

CS105 Lab 5: Intro to Python II

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Numbers in Python

- There are floats
 - 3.1415972, 2.5
 - Basically anything with a decimal place
- And ints
 - 1, 42, 1028
 - Whole numbers

Calculus of Python

- We can add, subtract, divide and multiply both floats and ints
 - `+, -, /, *`
- We also have two more operators
 - `15 // 6` (integer division)
 - `8 % 5` (modulus operator)

Integer Division & Modulus

$$17 / 4 = 4.25$$

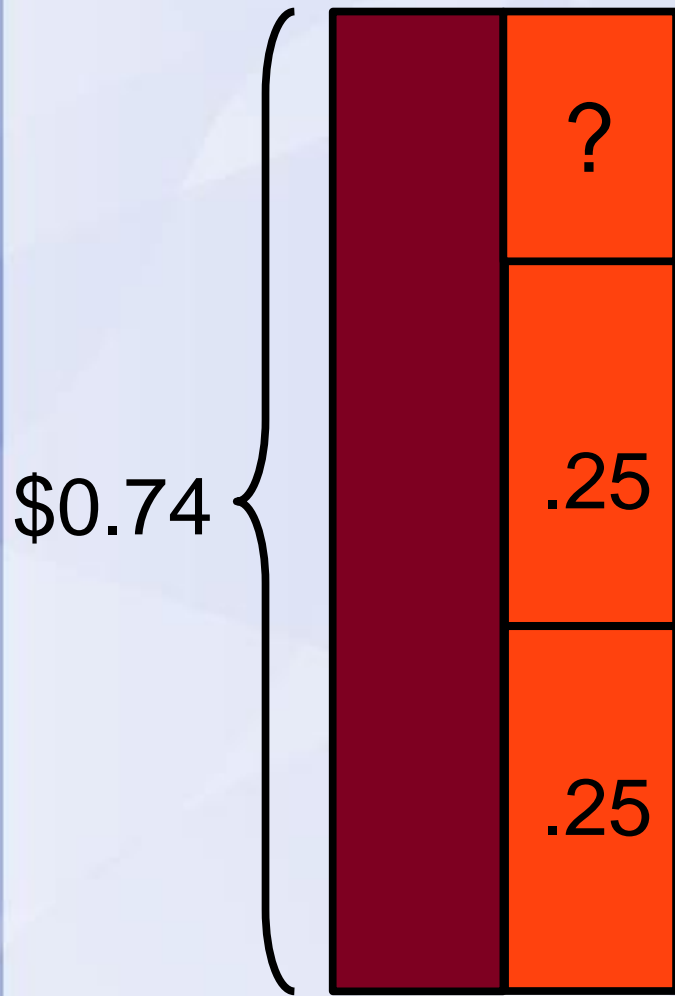
$$17 // 4 = 4$$

$$17 \% 4 = 1$$

4 R 1

$$\begin{array}{r} 4 \overline{) 17} \\ \underline{16} \\ 1 \end{array}$$

Making Change



How do I find the number of quarters?

$$74 // 25$$

How do I find the amount left after taking out quarters?

$$74 \% 25$$

For Loops

- If we want to repeat the same statements we can use for loops
- for <var> in <set> :
 - <repeated statement>
 - <repeated statement>
 - <non-repeated statement>
- Indentation matters

For Loops

- `for i in [1, 2, 3]:`
 `print(i)`
`print(i)`
- Will output: 1
 2
 3
 3
- `for i in range(1,4):`
 `print(i)`
 `print(i)`

How can I use the `range()` function
to get the same result?

Writing a Program

- Play with the problem on paper
- Try to break the problem into simple steps
 - “Find the number of quarters”
- Try to turn these steps into psuedocode
 - Number of quarters = Amount // 25
- Turn the pseudocode into code
 - Quarters = amount // 25

This Lab

- Lab is in the usual place
- Please WebSubmit `changeMaker.py` and `power.py` by the end of lab
- Let me know if you have any questions!