

# Upper School 2 - Coding

## O Function, My Function!

O Captain My Captain

by Walt Whitman

O Captain my Captain! our fearful trip is done,  
The ship has weathered every rack, the prize we sought is won,  
The port is near, the bells I hear, the people all exulting,  
While follow eyes the steady keel, the vessel grim and daring;  
But O heart! heart! heart!  
O the bleeding drops of red,  
Where on the deck my Captain lies,  
Fallen cold and dead.

O Captain! my Captain! rise up and hear the bells;  
Rise up—for you the flag is flung for you the bugle trills,  
For you bouquets and ribboned wreaths for you the shores a-crowding,  
For you they call, the swaying mass, their eager faces turning;  
Here Captain! dear father!  
This arm beneath your head!  
It is some dream that on the deck,  
You've fallen cold and dead.

My Captain does not answer, his lips are pale and still;  
My father does not feel my arm, he has no pulse nor will;  
The ship is anchored safe and sound, its voyage closed and done;  
From fearful trip the victor ship comes in with object won;  
Exult O shores, and ring O bells!  
But I, with mournful tread,  
Walk the deck my Captain lies,  
Fallen cold and dead.

Nasri Academy  
Thurs. Sept. 19<sup>th</sup>, 2019  
By Julio B. Figueroa

# Overview

- **Review**
- **Def my\_function():**
- **File Organization**
- **Assignment: function(myFunction)**

# Review

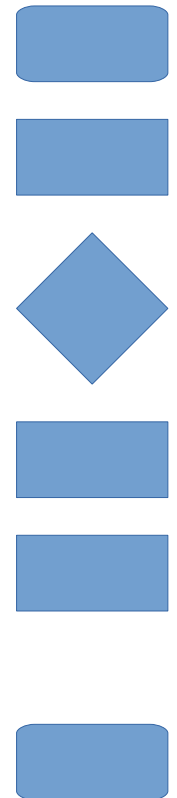
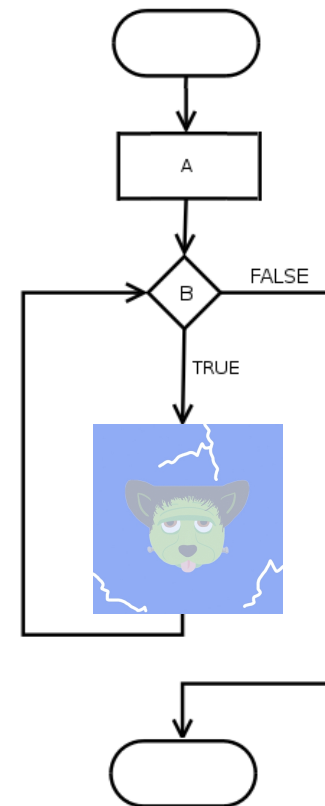
**These structures control execution of a program.**

**They run repeatedly until some condition(s) is/are met**

**We introduce two types of loops**

- **For loops**
- **While loops**

for(A;B;C)  
D;



# Def my\_function():

```
1  # you can define your own user defined functions!
2  # functions work in an input --> output manner
3
4  def avg_number(x, y):
5      print("Average of ",x," and ",y, "is",(x+y)/2)
6
7  avg_number(3,4)
8  avg_number(11,12.2)
9
10 def avg_number2(z, k):
11     avgNumber = (z+k)/2
12     print(avgNumber)
13
14 avg_number2(10,4)
15 # what happens if you use the output of avg_number() inside avg_number2()?
16 avg_number2(10,avg_number(2,2))
17 # can you think of a way to make this work?
18 # hint: consider dataTypes and what the output of a function is
```



# Def my\_function():

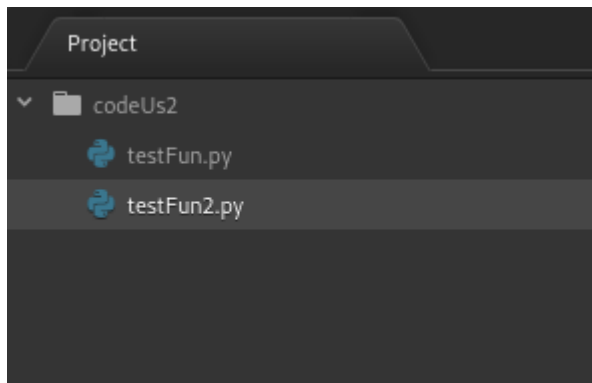
```
testFun.py x testFun2.py
1  def average2(a,b):
2      average = (a + b)/2
3      return average
4
5  def average3(a, b, c):
6      average = (a + b + c)/3
7      return average
8
9  def average4(a, b, c, d):
10     average = (a + b + c + d)/4
11     return average
12
13     print(average2(10,5))
14     print(average3(15,10,5))
15     print(average4(20,15,10,5))
16
17     # now you can use functions within functions
18     # be careful with the dataTypes they accept
19     print(average2(2,average3(1,2,3)))
20
```



