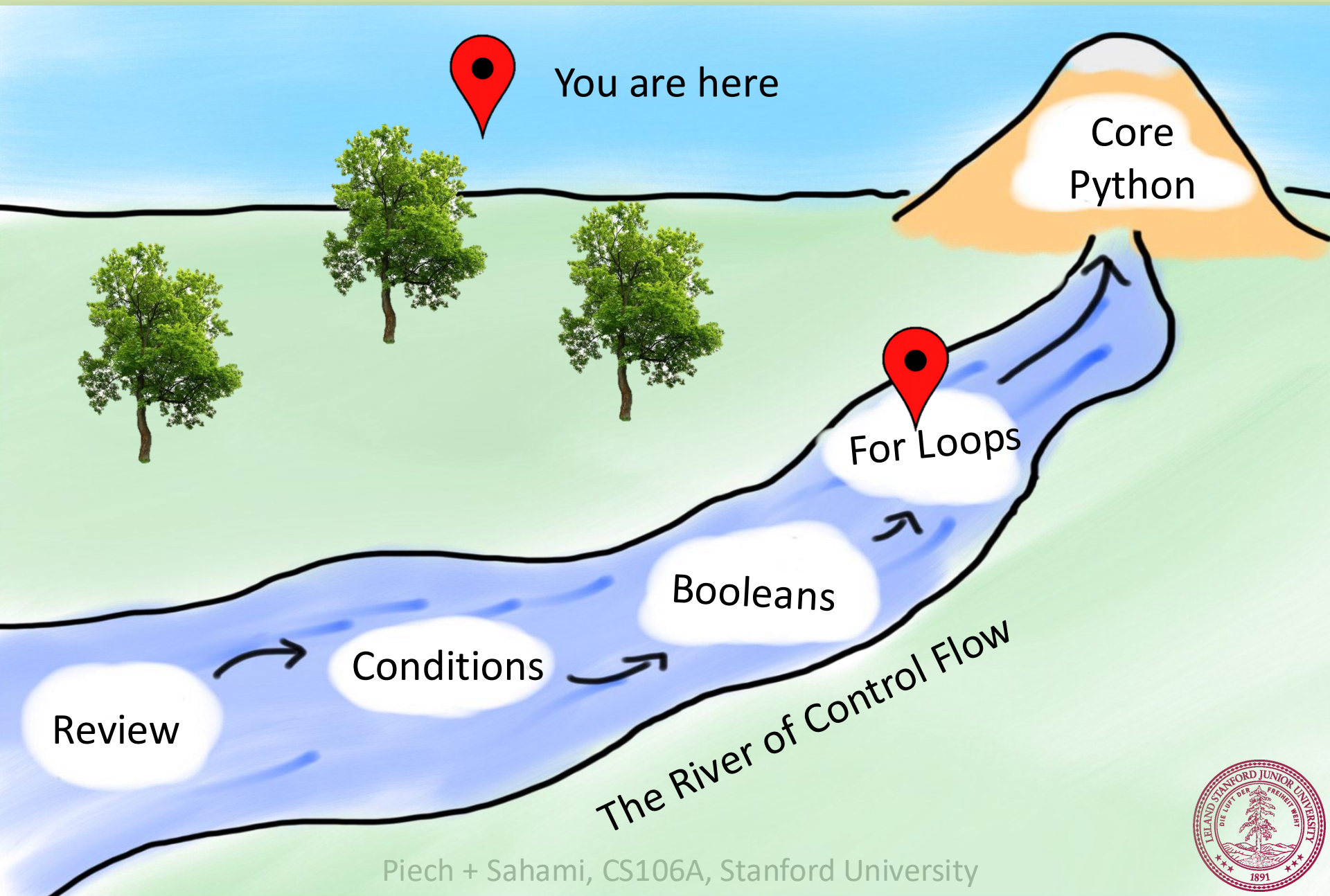




# Control Flow Revisited

Chris Piech and Mehran Sahami  
Stanford University

# Today's Route



How would you print “Python rocks socks”  
100 times

# For Loop Redux

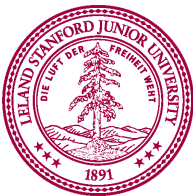
```
def main():  
    for i in range(100):  
        print("Python rocks socks!")
```



# For Loop Redux

```
for i in range(100):  
    print("Python rocks socks!")
```

```
i = 0  
while i < 100:  
    print("Python rocks socks!")  
    i = i + 1
```

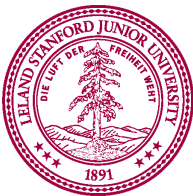


# For Loop Redux

Create a counting  
variable i

Which takes on the  
values 0 to 99 one at  
a time

```
for i in range(100):  
    print("Python rocks socks!")
```

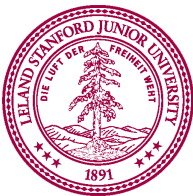
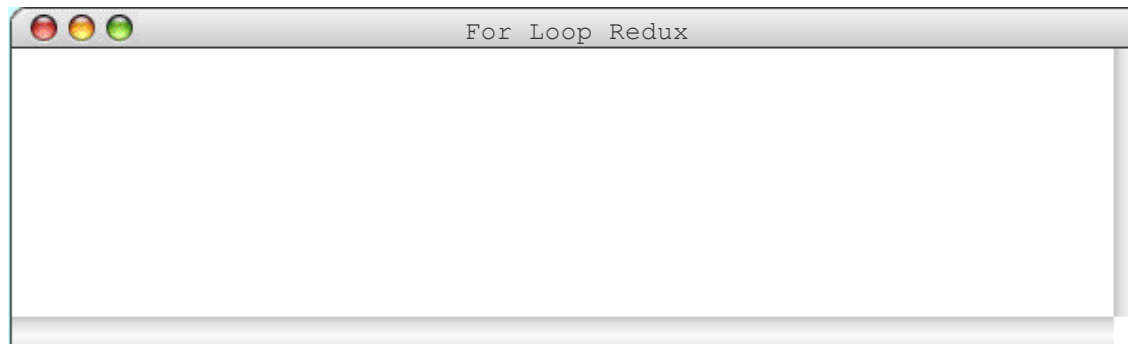




