

Data Science overview and Introduction to Python (Part I)

Week1

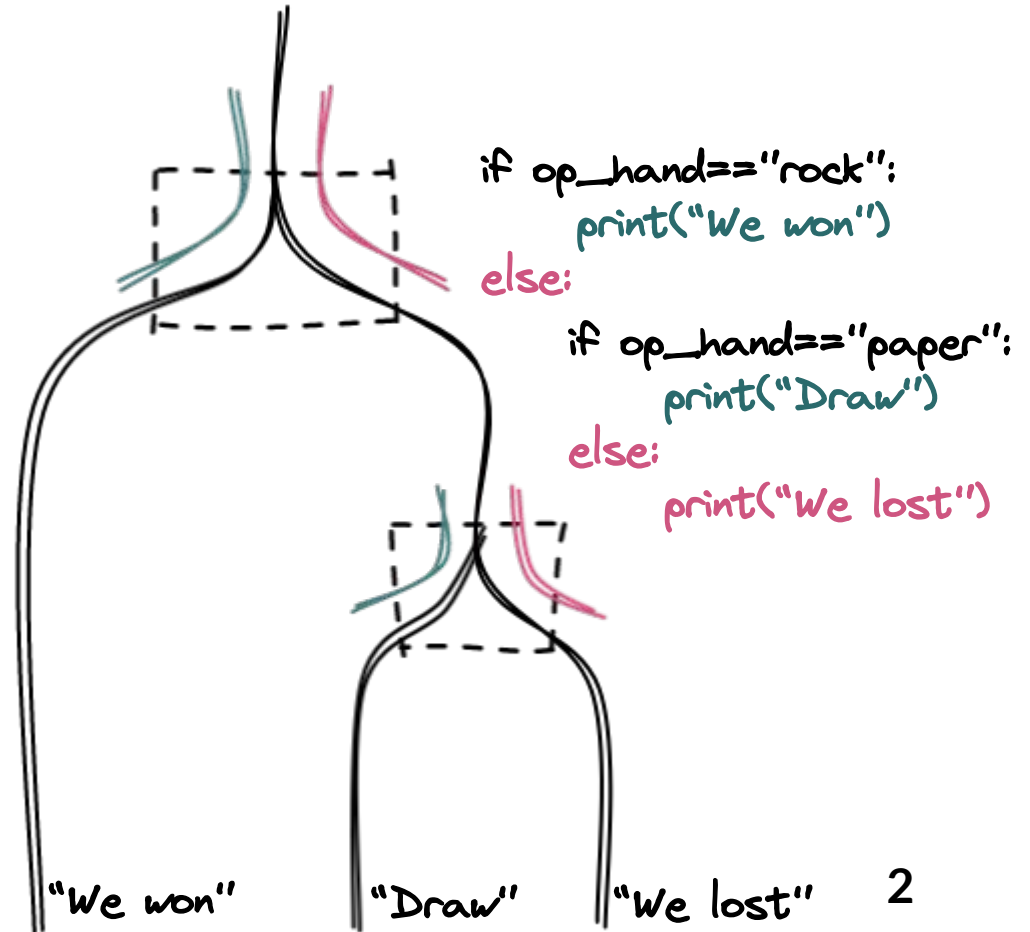
Conditions and Loops

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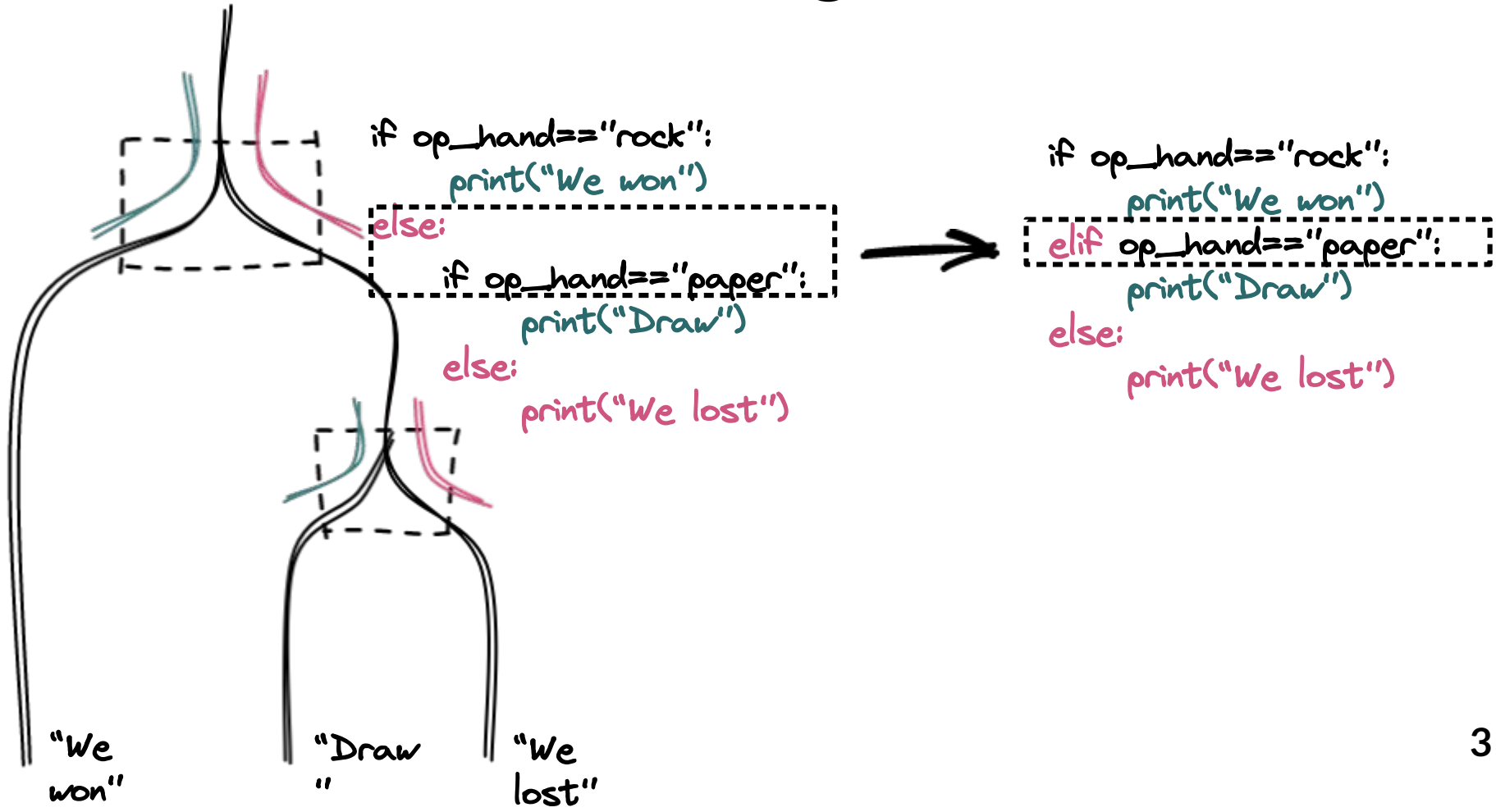
Conditions and Logic

```
if True:
    print('True')           >>>True
if False:
    print('False')         >>>
```

```
my_hand = "paper"
opponents_hand = "paper"
if opponents_hand == "rock":
    print("We won")
elif opponents_hand == "paper":
    print("Draw")           >>>Draw
else:
    print("We lost")
```



Conditions and Logic



Conditions and Logic

```
my_number = 10
if my_number > 5:
    print('number greater than 5')
>>>number greater than 5
if my_number <= 8:
    print('number less or equal to 8')
>>>
```

