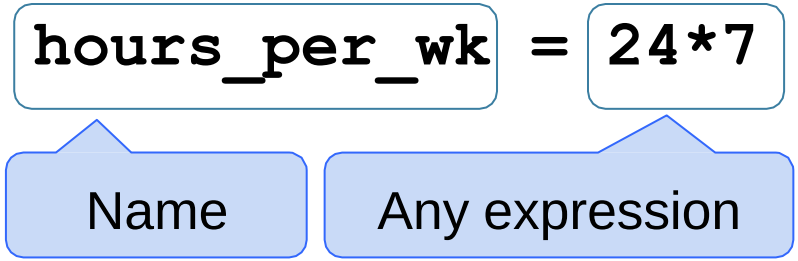


Assignment Statements



- The name is bound to a value (not an equation)

Assignment Statements



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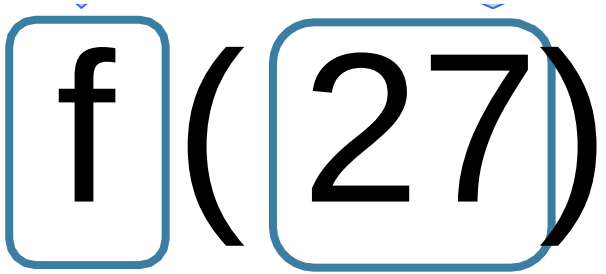
(Demo)

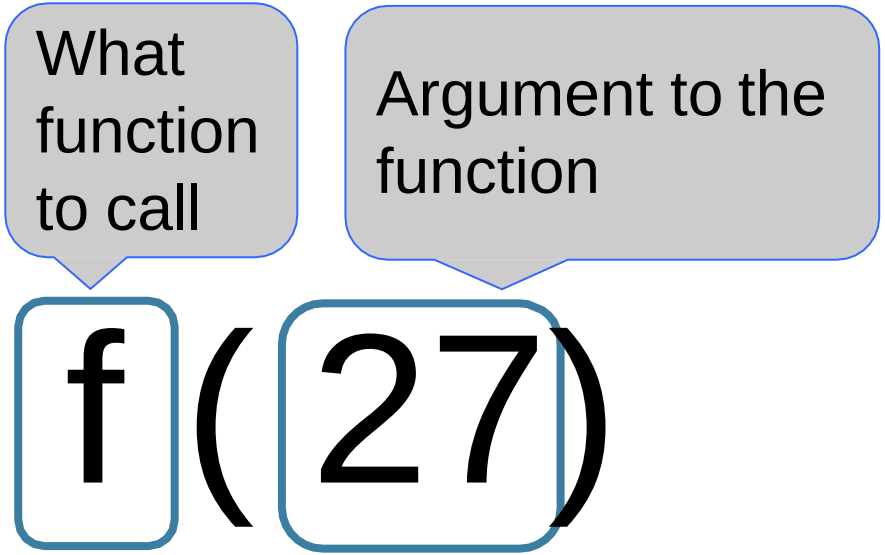
Functions

Anatomy of a Call Expression



"Call f on 27."

Anatomy of a Call Expression



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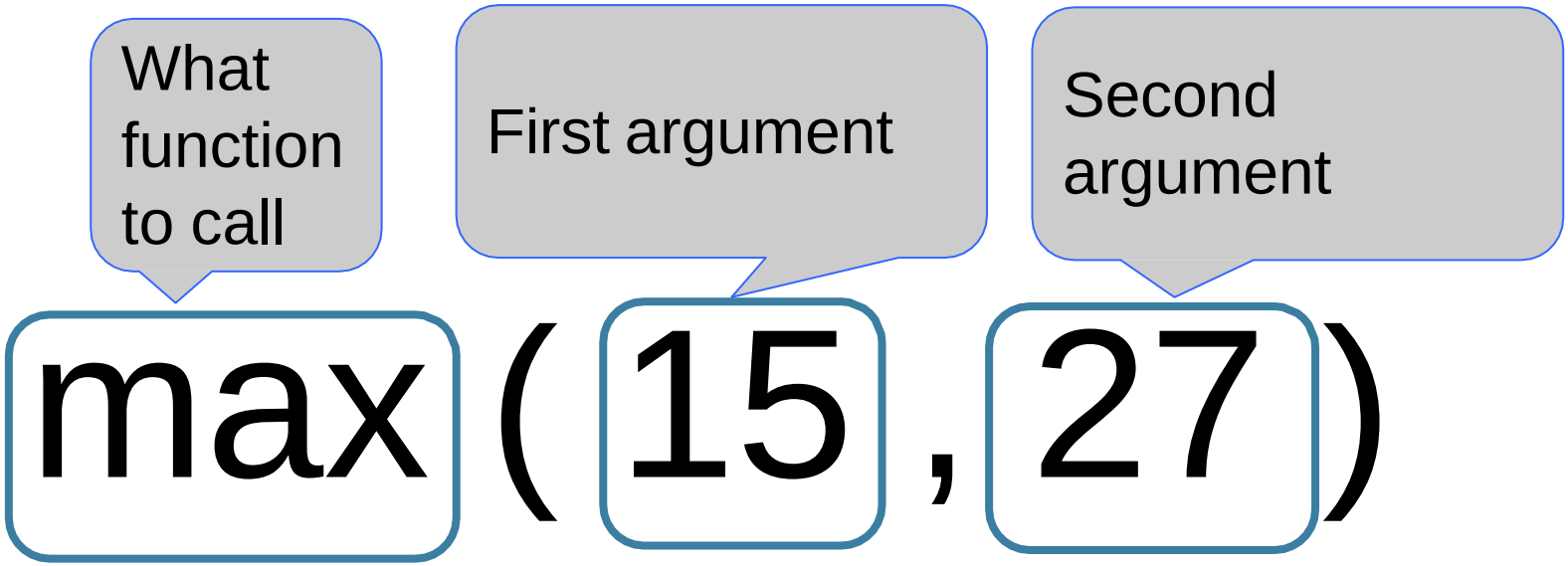