# For Loop Redux

*range(3) -> [0, 1, 2]*

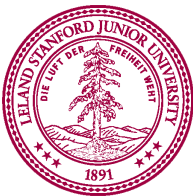
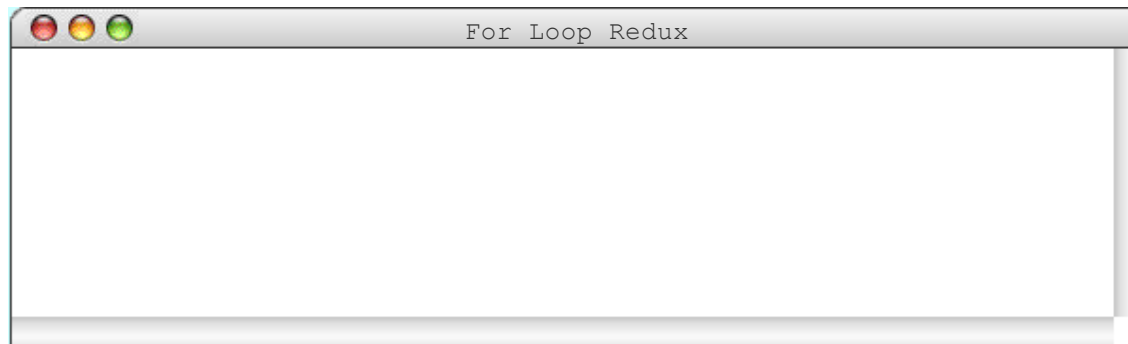
```
for i in range(3):  
    print("Python rocks socks!")
```



# For Loop Redux

*range(3) -> [0, 1, 2]*

```
for i in range(3):  
    print("Python rocks socks!")
```



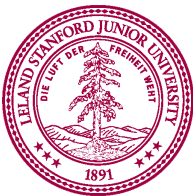
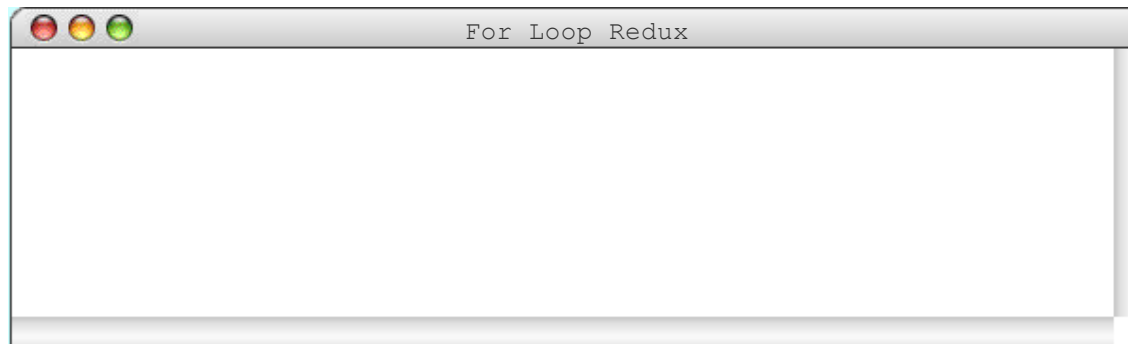


# For Loop Redux

i 0

*range(3) -> [0, 1, 2]*

```
for i in range(3):  
    print("Python rocks socks!")
```



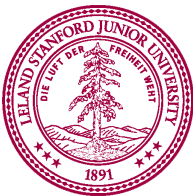
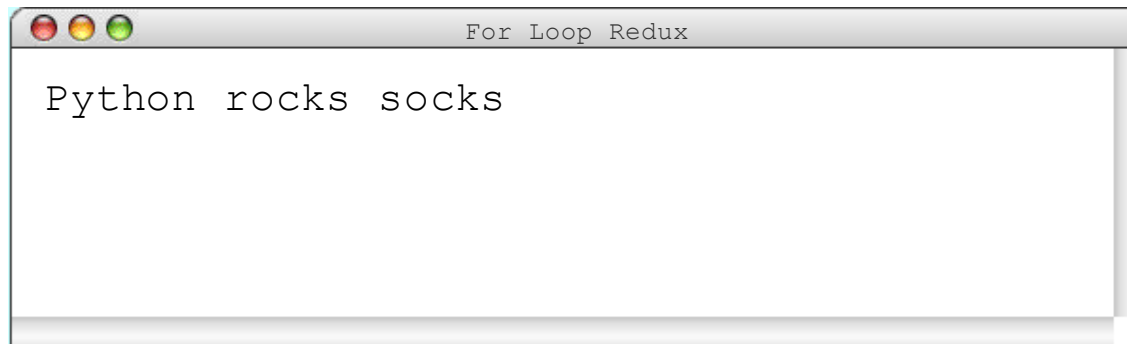
# For Loop Redux

i 0

*range(3) -> [0, 1, 2]*

```
for i in range(3):
```

```
    print("Python rocks socks!")
```

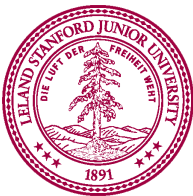
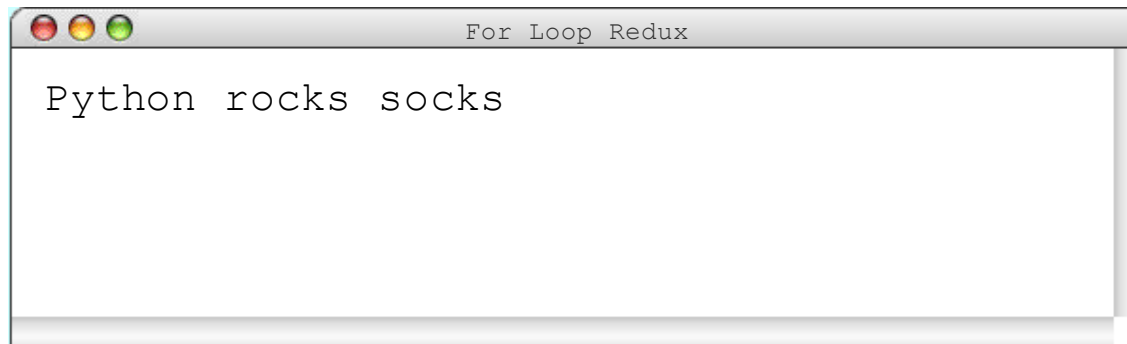


