

Lecture #4

CSCI 127

September 24, 2024

Types of values in Python

- String: a sequence of characters
 - Examples:
 - `myString = "hello"`
 - `print("I Love Python!")`
 - `userInput = input("Enter a message: ")`
 - We denote the start and end of the string with quotes
 - Can use single or double quotes but they must match
 - Strings are made up of individual characters
 - Each character has an index, with the first character always at index 0
 - It is possible to have an empty string, or a string with zero characters

Strings

- We can get the number of characters in a string by using the length function, `len()`
 - Example:

```
greeting = "HELLO"  
numChars = len(greeting) #equals 5
```
- There are a number of built-in functions for strings we can use
- For a complete list see [Lab 2](#)

Notes on functions

- Built-in functions: these are functions that can be used without importing any libraries to our program
 - Example of a built-in function, the string method find():

```
myString = "hello"
idx = myString.find("o")    #equals 4
```
 - **Note:** *method* is another word for function; for this class you can use those words interchangeably
- Functions from libraries: these are functions that require importing a library before using them
 - In this example, you must include the import statement before using turtle functions:

```
import turtle
tina = turtle.Turtle()
```

Types of values in Python

- Integer: a whole number value
- Like strings, we can store these numbers in variables or pass them as input values to other functions
 - Examples:
 - `number = 5`
 - `for i in range(10):
 print(40)`

Types of values in Python

- The type of value we store in our variable determines what functions we can use on that variable
- For example, if we have a variable that is storing a turtle value, we cannot use the length function on that variable:
#THIS WILL NOT WORK:

```
import turtle  
tina = turtle.Turtle()  
print(len(tina))
```
- This error is given: `TypeError: object of type 'Turtle' has no len()`

The plus operator

- Consider the following code:

```
myString = "12"
```

```
myInt = 12
```

```
addString = myString + myString
```

```
addInt = myInt + myInt
```

```
print(addString, addInt)
```

```
#output is: 1212 24
```

- The plus operator will behave differently on strings and integers

Types of values in Python

- Lists: a collection of values, stored in a sequence
- Examples:
numbers = [100, 200, 300, 400]
words = ["one", "two", "three"]
combo = [100, "one", "five", 600]
- Syntax: an open bracket denotes the start of the list and a closing bracket denotes the end of the list
- Individual items inside the list are separated by commas

Lists

- Like strings, lists are a sequence of values
- We can use indices to get specific items from our lists
- The first item in the list is always at index 0
- We can use for-loops to go through items in a list:

```
myList = [ 55, "branch", 3, "hug", 459]  
print(myList[0]) #prints 55  
for item in myList:  
    print(item) #prints all items in the list one on each line
```

Review Lab 3 Materials

- Going over the examples using colors with turtles and hexadecimal numbers as shown in [Lab 3](#)

Unix commands

- At the end of each lab you are introduced to Unix terminal commands
- These are commands you can use to navigate a file system without a graphical interface



unixExamples



Name



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Folder



p1.py

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Zero bytes

Python Source



p2.py

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Zero bytes

Python Source



p3.py

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Zero bytes

Python Source

```
Melissas-MacBook-Pro-5:unixExamples melissalynch$ pwd
/Users/melissalynch/Desktop/unixExamples
Melissas-MacBook-Pro-5:unixExamples melissalynch$ ls
homework      p1.py          p2.py          p3.py
Melissas-MacBook-Pro-5:unixExamples melissalynch$ mv p1.py homework
Melissas-MacBook-Pro-5:unixExamples melissalynch$ ls
homework      p2.py          p3.py
Melissas-MacBook-Pro-5:unixExamples melissalynch$ █
```



Favorites

- AirDrop
- Recents
- Applications
- Desktop
- Documents
- Downloads

iCloud

- iCloud Drive
- Shared

Locations

- Network

Tags

- Red

< > unixExamples



Name



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> homework Today at 9:32 AM -- Folder

p2.py Feb 27, 2024 at 12:42 PM Zero bytes Python Source

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