

Discussion 3

"What have I gotten myself into?"

"What's a mantissa?"

Block Review

(quick lecture recap)

jcawthorne@berkeley.edu

Types

- Command

- Not meant to report = No outputs
- Used primarily for side-effects
- (Not functions)



- Reporter

- (Mostly) Functions
- Reports a specific value
- No side-effects

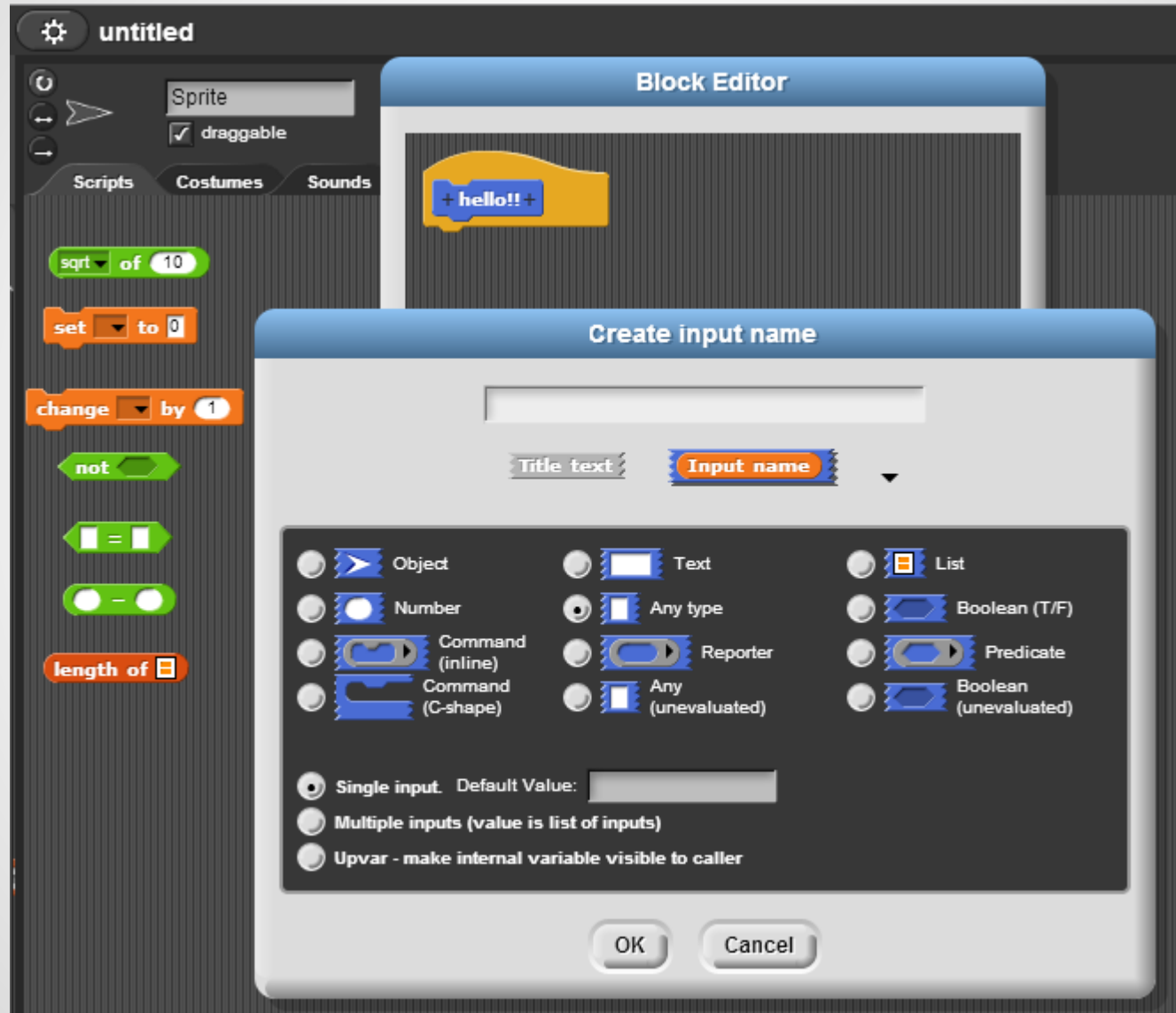


- Predicate

- Functions
- Report Boolean values
 - True or False
- No side-effects



A Side Note on Inputs



A Side Note on Inputs



From *Simply Scheme*:

The technical term for "the things that a function accepts as an argument" is the *domain* of the function. The name for "the things that a function returns" is its *range*.