# For Loop Redux

i 0

*range(3) -> [0, 1, 2]*

```
for i in range(3):  
    print("Python rocks socks!")
```

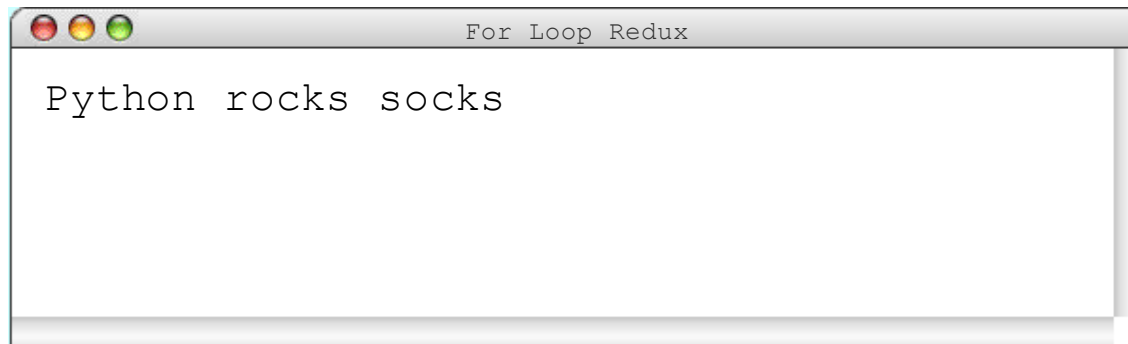


# For Loop Redux

i 1

*range(3) -> [0, 1, 2]*

```
for i in range(3):  
    print("Python rocks socks!")
```



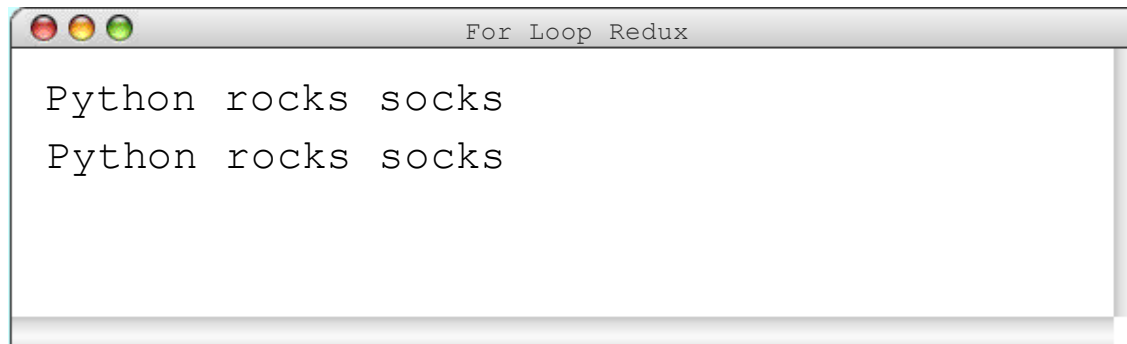
# For Loop Redux

i     1

*range(3) -> [0, 1, 2]*

```
for i in range(3):
```

```
    print("Python rocks socks!")
```



```
For Loop Redux  
Python rocks socks  
Python rocks socks
```

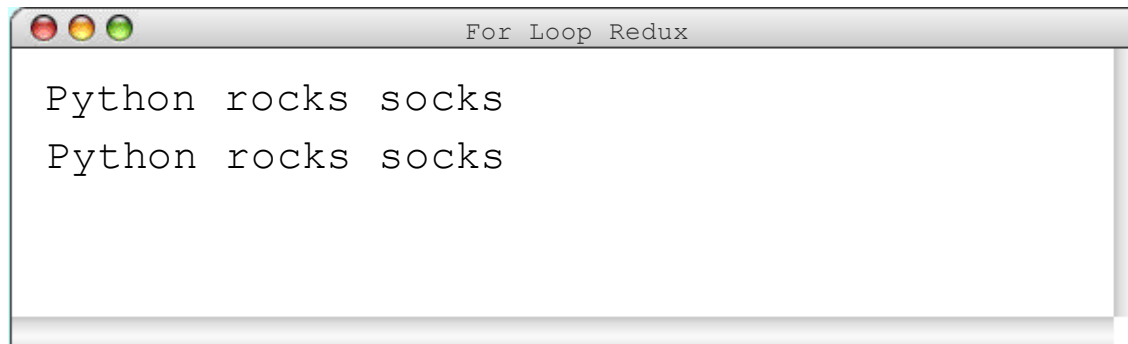


# For Loop Redux

i 1

*range(3) -> [0, 1, 2]*

```
for i in range(3):  
    print("Python rocks socks!")
```

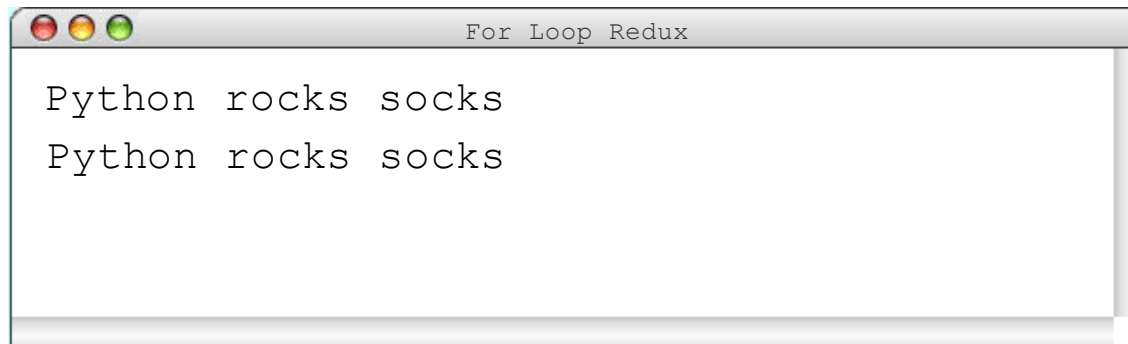


# For Loop Redux

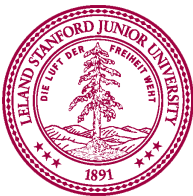
i     2

*range(3) -> [0, 1, 2]*

```
for i in range(3):  
    print("Python rocks socks!")
```



```
For Loop Redux  
  
Python rocks socks  
Python rocks socks
```