(Demo)

Tables

Table Structure

- A Table is a sequence of labeled columns
- Each row represents one individual
- Data within a column represents one attribute of the individuals

Name	Code	Area (m2)
California	CA	163696
Nevada	NV	110567

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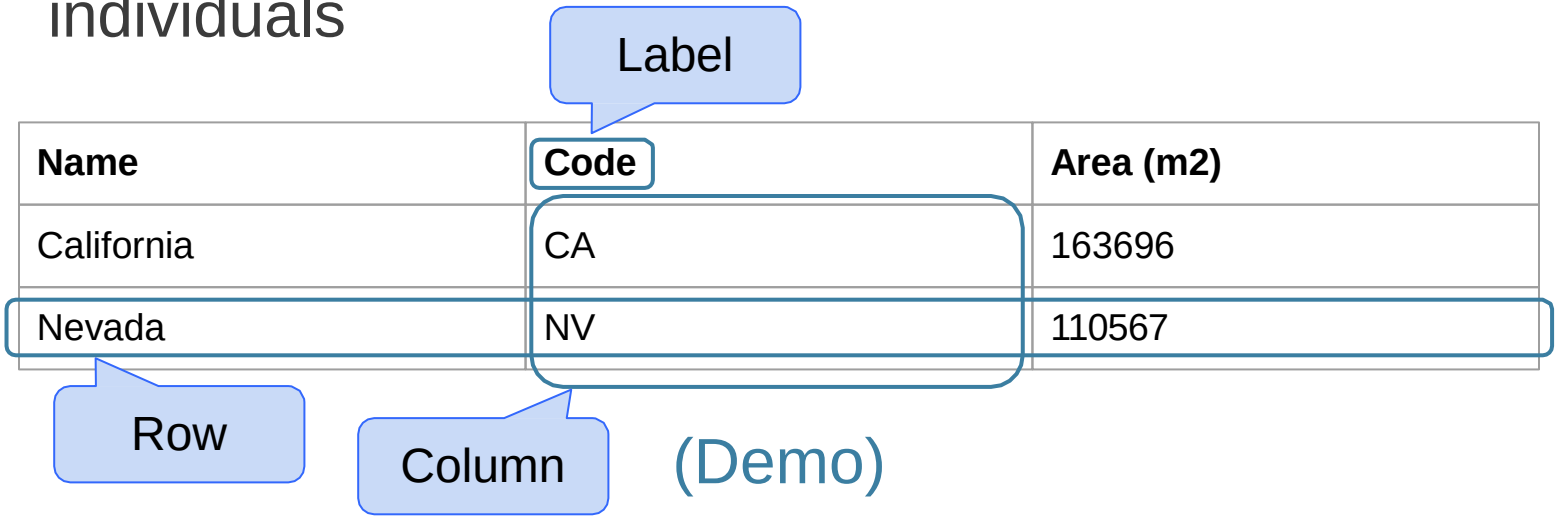

Some Table Operations

- `t.select(label)` - constructs a new table with just the specified columns
- `t.drop(label)` - constructs a new table in which the specified columns are omitted

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- `t.select(label)` - constructs a new table with just the specified columns
- `t.drop(label)` - constructs a new table in which the specified columns are omitted
- `t.sort(label)` - constructs a new table with rows sorted by the specified column
- `t.where(label, condition)` - constructs a new table with just the rows that match the condition

Memorize how to use each function listed here!