Domain and Range

Domain 1 of multiply?

Domain 2 of multiply?

Range of multiply?

Domain 1 of contains?

Domain 2 of contains?

Range of contains?



Domain and Range

Domain 1 of multiply? **number**

Domain 2 of multiply? **number**

Range of multiply? **number**

Domain 1 of contains? **list**

Domain 2 of contains? **anything**

Range of contains? **boolean**



Domain and Range

From Fall 2011:

Question 6a : The function `foo` is used in the following way (and you have no idea what `a`, `b`, or `c` are). What can you say about the *domain* and *range* of `foo`?



Domain of `foo` (first argument):

Domain of `foo` (second argument):

Range of `foo`:

Domain and Range

From Fall 2011:

Question 6a : The function `foo` is used in the following way (and you have no idea what `a`, `b`, or `c` are). What can you say about the *domain* and *range* of `foo`?



Domain of `foo` (first argument): **boolean**

Domain of `foo` (second argument): **number**

Range of `foo`: **boolean**

Is there anything wrong here?




Answer!

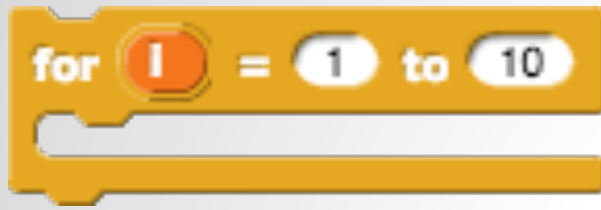


assume a, b, and c
are all distinct

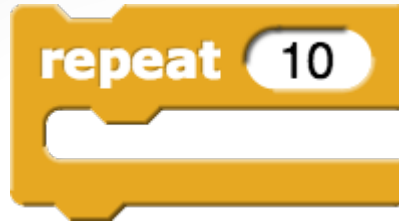
Oh dear Mod. What happened?

-  = 3
- Like the "Remainder" you remember from elementary school division
- $\underline{2 \text{ R:} 3} \leftarrow \text{mod returns this value}$
5 |

Rinse and Repeat... and Repeat Until



- Like simple Repeat
- i increases as loop runs



- Only loops a finite (x) number of times
- Equivalent to copying and pasting inner portion of code (x) times



- Acts like simple Repeat
- Loops UNTIL the boolean (hexagon function) becomes true.
- Like poking your sibling until they yell at you to stop

A Short Lengthy Discussion

length of 

length of 

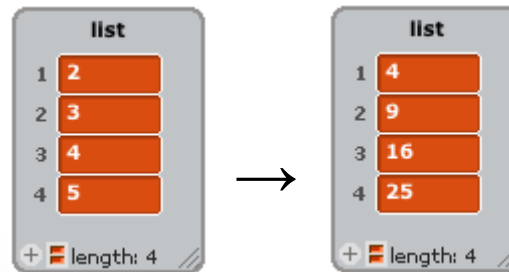
- Red (list block)
- Only for lists
- Green ("word" block)
- Only for words

Are you indexing another pun?



- An index is a number. A way of keeping track of how far through the list/word the loop has come.
- It is not the item in the list, but only refers to a number that can be used to access a specific item on the list.
- **index** != **item index of list**
- Trace out the script above to see how it works.

Cause i would do anything for you...



- The for loop has a built-in index *i*, which increments by 1 after each runthrough of the blocks inside it
- The script above has the same functionality as the script in the previous slide, but instead uses a for loop