

CS21: INTRODUCTION TO COMPUTER SCIENCE

Prof. Mathieson

Fall 2018

Swarthmore College

Outline Sept 17:

Sit at a new computer!

- Recap accumulator pattern with numbers
- Accumulator pattern with strings
- Next time:
 - Boolean types
 - Comparison operators
 - First conditionals

Notes

- **Lab 2** due **Saturday** night
- Let lab instructors know if you finish early
- Okay to “pass” if I call on you!

Recap accumulator pattern
with numbers

```
"""
```

Ask the user for a positive integer n , and compute the sum of the first n integers (starting from 0). i.e. if $n=4$, we compute the sum = $0+1+2+3$

Enter an integer: 10

Sum of first 10 integers: 45

Author: Sara Mathieson

Date: 9/14/18

```
"""
```

sum_loop.py

```
def main():
    # ask the user for an integer
    n = int(input("Enter an integer: "))

    # initialize accumulator variable
    total = 0
    for i in range(n):
        # reassign accumulator variable
        total = total + i
        print(total) # double check total is changing correctly

    print() # blank line
    print("Sum of first", n, "integers:", total)

main()
```

```
"""
```

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main()
```

2 key steps!

```
"""
Compute the sum of 5 random integers, chosen between 0-9 inclusive.
i.e. write a loop that runs 5 times, and each time choose a new random integer
using random.randrange(..). Compute the sum of these random integers.

```

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```
"""
```

rand_loop.py

```
import random
```

```
def main():
```

```
    # set up accumulator variable
```

```
    total = 0
```

```
    for i in range(5):
```

```
        # choose a new random number each time through the loop
```

```
        num = random.randrange(10)
```

```
        total = total + num # accumulate!
```

```
        # optional: print out random number
```

```
        print("random number", str(i+1)+":", num)
```

```
    print()
```

```
    print("Sum:", total)
```

```
main()
```

Accumulator Pattern

Var = $\langle \text{start} \rangle$ # initialize variable

for i in range($\langle \text{int} \rangle$):

Var = Var $\langle \text{change} \rangle$ # update
#2 #1 # reassign

+
*
/
-

Accumulator pattern with strings

`cs21/practice/stretch.py`

String accumulator practice: **username.py** (with a *new* partner!)

Finish early?

- `practice/telephone.py`

- 1) `update21`
- 2) `cd cs21/inclass/w03/`
- 3) `atom username.py`
- 4) Complete the program