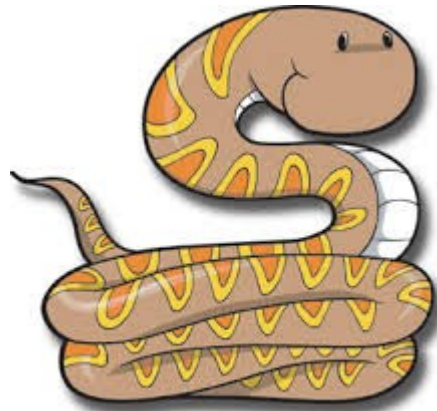


Python Review Lecture & Activities

Session 2, Oct. 25



Variables

```
>>> variable = 5
```

```
>>> variable  
5
```

```
>>> variable = "varying"
```

```
>>> variable  
'varying'
```

Strings

```
>>> "this is a string" + " and another"  
'this is a string and another'
```

```
>>> "string" * 3  
'stringstringstring'
```

if/elif/else

```
>>> today = 'Saturday'
>>> if today == 'Saturday':
...     print('Sandwich lunch!')
... else:
...     print("No lunch :'(")
...
Sandwich lunch!
```

if/elif/else

Note: Be careful with capitalization:

```
>>> If 2 > 5:  
    File "<stdin>", line 1  
        If 2 > 5:  
            ^
```

SyntaxError: invalid syntax

Note: Remember to indent!

Functions

```
>>> def addTwo(num):  
...     print(num+2)  
...
```

```
>>> addTwo(5)  
7
```

```
>>> addTwo(500)  
502
```

Lists

```
>>> submarineMovies = ['Hunt for Red  
October', 'U-571', 'Das Boot',  
'K-19']
```

```
>>> len(submarineMovies)  
4
```

```
>>> submarineMovies[2]  
'Das Boot'
```

Remember: the first entry is in place 0!

Strings and lists

```
>>> myString = "zazzles"

# Print out words starting with z
>>> def zfunction(input):
...     if input[0] == 'z':
...         print(input)
...

>>> zfunction(myString)
zazzles
```


for loops

```
>>> for movie in submarineMovies:  
...     print(movie)  
...  
Hunt for Red October  
U-571  
Das Boot  
K-19
```

raw_input () and break

```
>>> secret_word = 'python'
>>> guess = raw_input()
ghost
>>> guess
'ghost'
>>> while (True):
...     print('Guess my secret word: ')
...     guess = raw_input()
...     if guess == special_word:
...         print('You got it!')
...         break
...
...
Guess my secret word:
foo
Guess my secret word:
python
You got it!
```

What is a dictionary?

```
>>> # Also called "association
>>> # lists", "hashes", "maps", etc

>>> grades = {
    'luqman': 85,
    'linlin': 79,
    'brook': 90, # trailing comma
}
>>> grades
{'linlin': 79, 'brook': 90, 'luqman': 85}

>>> grades['linlin']
79
```

Using dictionaries

```
>>> grades = {  
    'luqman': 85,  
    'linlin': 79,  
    'brook': 90,  
}
```

```
>>> # Add an item to a dictionary
```

```
>>> grades['yomna'] = 83
```

```
>>> grades
```

```
{'linlin': 79, 'yomna': 83, 'brook': 90,  
'luqman': 85}
```

Using dictionaries

```
>>> # Be careful with KeyValue errors
```

```
>>> grades['elana']
```

```
Traceback (most recent call last):
```

```
  File "<stdin>", line 1, in <module>
```

```
KeyError: 'elana'
```

```
>>> # Safer:
```

```
>>> grades.get('elana')
```

```
>>>
```

Using dictionaries

```
>>> grades = {  
    'luqman': 85,  
    'linlin': 79,  
    'brook': 90,  
    'yomna': 83,  
}
```

```
>>> # Change a value in the dictionary
```

```
>>> grades['yomna']
```

```
83
```

```
>>> grades['yomna'] = 100
```

```
>>> grades['yomna']
```

```
100
```

keys() and values()

```
>>> grades = {  
    'luqman': 85,  
    'linlin': 79,  
    'brook': 90,  
    'yomna': 100,  
}
```

```
>>> # Get a list of the keys in the dict
```

```
>>> grades.keys()  
['luqman', 'linlin', 'brook', 'yomna']
```

```
>>> # Get a list of the values in the dict
```

```
>>> grades.values()  
[79, 100, 90, 85]
```

keys() and values()

```
>>> # Class average
>>> grade_list = grades.values()
>>> sum = 0

>>> for grade in grade_list:
...     sum += grade

>>> sum
354
>>> print(sum / len(grade_list))
88
```


Using a module

```
>>> random.randint(0,5)
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
NameError: name 'random' is not defined
```

```
>>> # Make sure we have the code available!
>>> import random
>>> random.randint(0,5)
5
>>> random.randint(0,5)
4
```

Open Questions



Review Exercises!

Exercise 1

- Write a function called `hello` that takes your name as input, and prints the string:
Hello, (your name)!
- Remember to use the keyword **`def`**
- **You must write your solution using your text editor in a file called 'exercise1.py'.**

Exercise 1, continued

- Modify `hello` to ask you for your name and then print the string:
Hello, (your name)!
- Hint: use `raw_input ()` to collect the name
- **You must write your solution using your text editor in a file called 'exercise1.py'.**

Exercise 2

Debug (find and fix the errors) in the following program:

```
#!/usr/bin/python

# buggyFunction: Prints the 'input'
#   input: A string
def buggyFunction(input):
    if input[0] = 'a':
        print(input)
    Else:
        print(a + input)
```

What is always true about the printed word?

Exercise 3

- Write a program that only prints out words with the letter 'z' in them from the following list:

```
words = ['zebra', 'weather', 'spaghetti',  
'pierogies', 'squash', 'zucchini', 'pizza']
```

- Hint: use a loop!
- **You must write your solution using your text editor in a file called 'exercise3.py'.**

Exercise 4

- Homework review!
- We will be completing the Shakespeare dictionary exercises. If you've already completed it, we will check your solution.
- Check the review page on the wiki for links.
- **You must write your solution using your text editor in a file called 'exercise4.py'.**