

Rock, paper, scissors, lizard, Spock.

Design Problem 2

if nothing else, write `#cleancode`

Agenda

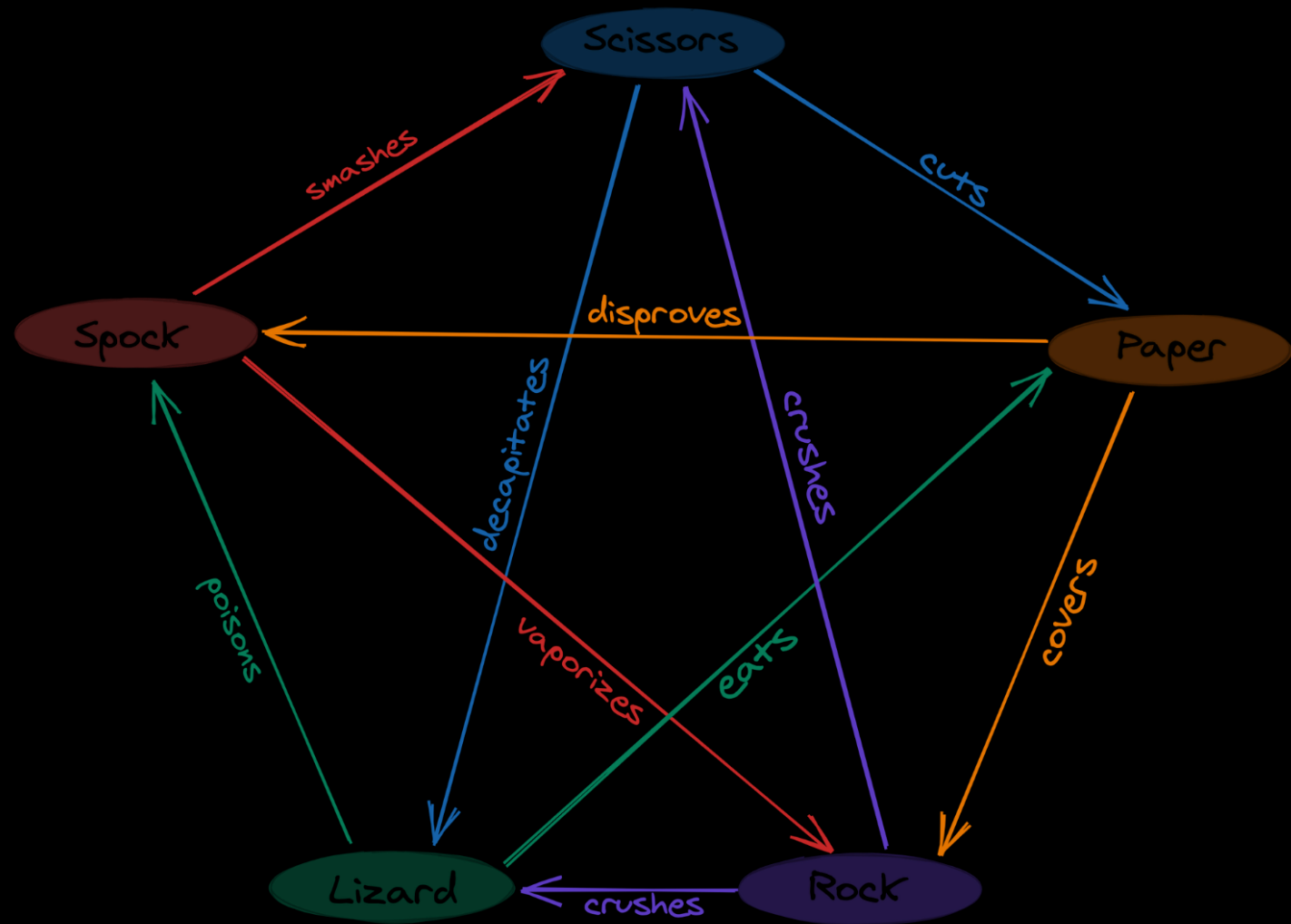
- Problem Background
- Learning Objectives
- Coding

Our problem background starts in a famous
TV show apartment...



Background

- Will rely on conditional statements and imported libraries to create a basic computer game!
- **Goal:** Write a Python program that using conditional statements and user input to play Rock-Paper-Scissors-Lizard-Spock against a computer program with random choice selection.



- Practice using many conditional statements.
- Practice with user input.
- Practice creating custom functions.
- Practice with built-in libraries.