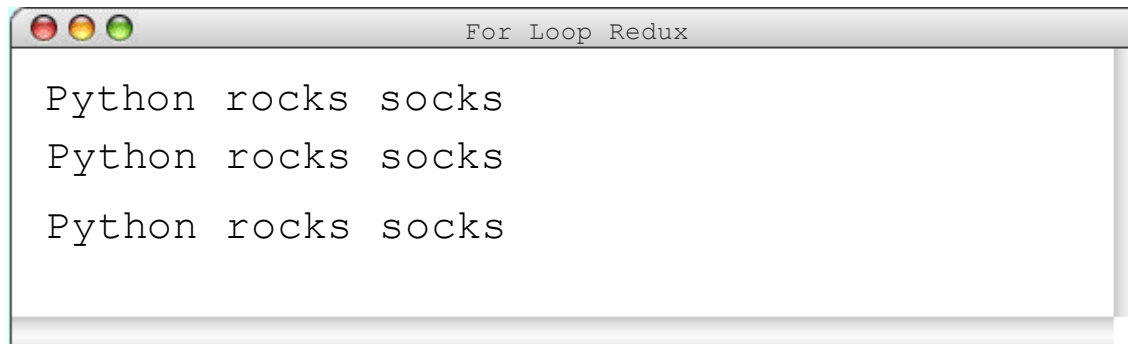
# For Loop Redux

i 2

*range(3) -> [0, 1, 2]*

**for** i **in** range(3):

**print**("Python rocks socks!")



A terminal window titled "For Loop Redux" with three colored window control buttons (red, yellow, green) in the top-left corner. The window contains three lines of text, each on a new line: "Python rocks socks".



# For Loop Redux

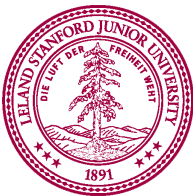
i 2

*range(3) -> [0, 1, 2]*

```
for i in range(3):  
    print("Python rocks socks!")
```



```
For Loop Redux  
  
Python rocks socks  
Python rocks socks  
Python rocks socks
```

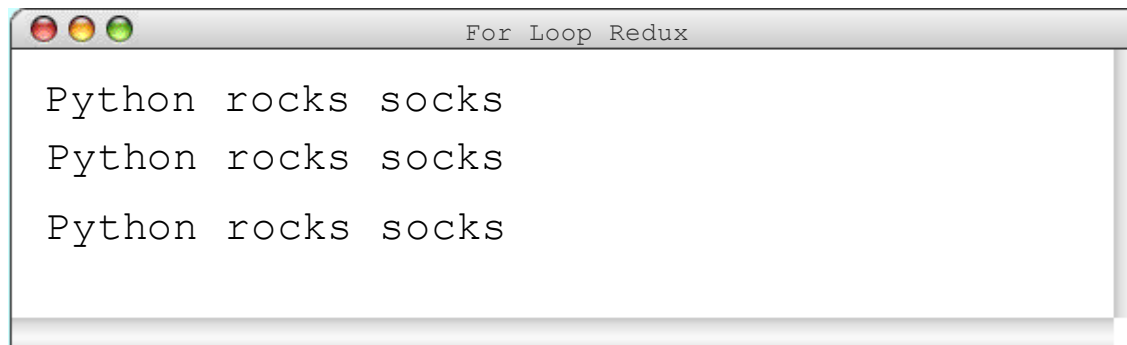


# For Loop Redux

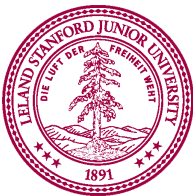
i 3

*range(3) -> [0, 1, 2]*

```
for i in range(3):  
    print("Python rocks socks!")
```



```
For Loop Redux  
  
Python rocks socks  
Python rocks socks  
Python rocks socks
```

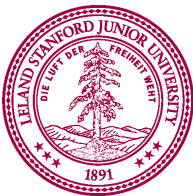
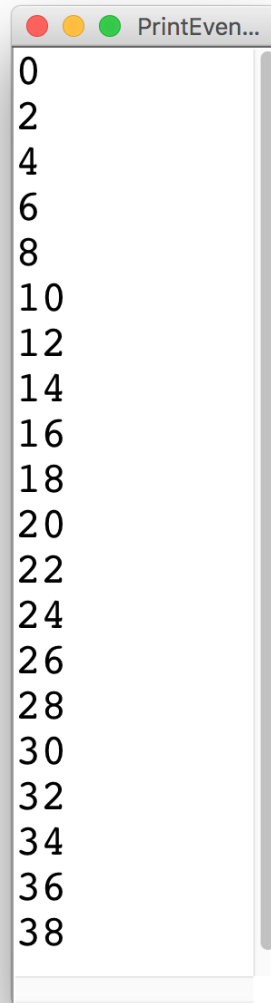


