

# A tiny bit more Python

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UW CSE 160

Autumn 2020

# Enumerate a list

```
the_list = [10 ** i for i in range(10)]  
for i in range(len(the_list)):  
    print(str(i) + ': ' + str(the_list[i]))
```

index

value

Or:

```
for index, value in enumerate(the_list):  
    print(str(index) + ': ' + str(value))
```

Like dict.items()

# Enumerate a list

**Goal:** add each element's index itself

```
the_list = list(range(10))
new_list = []
for i, v in enumerate(the_list):
    new_list.append(i + v)
```

With a list comprehension:

```
the_list = list(range(10))
new_list = [i + v for i, v in enumerate(the_list)]
```

# Ternary Assignment

A common pattern in python

```
if x > threshold:  
    flag = "Over"  
else:  
    flag = "Under"
```

Or

```
flag = "Under"  
if x > threshold:  
    flag = "Over"
```

# Ternary Assignment

A common pattern in python

```
if x > threshold:  
    flag = "Over"  
else:  
    flag = "Under"
```

With a ternary expression:

```
flag = "Over" if x > threshold else "Under"
```

Ternary Expression  
"Three elements"

# Ternary Assignment

```
flag = "Over" if x > threshold else "Under"
```

Result if true                      Condition                      Result if false

The diagram shows the code `flag = "Over" if x > threshold else "Under"`. Three blue brackets are used to identify parts of the code: one under "Over", one under `if x > threshold`, and one under "Under". Below each bracket is a label: "Result if true", "Condition", and "Result if false" respectively.

- Only works for single expressions as results.
- Only works for if and else (no elif)

# Ternary Assignment

Goal: A list of 'odd' or 'even' if that index is odd or even.

```
the_list = []
for i in range(16):
    if i % 2 == 0:
        the_list.append('even')
    else:
        the_list.append('odd')
```

or

```
the_list = []
for i in range(16):
    the_list.append('even' if i % 2 == 0 else 'odd')
```

# Ternary Assignment

Goal: A list of 'odd' or 'even' if that index is odd or even.

```
the_list = []
for i in range(16):
    if i % 2 == 0:
        the_list.append('even')
    else:
        the_list.append('odd')
```

Or with a list comprehension!

```
the_list = ['even' if i % 2 == 0 else 'odd' for i in range(16)]
```

# Get more practice

## List Comprehensions:

```
[(x, y) for x in seq1 for y in seq2 if  
        sim(x, y) > threshold]
```

## Enumerate:

```
for index, value in enumerate(seq):  
    ...
```

## Ternary If Statement:

```
flag = "Over" if x > threshold else "Under"
```