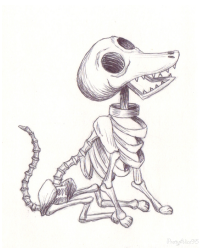
still with us

# File Organization

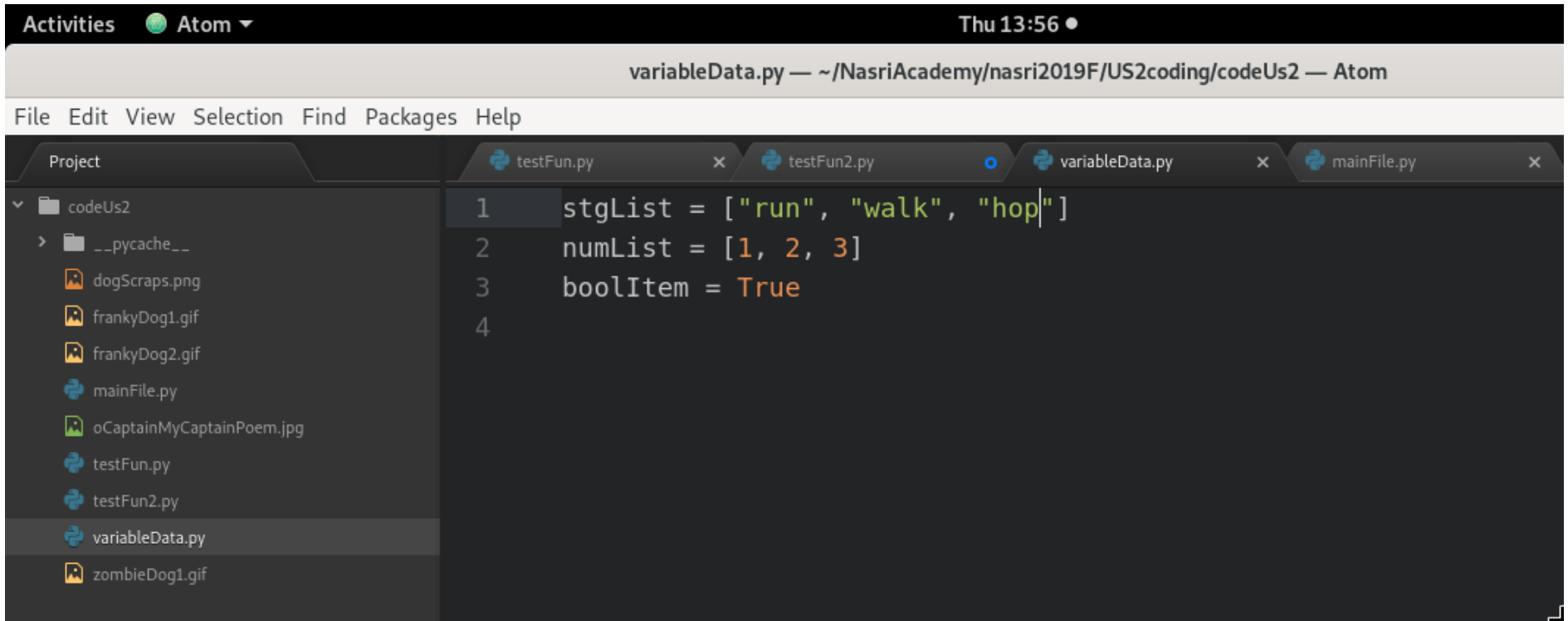
- How do you structure programs into separate files?
- How do you call a function from another file?
- For those using atom, use the browser view to drop your files into view like so.



- We're going to add a few more files to this folder

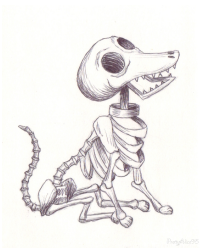


# File Organization



The screenshot shows the Atom code editor interface. The top status bar indicates the time is 13:56 on Thursday. The title bar shows the current file is `variableData.py` located at `~/NasriAcademy/nasri2019F/US2coding/codeUs2`. The menu bar includes File, Edit, View, Selection, Find, Packages, and Help. The left sidebar displays the project structure for `codeUs2`, which includes a `__pycache__` directory, image files (`dogScraps.png`, `frankyDog1.gif`, `frankyDog2.gif`, `zombieDog1.gif`), and Python files (`mainFile.py`, `testFun.py`, `testFun2.py`, `variableData.py`). The `variableData.py` file is selected and open in the editor. The editor tabs show `testFun.py`, `testFun2.py`, `variableData.py` (active), and `mainFile.py`. The code in `variableData.py` is as follows:

```
1 stgList = ["run", "walk", "hop"]
2 numList = [1, 2, 3]
3 boolItem = True
4
```



# File Organization

Activities Atom Thu 13:56

mainFile.py — ~/NasriAcademy/nasri2019F/US2coding/codeUs2 — Atom

File Edit View Selection Find Packages Help

Project

- codeUs2
  - \_\_pycache\_\_
  - dogScraps.png
  - frankyDog1.gif
  - frankyDog2.gif
  - mainFile.py
  - oCaptainMyCaptainPoem.jpg
  - testFun.py
  - testFun2.py
  - variableData.py
  - zombieDog1.gif

```
1 from variableData import stgList,numList
2 import random
3
4 print(random.choice(stgList))
5 print(random.choice(numList))
6
7 # try this
8 print(boolItem)
9 # what can you do to fix this?
10
```