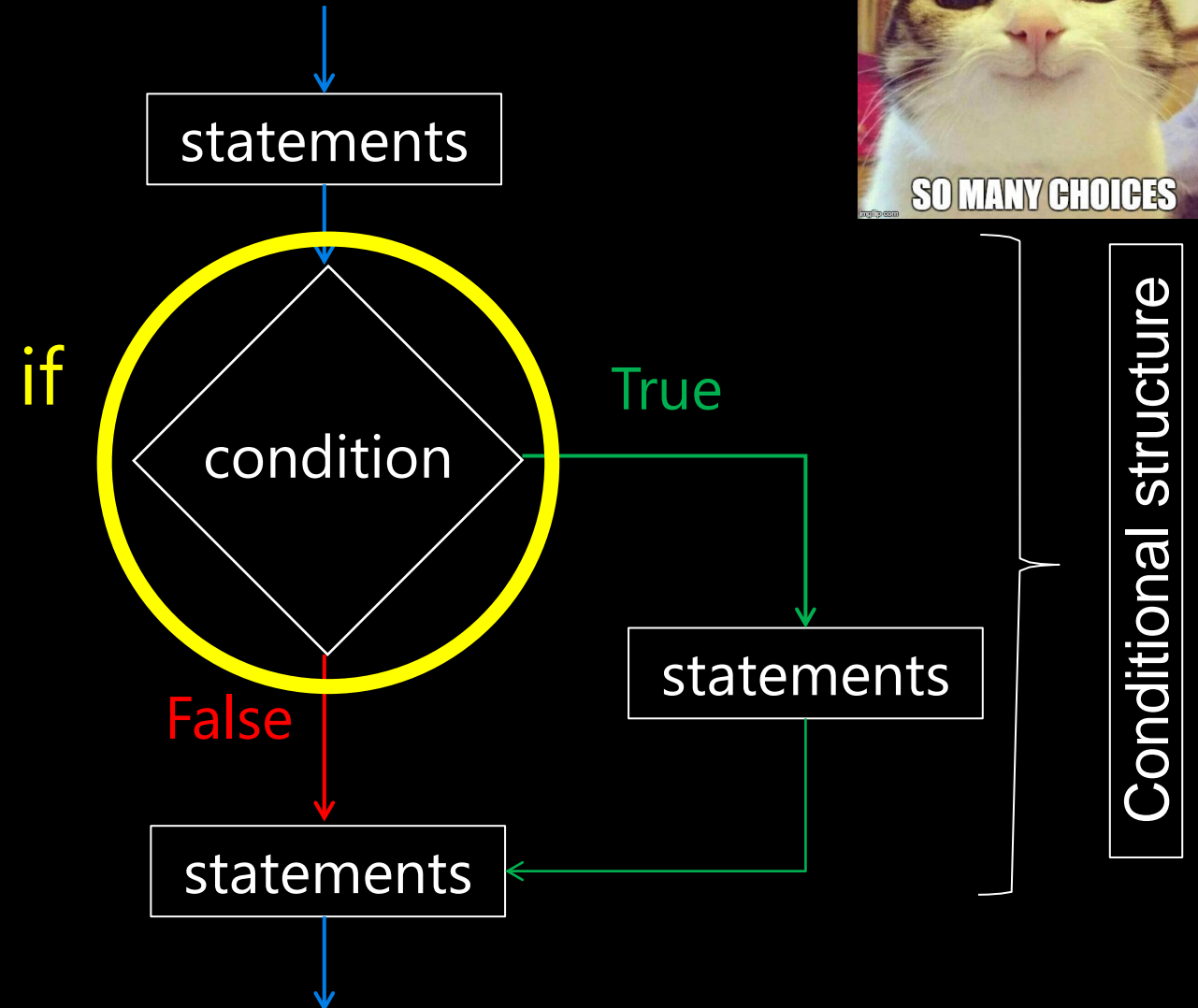
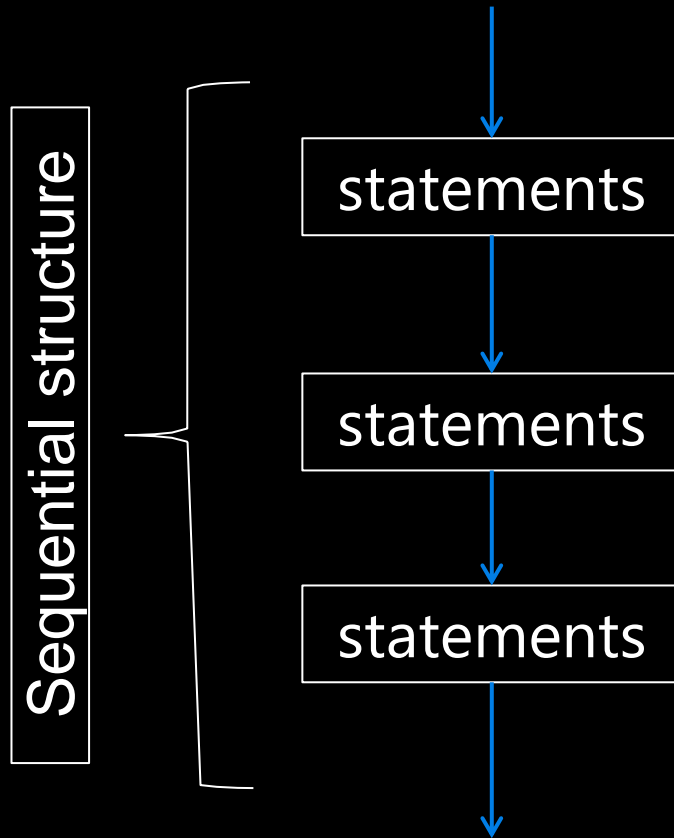
Rock, paper, scissors, lizard, Spock.