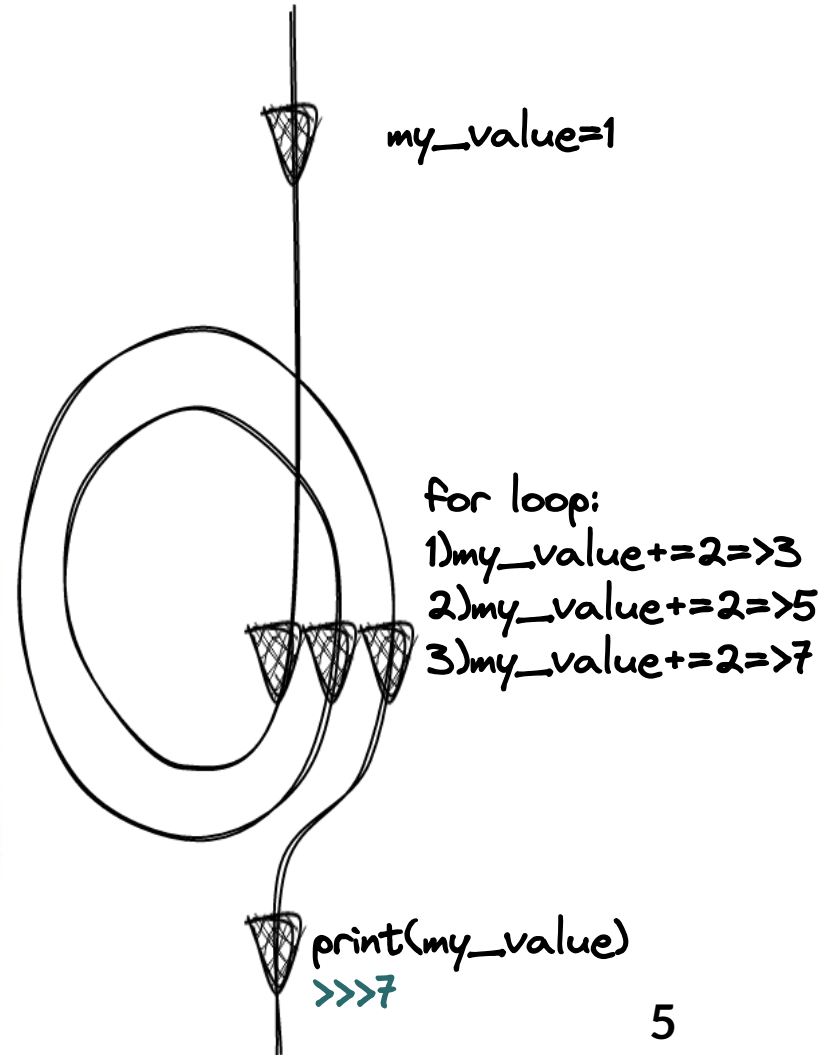
```
my_list = ['green','yellow','red']
color = 'purple'
if color in my_list:
    print(f'{color} is in list')
>>>
```

Equals	==, is
Not Equals	!=, not
Less than	<
Less than or equal to	<=
Greater than	>
Greater than or equal to	>=

Loops: for

```
my_value = 1
for i in range(3):
    my_value += 2
print(my_value)
>>>7
```

```
my_list = ['green','yellow','red']
for idx, color in enumerate(my_list):
    print(idx, color)
>>>0, green
>>>1, yellow
>>>2, red
```