# You can use the for loop variable



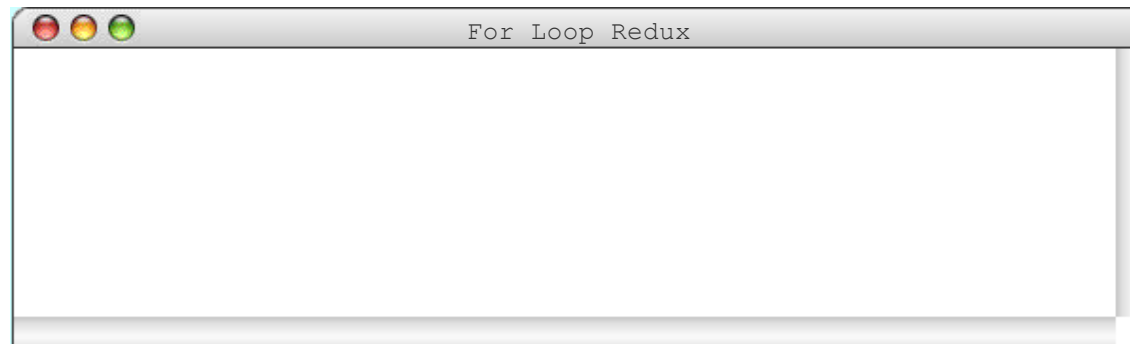
How would you print the first 100 even numbers?

# Printing Even Numbers



# Printing Even Numbers

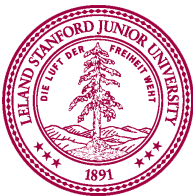
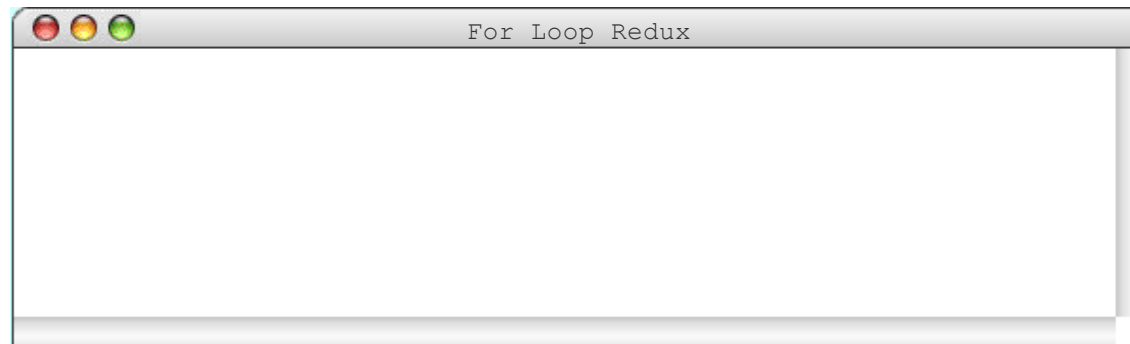
```
for i in range(3):  
    print(i * 2)
```





# Printing Even Numbers

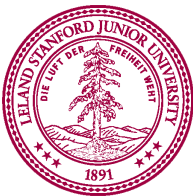
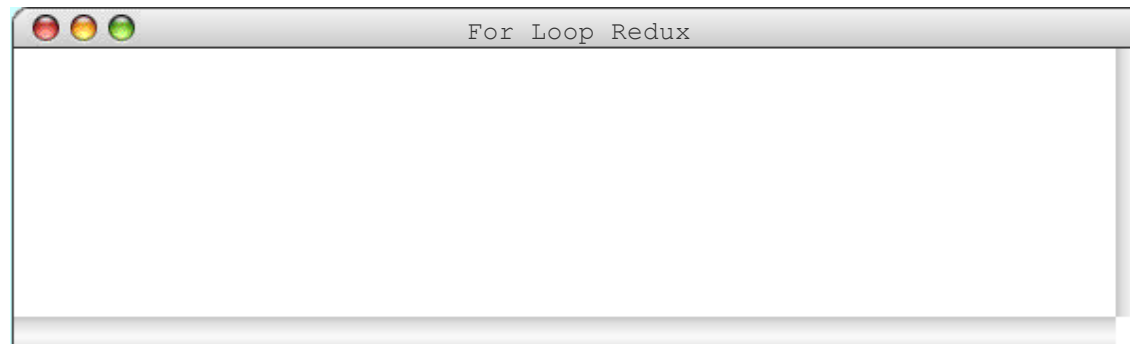
```
for i in range(3):  
    print(i * 2)
```



# Printing Even Numbers

i 0

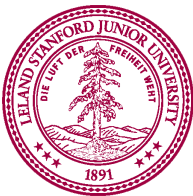
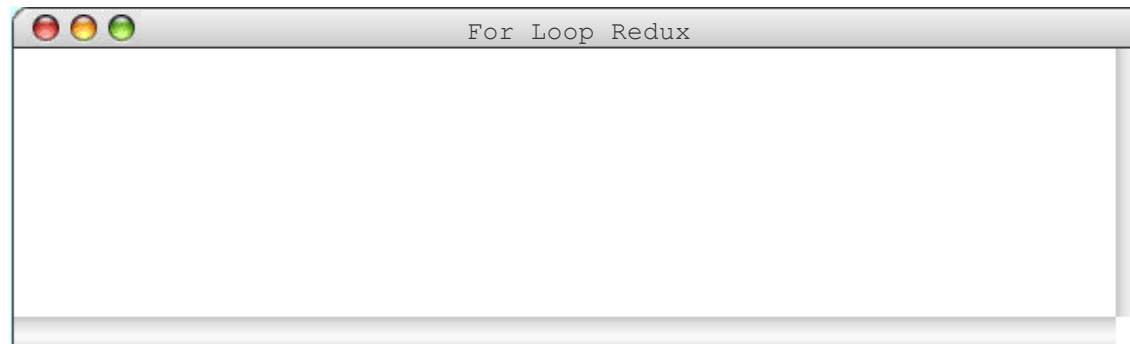
```
for i in range(3):  
    print(i * 2)
```