Design Problem 2

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Some reminders.

RECAP: Making Choices



Adding the elif (else if) statement



- The most general form of the if conditional statement is:

if condition1:

→ body1

elif condition2:

→ body2

elif conditionN:

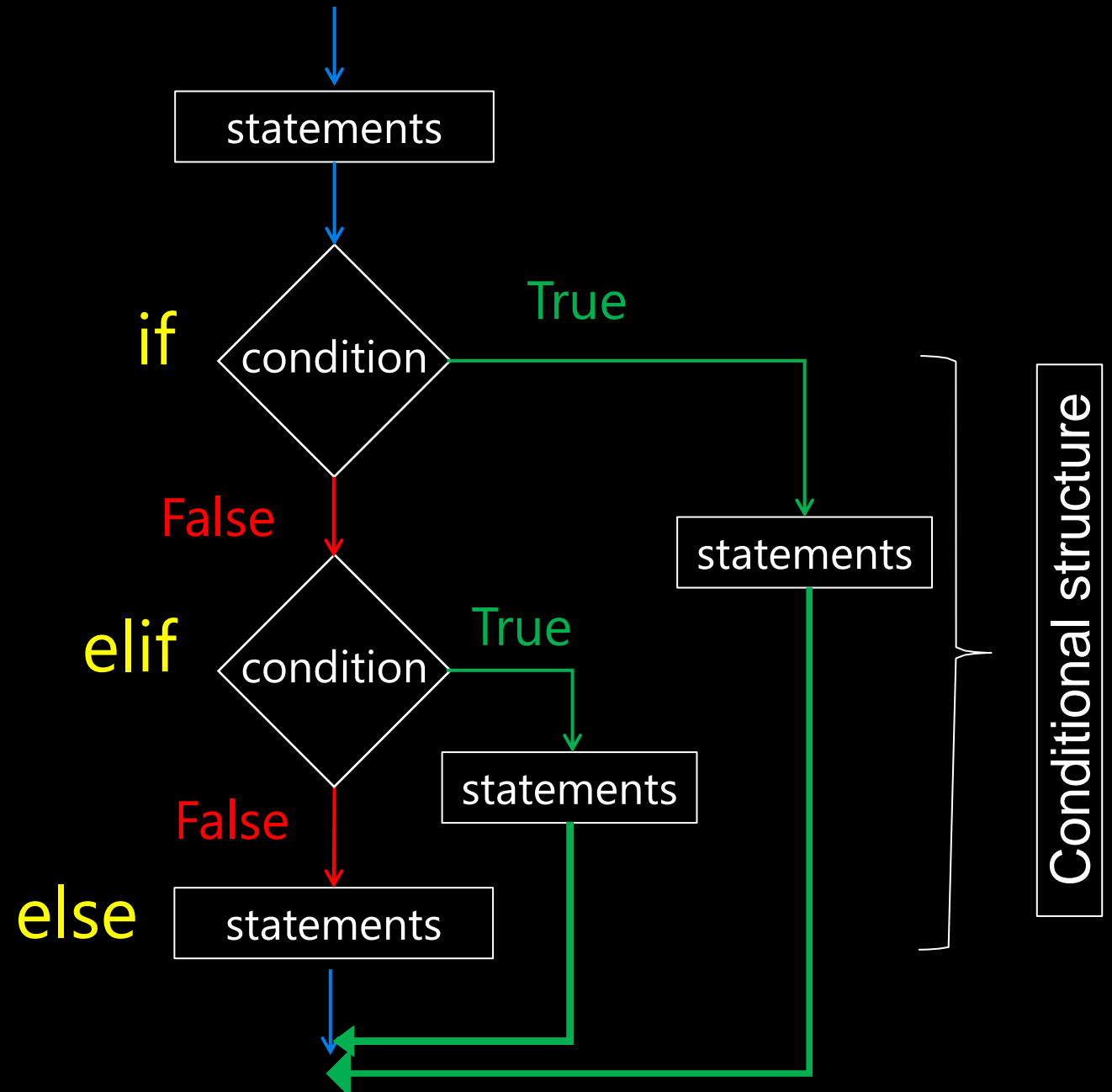
→ bodyN

else:

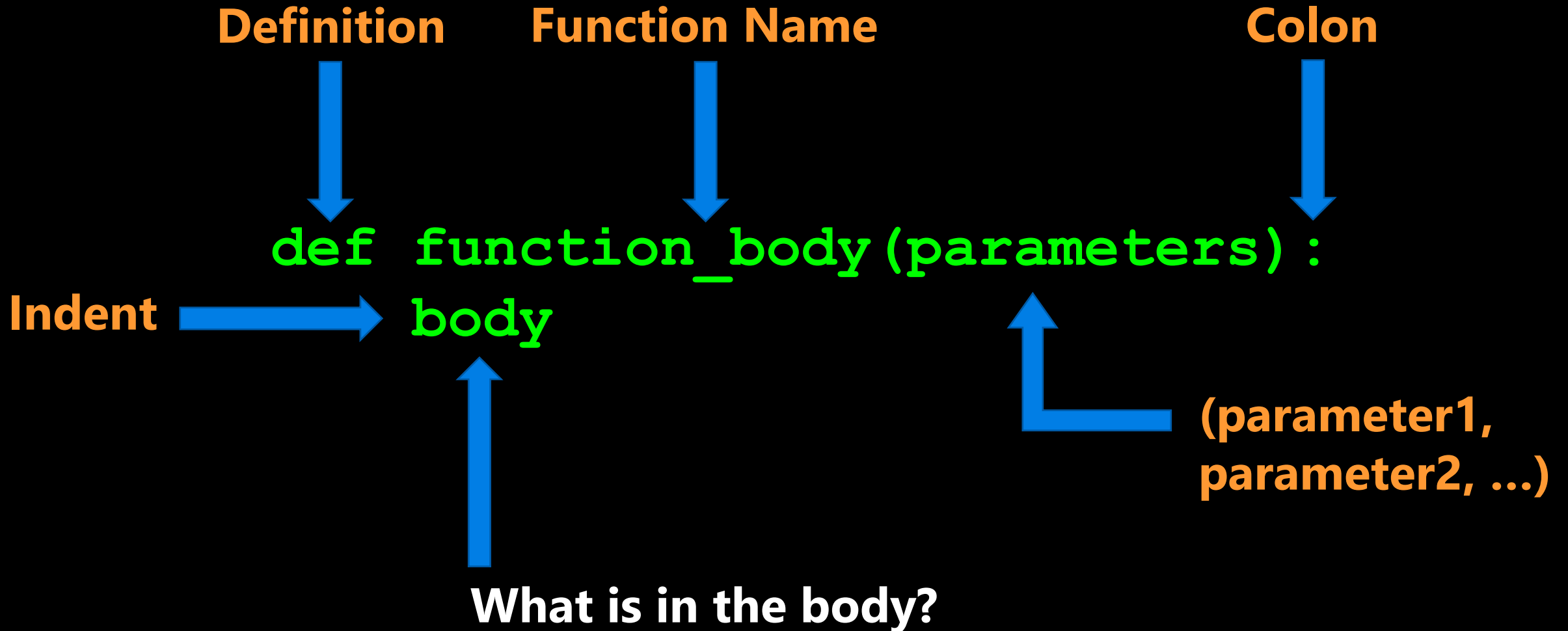
→ other_body

- Note the colons (:) and the indents!
- ONLY 1 body will be executed.
 - if statement is True, execute body1, exits if structure
 - if statement is False, continue to elif statement
 - elif statement is True, execute elif body, exits if structure
 - elif statement is False, continue to next elif statement
 - All if's and elif's are False, execute else statement

Making Choices



Function Definitions



Function Definitions

```
def function_body(parameters):
```

1. `"""DOCSSTRING"""` (optional)

2. Code the does the thing

3. `return [expression]`

The `return` statement is optional and if it is not included, it's the same as writing `return None`

Calling Functions

- The general form of a function call:

`function_name(arguments)`

- Terminology

- *argument*: a value given to a function.
- *pass*: to provide an argument to a function.
- *call*: ask Python to execute a function (by name).
- *return*: give a value back to where the function was called from.

In **Python** names of variables and functions use low case and underscores.



`function_name`
Function_Name
FunctionName

Input

- Python has a built-in function named **input** for reading text from the user.
- The general form of a **input** function call:

input(argument)

- The **argument** is the text you want displayed to the user.
 - *"What is your name?"*
- The value returned by the **input** function is always a string.

Importing Functions **and** Modules

- The general form of an import statement is:
 - `import module_name`
- To access a function within a module:
 - `module_name.function_name`

Engineering Design Process

- Learn to define the problem.
- Practice defining test cases.
- Develop an algorithm plan (i.e. a workflow!).
- Program your solution and debugging.

