UCSF Intro To Programming

(AKA: Introduction to Computing for Biophysicists / Programming Fundamentals)

Review:

```
print(                    )
```

Review:

```
# Python handles arithmetic operations:
print(2 + 2)   # addition
print(10 - 5)  # subtraction
print(4 * 3)   # multiplication
print(8 / 2)   # division
print(2 ** 3)  # exponentiation (2 raised to the power of 3)
```

Review:

```
#
#
"""


"""
```

Review:

```
num = 10
print("The value of num is:", num)
```

Review:

```
num = 10
print("The value of num is:", num)


num = num * 2
print("Now num is:", num)
```

Review:

```
greeting = "Hello"
name = "Alice"
full_greeting = greeting + ", " + name + "!"
print(full_greeting)
```

Review:

```
text = "Python"
print(text[0])   # First character
print(text[-1])  # Last character
print(text[:3])  # First 3 characters
```

Review:

```
print(text.upper())  # Convert to uppercase
print(text.lower())  # Convert to lowercase
print(text.replace("Python", "Coding"))  # Replace part of the string
```

Review:

```
name = 'Zack'
age = 21
formatted_string = name + ' is ' + str(age)
print(formatted_string)  # Output: Zack is 21
```

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function call	*description*
`str(x)`	*conversion of object x to a string*
`int(x)`	*conversion of string x to an integer or conversion of float x to an integer by truncation towards zero*
`float(x)`	*conversion of string or integer x to a float*

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Review:

```
name = 'Zack'
age = 21
formatted_string = f"{name} is {age} years old."
print(formatted_string)
```

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Review:

```
fruits = ["apple", "banana", "cherry"]
```

Review:

```
fruits = ["apple", "banana", "cherry"]

fruits.append("orange")
```

Review:

```
fruits = ["apple", "banana", "cherry"]

fruits.append("orange")

del fruits[0]
```

Review:

```
fruits = ["apple", "banana", "cherry"]

for fruit in fruits:
    print(fruit)
```

Review:

```
fruits = ["apple", "banana", "cherry"]

for fruit in fruits:
    print(fruit)

# Output:
'''
apple
banana
cherry
'''
```

Review:

```
x = 10
y = 20
print(x == y)  # False
print(x != y)  # True
```

Review:

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y = 20
print(x == y)  # False
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```

Expression	Function
`<`	Less than
`<=`	Less than or equal to
`>`	Greater than
`>=`	Greater than or equal to
`!=`	Not equal to
`==`	Equal to

Review:

```
counter = 0
while counter < 5:
    
```

Review:

```
counter = 0
while counter < 5:
    print(counter)
    counter += 1
```

Review:

```
counter = 0
while counter < 5:
    print(counter)
    counter += 1

# Output:
'''
0
1
2
3
4
'''
```

Review:

```
temperature = 25
if temperature > 30:
    print("It's hot today.")
```

Review:

```
temperature = 25
if temperature > 30:
    print("It's hot today.")
elif temperature < 15:
    print("It's cold today.")
```

Review:

```
with open('example.txt', 'r') as file:
    
```

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```
with open('example.txt', 'r') as file:
    content = file.read()
    print(content)
```

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with open('output.txt', 'w') as file:
    file.write("This is a new file created by Python!")
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with open('example.txt', 'r') as file:
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