# Printing Even Numbers

i 0

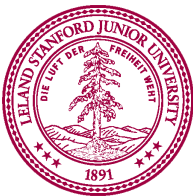
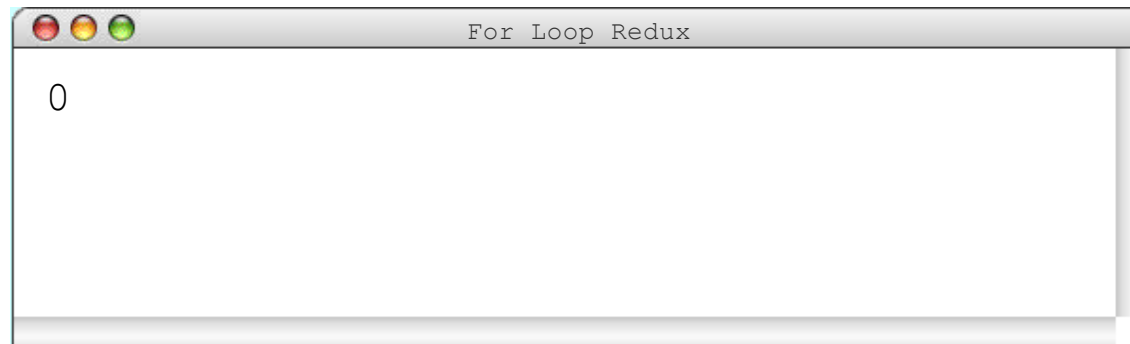
```
for i in range(3):  
    print(i * 2)
```



# Printing Even Numbers

i 0

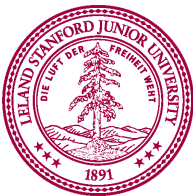
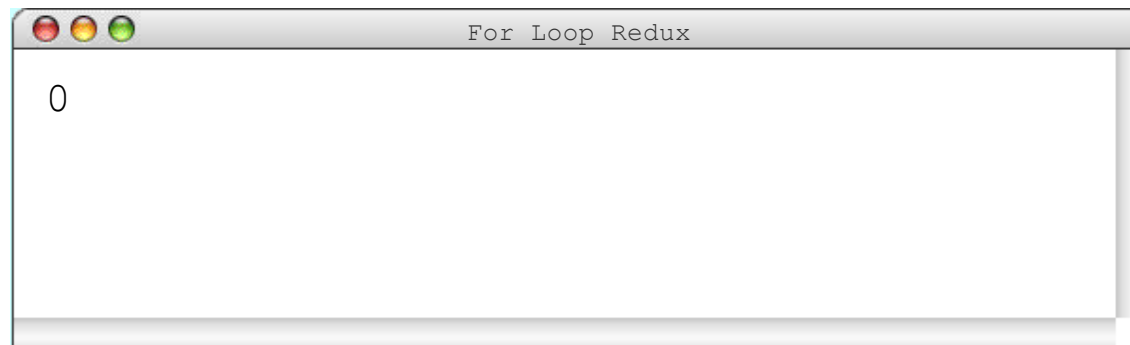
```
for i in range(3):  
    print(i * 2)
```



# Printing Even Numbers

i 1

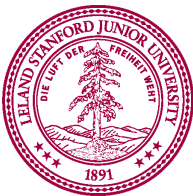
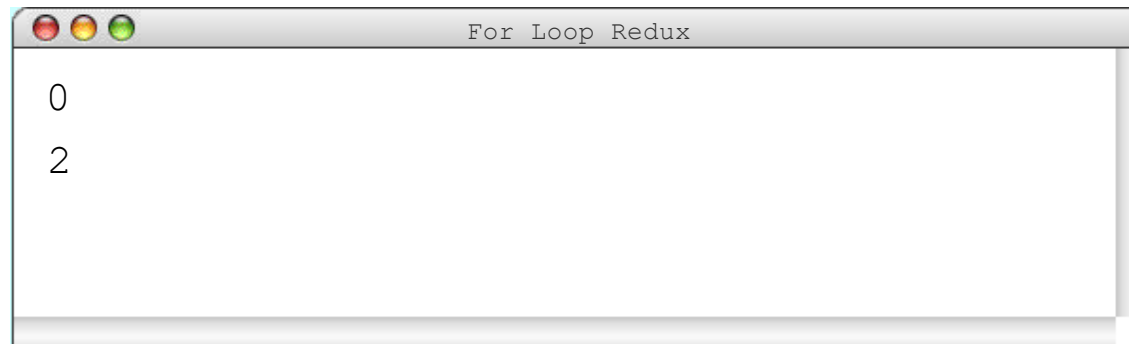
```
for i in range(3):  
    print(i * 2)
```



# Printing Even Numbers

i    1

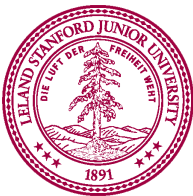
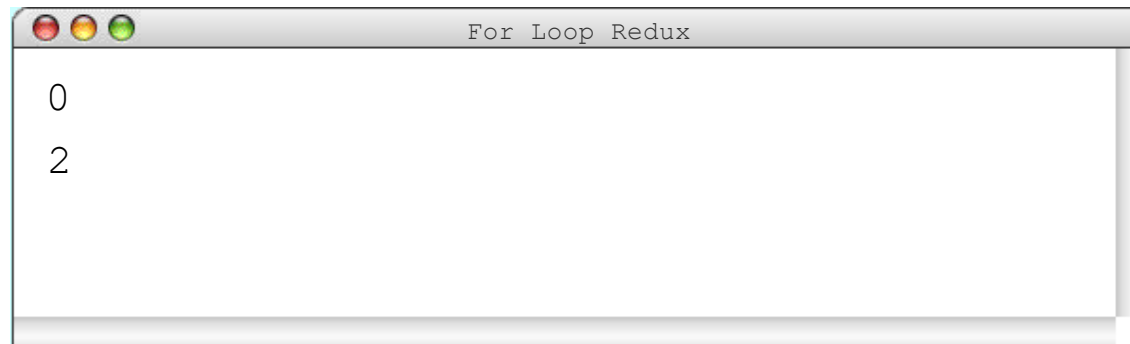
```
for i in range(3):  
    print(i * 2)
```



