L13: Functions, scope, return value (unfinished)

Please encourage students you engage with to attend the **first job and internship event of the year**! **Dozens of employers** will be **on-campus ready to connect** with **students of all majors and class levels** at the **WWU Career & Internship Fair | All Industries** on Friday, October 21st from 11:00 a.m. to 3:00 p.m. in the MAC Gym.

This quarterly fair features over 55 organizations from across the region, representing a variety of industries, recruiting for jobs and internships.

Students are encouraged to research participating employers in advance on the here and be ready to talk about the skills, knowledge and experience they have developed during their time at WWU! In fact, the Career Services Center is **hosting workshops to help students prepare,** whether it be tailoring their resume, crafting their elevator pitch, or conducting a practicing interview. **Participation in workshops or the career fair is FREE and open to all students and alumni!**

If students need something professional to wear, please encourage them to visit our **Career Closet, with free, professional clothing that students can keep!**

Returning values :

```python
2  def is_it_two(num):
3      if num > 2:
4          print("greater")
5          return("greater")
6      elif num < 2:
7          print("less than")
8          return("Less")
9      else:
10          print("is two!")
11          return("2!")
12
13 result = is_it_two(int(input("Number")))
```

```python
2  def get_integer_from_user(question):
3      user_input = input(question)
4      while not user_input.isdigit():
5          print("Sorry that's not a number. Try again")
6          user_input = input(question)
7
8
9      return int(user_input)
10
11 puppies = get_integer_from_user("How many puppies?")
12 kittens = get_integer_from_user("How many kittens?")
```

Nothing after the return will print!
the point of no return

```
13        print("here!")
14
```

```
 2  def get_integers_from_user(num):
 3      integers = []
 4
 5      while len(integers) < num:
 6          user_input = input("Please type an integer")
 7          while not user_input.isdigit():
 8              print("Sorry that's not a number. Try again")
 9              user_input = input("Please type an integer")
10          integers += [int(user_input)]
11
12      return integers
13
14  print(get_integers_from_user(3))
```

Functions :

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Why functions?

Concise → wrap it up for easy re'use (call)

Costomizable → send arguments to do different things

Composable → can combine them to build bigger programs (Next lecture)
       = Cut Findays

Draw a square with a turtle in a function

(Not sure yet? leave it open)

```
def draw square (
    t. forward
```
oh. we need a turtle and a size

```
def draw_square(t, size):
    t. forward(size)
```
Test this much.
on paper, check to see
how close to goal

```
    t. left(90)
```
Repeat this... a for loop?

```
def draw-square(t,size):
    for i in range(4):
        t. forward(size)
        t. left
```
did we do it? test

leave a lot of space on paper

challenge: how to change
draw_square to draw rectangles?

given a width, height
and a turtle

[Small group] breakout

```
def draw_rect (t, w, h):
    for i in range(2):
        t.forward (w)
        t.left (90)
        t.forward (h)
        t.left (90)
```

Cut

doc Strings   Required by me; future bosses
               can generate documentation automatically

Summary

"""
Turtle draws a rectangle w×h going
counter clockwise

o precondition: Turtle has pen down facing w

o Postcondition: turtle ends where it started

don't you
wish Quiz
: midterm
Code had this?

o args:
    t turtle object
    w width integer
    h height integer

o returns:
    none

o raises:
    none

Cut planning
functions

Functions calling functions

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```
1  def f(x):
2      print("F")
3      g(x)
4      print("F2")
5
6  def g(x):
7      print("G")
8      h(x)
9      print("G2")
10
11 def h(x):
12     print("H")
13
14
15 h(2)
16 f(3)
17 g(5)
```

What will print?