Python Review
Intro to Git

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Python Overview

- Based on Python 3.4.4 specifications
- Assumed that you know Python
- Derived from Dr. Mitra’s CS 303E Notes

Conventions

- Use a plain text editor
  - Notepad++, TextWrangler, Sublime Text, etc.
  - Don’t use Notepad (Win) or TextEdit (Mac)!
- Spaces, not tabs
  - Google “Indent using spaces in <TextEditor>”
  - Indents matter in Python
- Unix line endings
  - Google “Unix line endings in <TextEditor>”

Hello World

```
# This is a comment
# This is a basic Hello World program

print(“Hello World!”)
```

Variables

- Start with a letter or underscore
- Contains letters, digits, or underscores

```
x = 1
y = 2
```

Operators

- Arithmetic
  - + - * / // % **
- Comparison
  - == != > >= < <=

User Input

```
nameStr = input("Name: ")
age = eval(input("Age: "))
```

Functions

```
def functionName():
    return 7

def functionName2(arg1, arg2):
    return arg1 + arg2
```

Conditionals

```
if (someCondition):
  ..do stuff..
else:
  ..do other stuff..
```

```
if (someCondition):
  ..do stuff..
elif:
  ..do cool stuff..
else:
  ..do other stuff..
```

Loops

```
for i in range(0,10):
  print(i)
```

`break` and `continue`

String

Ordered list of characters

```
string = "Hello World!"
print(string)
print(string[1])
print(string[1:])
print(string[:-2])
```

File Input

```
inFile = open("inputFile.txt","r")

for line in inFile:
  print(line.rstrip("\n"))

inFile.close()
```

File Output

```
outFile = open("outputFile.txt","w")
outFile.write("Hello World!\n")
outFile.close()

# To Append
outFile = open("outputFile.txt","a")
outFile.write("Hello World 2!\n")
outFile.close()
```

List

Basic ordered data structure

```
l = ["a", "b", "c", 2, 3, 4]
for i in range(len(l)):
  print(l[i])
for e in l:
  print(e)
```

Dictionary

Key-value store

```
phoneNums = {}
phoneNums['Eric'] = '512-555-0123'
phoneNums['Daniel'] = '512-555-0124'

phoneNums['Eric'] = '512-555-0000'
```

Python Questions?

Git Overview

- Version Control
  - Managing different versions of code
  - See the code “history”
  - Everything is “local” until you push to “remote”
  - GitHub is our “remote”
- Collaboration
  - Many people working on the same code at once
  - Merge the changes later
  - No need to email/Dropbox the “latest version” of code

Git Terms

- Working Directory: current folder of actual files
- Commit: single set of code changes
  - Uniquely identified by a SHA1 hash (fingerprint)
- Branch: **ordered** set of commits
  - Timeline of code changes
- Repository: set of branches

Starting Out

- Create your repository (“repo”)
- Add your code
- Make your first commit
- Push your repo

Workflow

- Make your changes
- Commit
- Pull and merge from remote (sometimes)
- Push

Merge Conflicts

- Can’t decide how to resolve two conflicting changes
- Manually resolve the conflict and commit the change
- Push

More Advanced Stuff

- Use command line `git`
  - Feel free to use either GitHub Desktop or command line `git`

Git Questions?