# Printing Even Numbers

i 2

```
for i in range(3):  
    print(i * 2)
```

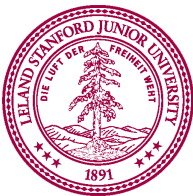
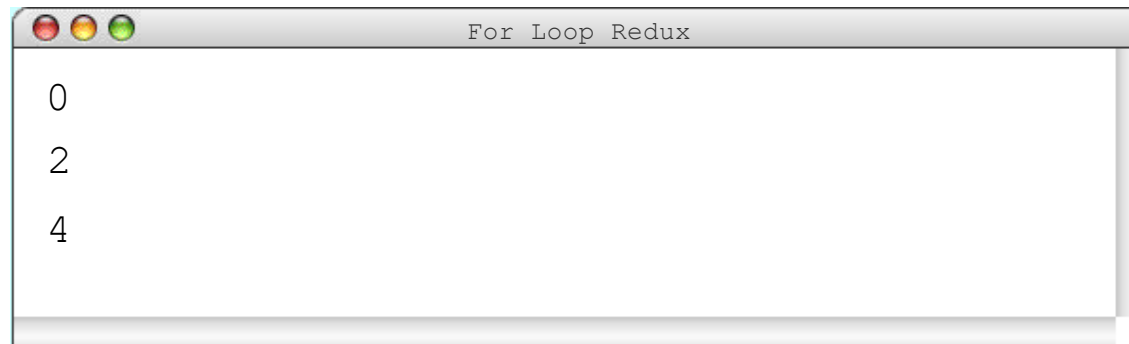




# Printing Even Numbers

i 2

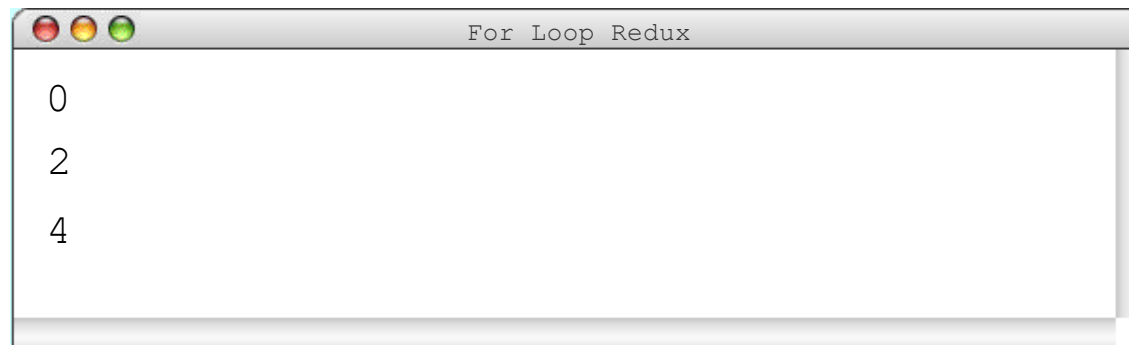
```
for i in range(3):  
    print(i * 2)
```



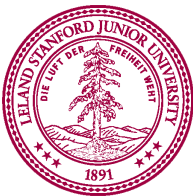
# Printing Even Numbers

i 3

```
for i in range(3):  
    print(i * 2)
```



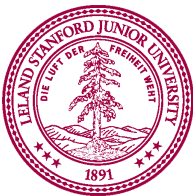
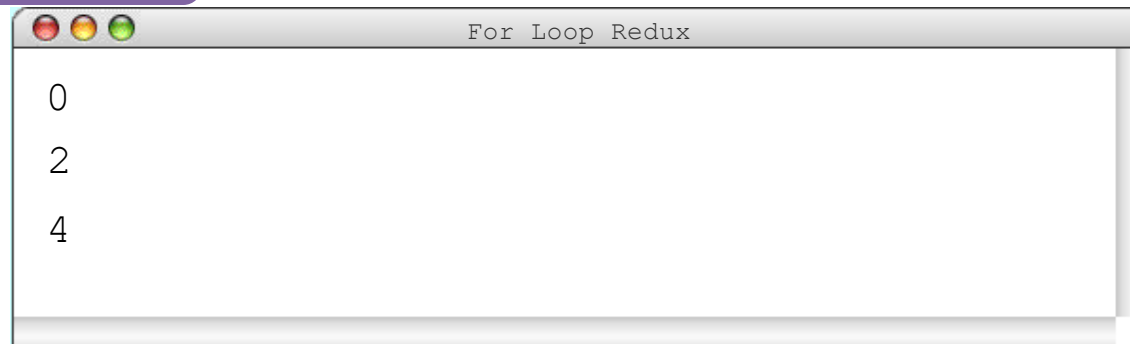
```
For Loop Redux  
0  
2  
4
```



# Printing Even Numbers

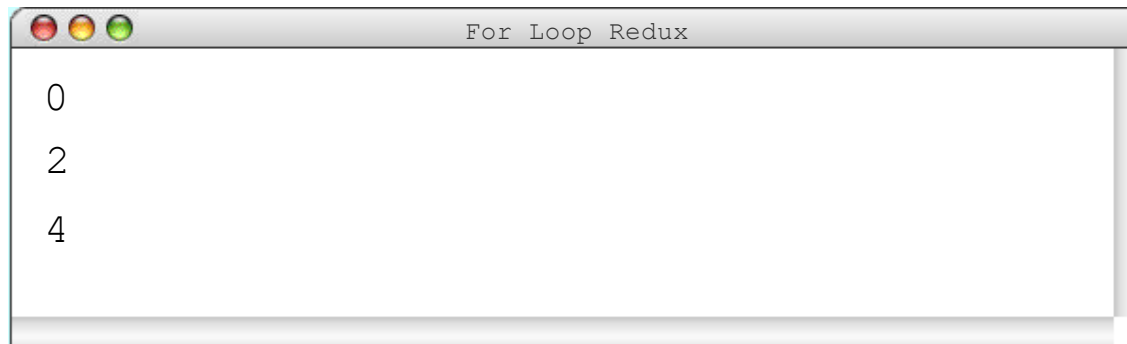
i 3

```
for i in range(3):  
    print(i * 2)
```



