CS 160
CS Orientation
Fun-Day Friday
Functions...

• Recap...
• What are they?
• When do we return values?
• When do we have parameters?
Simple program to draw a box

```python
def main():
    print("+--------+")
    print("+    +")
    print("+    +")
    print("+    +")
    print("+--------+")

main()
```
Let’s make drawing a box more general

```python
# boxes.py

def draw_top_bottom():
    print("+-------+")

def draw_sides(s):
    for x in range(s):
        print("+       +")

def draw_box_rect(b, s):
    for x in range(b):
        draw_top_bottom()
    draw_sides(s)
    draw_top_bottom()

def main():
    num=2
    sides = 10
    draw_box_rect(num, sides)

main()
```
1\textsuperscript{st} problem

• Write a program that sums a series of (positive) integers entered by the user, excluding all numbers greater than 100.
1 solution getting numbers until the user wants to quit entering numbers

```python
# We are taking total in as a zero value, but we could've created total locally because we returning the value to main

def adder(total):
    cont = True  # set to true to start the loop
    while (cont == True):
        newnum = int(input("Give me a # greater than 0 but less than 100: "))
        if newnum <= 100 and newnum > 0:
            total += newnum  # If you see the pattern, total = total + newnum
        cont = int(input("Enter 1 to continue: "))
    return total

def main():
    total = 0  # If you are summing things, then initially set the sum to zero
    print(adder(total))  # Directly print the sum returned by the function

main()
```
2\textsuperscript{nd} problem

• Write a function to get the number of scores from the user.
• Write a function to get the scores from the user.
• Sum and average the scores.
Without a list...

```python
# This solution doesn't use a list, but instead, returns the sum of scores
def get_num():
    return int(input("How many score do you have?(plz input an integer)"))

def get_score(b):
    score = 0
    for x in range(b):
        score += int(input("Give a score"))
    return score

def main():
    num = get_num()
    score = get_score(num)
    print("the sum is:"+str(score))
    print("the average is :")+str(score/num)

main()
```
With a list...

```python
# This solution uses a list, so no return is needed in get_score

def get_num():
    return int(input("How many score do you have? (plz input an integer) "))

def get_score(s):
    for x in range(len(s)):
        s[x] = int(input("Give a score: "))

def main():
    num = get_num()
    scores = [0] * num

get_score(scores)

total = 0
for x in range(len(scores)):
    total += scores[x]

print("the sum is: "+str(total))
print("the average is : "+str(total/num))

main()
```