

Announcements

pop	none	hybrid
pop	position	hybrid
sort	none	mutator

Oct 13, 2016

Prof. Rodger

- Reading and RQ 11 due next time
- APT 4 is due on Tuesday
- Today:
 - A different way to process elements
 - List comprehension
 - Coming – more ways to process data
 - Exam 1 back
 - Rodger extra office hours today 3-5:30pm

Giving Back Exam 1... on Gradescope

- Solutions posted – regrades til Oct 21.
 - Ask for regrade on gradescope
- Try working problem you missed first
 - Then look at solution
- Once you think you understand
 - Get blank sheet of paper – try again
- Understand all solutions

Exam 1 scores

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Exam 1 scores
} **Wow**

} Yes

} ok

Get a tutor -
Understand when
you get help

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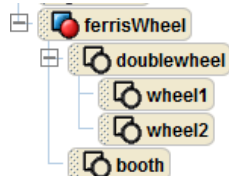
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6



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7

Nested Loop

Loop 10 times times show complicated version

Do together

ferrisWheel.doublewheel roll right 1 revolution style = abruptly duration = 2 seconds

Loop 2 times times show complicated version

Do together

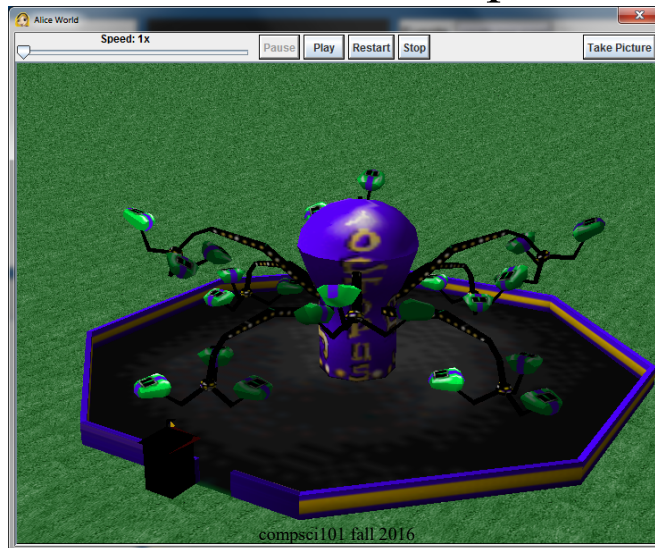
ferrisWheel.doublewheel.wheel1 roll left 1 revolution style = abruptly more

ferrisWheel.doublewheel.wheel2 roll left 1 revolution style = abruptly more

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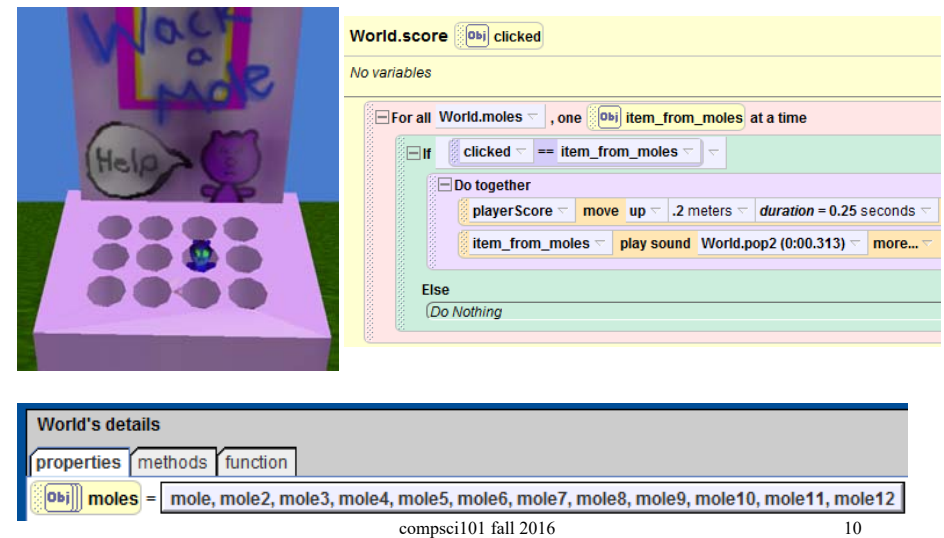
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Fair Ride – Octopus



9

Wac-A-Mole



10

Problem:

Find the first duplicate adjacent words in a phrase

- “Did I make make a mistake in in this?”
- Convert to list
- Answer is 2, (start counting at 0)

Bit.ly/101f16-1013-A

```
def positionDuplicate(phrase):
    words = phrase.split()
    if len(words) < 2:
        return -1
    pos = 0
    while True:
```

```
        pos = pos+1
    return pos
```

APTs solved in a similar way

- NameGroup
- Pikachu

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13

APTs solved in a similar way

- NameGroup
- Pikachu



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14

Creating a list

- Given a list of numbers, create a second list of every number squared.

```
nums = [8, 3, 5, 4, 1]
```

```
sqnums = []
```

```
for v in nums:
```

```
    sqnums.append(v*v)
```

```
print sqnums
```

```
[64, 9, 25, 16, 1]
```

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15

More on List operations

- Previous page
 - nameOfList “dot” function (parameter)
sqnums.append(v*v)
- See list operations on next page
- Mutator vs hybrid vs return
 - Mutator changes the list (no return value)
 - Hybrid changes list and returns value
 - Return – returns value, no change to list

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16

List operations from book

Method	Parameters	Result	Description
append	item	mutator	Adds a new item to the end of a list
insert	position, item	mutator	Inserts a new item at the position given
pop	none	hybrid	Removes and returns the last item
pop	position	hybrid	Removes and returns the item at position
sort	none	mutator	Modifies a list to be sorted
reverse	none	mutator	Modifies a list to be in reverse order
index	item	return idx	Returns the position of first occurrence of item
count	item	return ct	Returns the number of occurrences of item
remove	item	mutator	Removes the first occurrence of item

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17

Problem

- Remove all negative numbers from list
 $[4, -2, 5, 6, -3] \rightarrow [4, 5, 6]$
- Two ways
 - return a new list with all negative numbers removed
 - Modify a list to remove negative numbers

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18

www.bit.ly/101f16-1013-2

```
def removeNegatives(numberlist):  
    answer = []  
    for num in numberlist:  
        if num >= 0:  
            answer.append(num)  
    return answer
```

somenums = [3, -1, 8, -5, -2, 6, 7]

nonegs = removeNegatives(somenums)

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19

www.bit.ly/101f16-1013-3

```
def removeNegatives2(numberlist):  
    for x in range(len(numberlist)):  
        value = numberlist[x]  
        if value < 0:  
            numberlist.pop(x)
```

somenums = [3, -1, 8, -5, -2, 6, 7]

removeNegatives2(somenums)

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20

www.bit.ly/101f16-1013-4

```
def removeNegatives3(numberlist):  
    pos = 0;  
    while (True):  
        if pos >= len(numberlist):  
            break  
        value = numberlist[pos]  
        if value < 0:  
            numberlist.pop(pos)  
        pos = pos + 1
```

somenums = [3, -1, 8, -5, -2, 6, 7]

removeNegatives3(somenums)