# Printing Even Numbers

```
for i in range(3):  
    print(i * 2)
```



A terminal window titled "For Loop Redux" showing the output of the Python code. The output consists of three lines: 0, 2, and 4, each on a new line.

```
0  
2  
4
```



# Printing Even Numbers

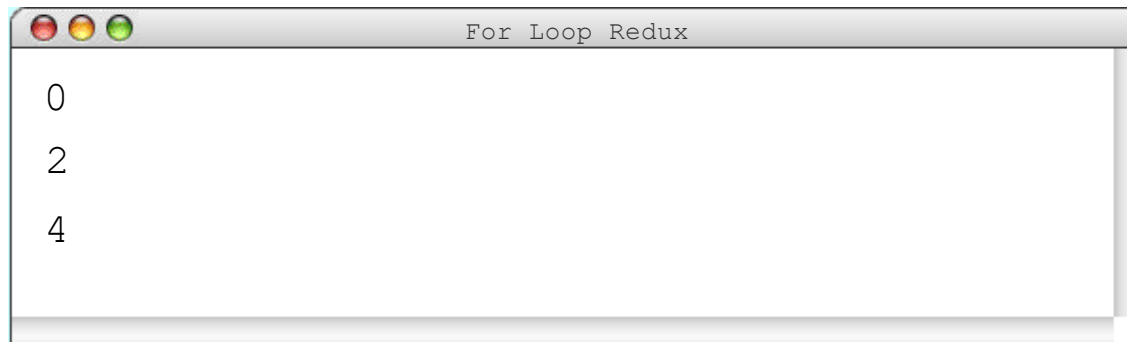
```
# our solution    0,1,2
for i in range(3):
    print(i * 2)
```

```
# equivalently
for i in range(0, 6, 2):
    print(i)
```

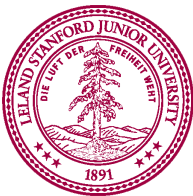
Start at 0

Stop before 6

Skip by 2 each time

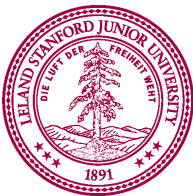


```
For Loop Redux
0
2
4
```

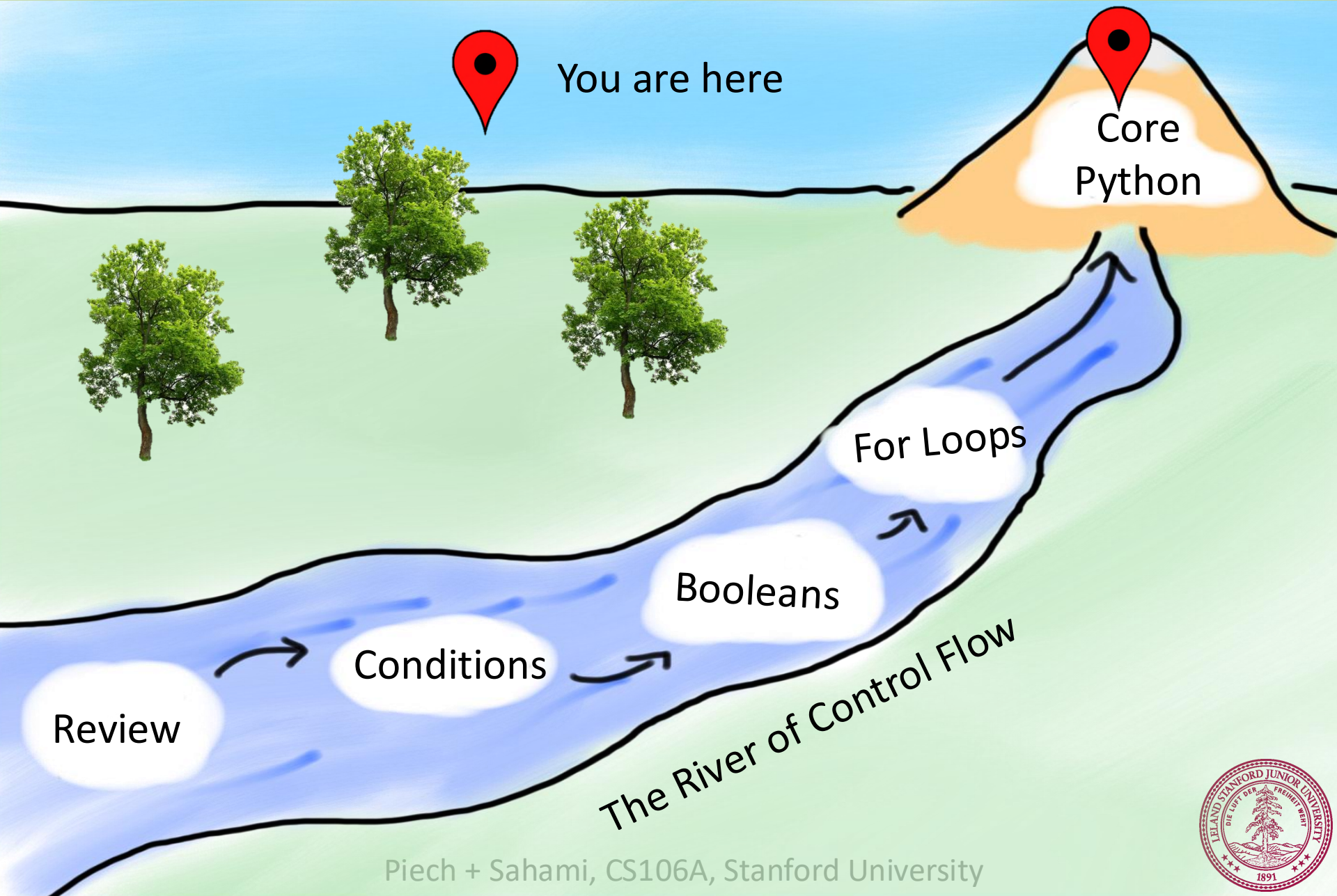


# That's all

```
def main() :  
    for i in range(999999) :  
        print("You rock!")  
        print("Keep learning!")
```



# Today's Route





# Today's Goal

1. Be able to use For / While / If in Python

