CSCI-UA-0002

Intro to Computer Programming (No Prior Experience)

Workshop # 5

Professor Emily Zhao

Section 008
T/R 12:30-1:45PM

Section 012
T/R 4:55-6:10PM

Adding variable to your formatting spec string

```
# Problem: I want all names to be right aligned and 15 spaces wide

# Expected Output:
#           Mabel
#            Greg
#             Min
#           Peter

name1 = "Mabel"
name2 = "Greg"
name3 = "Min"
name4 = "Peter"

# Here's how I would hardcode it
print(format(name1, ">15s"))
print(format(name2, ">15s"))
print(format(name3, ">15s"))
print(format(name4, ">15s"))

# How would I implement a variable into my formatting spec instead?
width = 15

# This won't work:
print(format(name1, ">widths"))
```

```
    print(format(name1, ">widths"))
ValueError: Invalid format specifier
```

```
# The answer: concatenation!
# The formatting spec is a string

# Just as we would recreate the following string "October28":
month = "October"
date = 28
date_string = month + str(28)

# We can do the same thing with our formatting spec
width = 15
formatting_spec = ">" + str(width) + "s"

print(format(name1, formatting_spec))
print(format(name2, ">" + str(width) + "s"))

# ^ Both work!
# Output:
#          Mabel
#           Greg
```

for / else

for / else

- **for** loops can also have an **else** clause
- The else clause executes after the loop completes normally.
- This means that the loop did not encounter a break statement.

```
for x in range(1, 4):
    print(x)
else:
    print("Out of the loop")
```

```
1
2
3
Out of the loop
```

for / else

```
for x in range(1, 4):
    print(x)
else:
    print("Out of the loop")
```

```
1
2
3
Out of the loop
```

```
for x in range(1, 4):
    print(x)
    if x == 2:
        break
else:
    print("Out of the loop")
```

```
1
2
```

for / else

```
user_input = "kiwi"

for fruit in ["apple", "banana", "peach"]:
    if fruit == user_input:
        print("Your fruit is in the list!")
        break
else:
    print("We could not find your fruit.")
```

```
We could not find your fruit
```

Can you rewrite your prime number finder using for/else?

```
# Program to check if a number is prime or not

num = 407

# To take input from the user
#num = int(input("Enter a number: "))

# prime numbers are greater than 1
if num > 1:
   # check for factors
   for i in range(2,num):
       if (num % i) == 0:
           print(num,"is not a prime number")
           print(i,"times",num//i,"is",num)
           break
   else:
       print(num,"is a prime number")
```

Midterm Prep Quiz

Homework

- Assignment #5 (due midnight)
- Midterm Prep Quiz
- Start reviewing for the midterm
  - Come to class with questions you might have

Reminder: **TA review session on Friday October, 20th!**