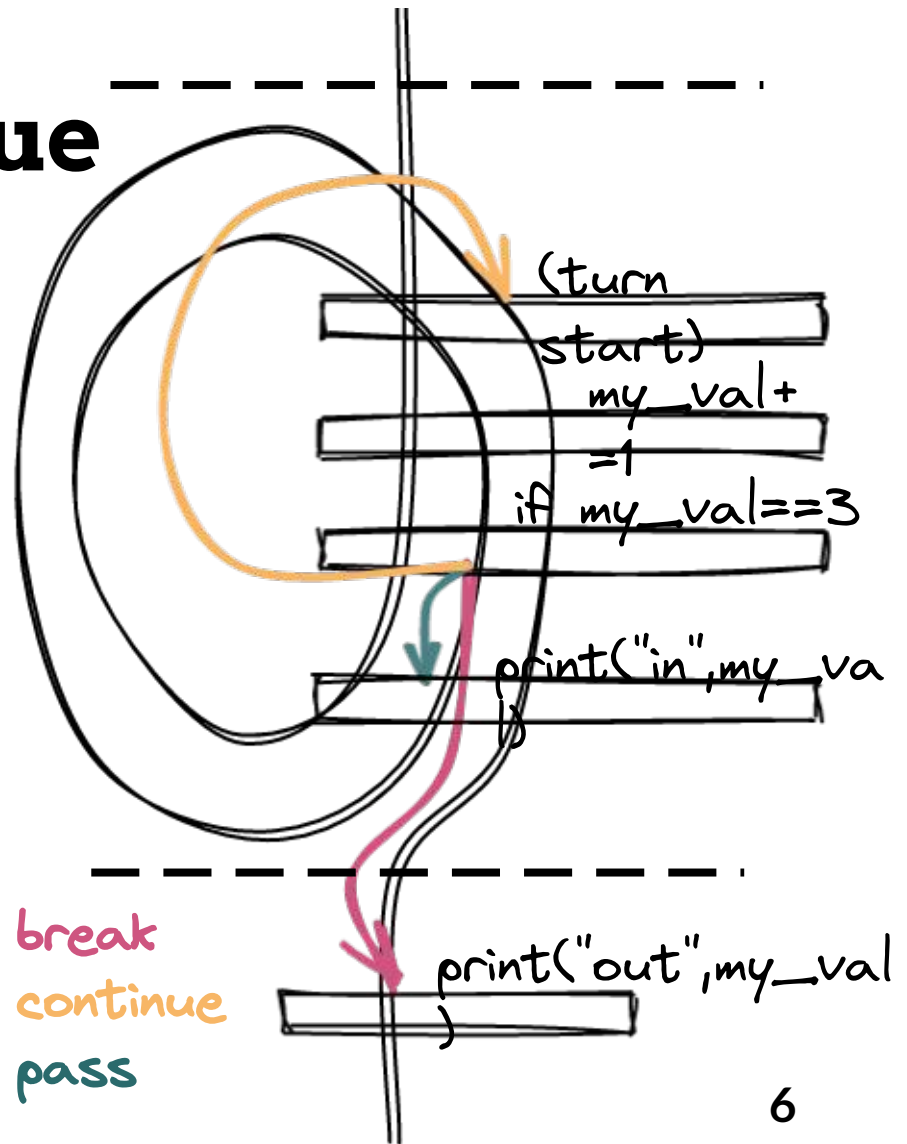
Break, pass, continue

```
my_val = 1
for i in range(3):
    my_val += 1
    if my_val == 3:
        break
    print("in", my_val)
print("out", my_val)
>>>in 2
>>>out 3
```

#pass

```
>>>in 2
>>>in 3
>>>in 4
>>>out
```

```
my_val = 1
for i in range(3):
    my_val += 1
    if my_val == 3:
        continue
    print("in", my_val)
print("out", my_val)
>>>in 2
>>>in 4
>>>out 4
```



For-else

```
my_val = 1
for i in range(3):
    my_val += 1
    if my_val == 3:
        break
    print("in", my_val)
else:
    print("else")
print("out", my_val)
>>>in 2
>>>out 3
```

```
my_val = 1
for i in range(3):
    my_val += 1
    if my_val == 3:
        pass
    print("in", my_val)
else:
    print("else")
print("out", my_val)
>>>in 2
>>>in 3
>>>in 4
>>>else
>>>out 4
```

```
my_val = 1
for i in range(3):
    my_val += 1
    if my_val == 3:
        continue
    print("in", my_val)
else:
    print("else")
print("out", my_val)
>>>in 2
>>>in 4
>>>else
>>>out 4
```


Loops: comprehensions

```
temp_list = []  
for x in range(10):  
    temp_list.append(x **  
2)
```

```
temp_list = [x ** 2 for x in range(10)]
```

```
dict1 = {'a': 1, 'b': 2, 'c': 3, 'd':  
4}  
double_dict1 = {}  
for k,v in dict1.items():
```

```
dict1 = {'a': 1, 'b': 2, 'c': 3, 'd': 4}  
double_dict1 = {k:v*2 for (k,v) in  
dict1.items()}
```

```
double_dict1[k] = v*2  
languages = ['Java', 'Python', 'JS']  
versions = [14, 3, 6]  
result = zip(languages, versions)  
print(list(result))  
>>> [('Java', 14), ('Python', 3), ('JS', 6)]
```


Loops: while

For Loop

Iterate through a certain number of values

While Loop

Will just keep going until condition evaluates to False

```
my_value = 1
while my_value <= 10:
    my_value += 2
    print(my_value)    >>>11
```

```
while True:    #infinite loop
```

