CITU Framework

Create, Iterate, Test, Update

Credits: First learnt from Hackwagon Academy

CITU Framework

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

```
['Thu', 'Fri']
```

EXPLANATION

Hopefully this helps in understanding the CITU framework!

The format of the slides has slightly changed to focus on what gets appended to the results container!

Now let's go through each step of the CITU framework!

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CITU Framework

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

[ ]

EXPLANATION

The first step of the CITU framework is Create!

An empty list is created and saved in the variable *results_container*

CITU Framework

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

[ ]

EXPLANATION

The second step of the CITU framework is Iterate. Since we are iterating over two lists, we will be using index-based looping.

Let's go through each iteration and include the index numbers again to better visualise what happens.

CITU Framework (Iter #1)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

[ ]

EXPLANATION

In the first iteration, day takes on the 0th index of *day_list* ('Mon') while temperature takes on the 0th index of *temperature_list* (35).

Let's replace temperature and day by the values in the lists.

CITU Framework (Iter #1)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if 35 > 37:
        results_container.append('Mon')
```

RESULTS CONTAINER

[ ]

EXPLANATION

The next step in the CITU framework is Test. As highlighted in the red box, since 35 is less than 37, the condition returns False. Therefore, the code under the if condition does not run, and nothing is appended to *results_container*.

Let's go to the next iteration!

CITU Framework (Iter #2)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

[ ]

EXPLANATION

In the second iteration, day takes on the 1st index of *day_list* ('Tue') while temperature takes on the 1st index of *temperature_list* (36).

Let's replace temperature and day by the values in the lists.

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CITU Framework (Iter #2)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if 36 > 37:
        results_container.append('Tue')
```

RESULTS CONTAINER

[ ]

EXPLANATION

Since 36 is less than 37, the condition returns False. Therefore, the code under the if condition does not run, and nothing is appended to *results_container*.

Let's go to the next iteration!

CITU Framework (Iter #3)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

[ ]

EXPLANATION

In the third iteration, day takes on the 2nd index of *day_list* (`'Wed'`) while temperature takes on the 2nd index of *temperature_list* (`35.5`).

Let's replace temperature and day by the values in the lists.

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CITU Framework (Iter #3)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if 35.5 > 37:
        results_container.append('Wed')
```

RESULTS CONTAINER

[ ]

EXPLANATION

Since 35.5 is less than 37, the condition returns False. Therefore, the code under the if condition does not run, and nothing is appended to *results_container*.

Let's go to the next iteration!

CITU Framework (Iter #4)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

[ ]

EXPLANATION

In the fourth iteration, day takes on the 3rd index of *day_list* ('Thu') while temperature takes on the 3rd index of *temperature_list* (37.8).

Let's replace temperature and day by the values in the lists.

CITU Framework (Iter #4)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if 37.8 > 37:
        results_container.append('Thu')
```

RESULTS CONTAINER

```
['Thu']
```

EXPLANATION

Since 37.8 is more than 37, the condition returns True.

This brings us to the last step of the CITU framework, Update. The code under the if condition runs, and `'Thu'` is appended to *results_container*.

Let's go to the next iteration!

CITU Framework (Iter #5)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

```
['Thu']
```

EXPLANATION

In the fifth iteration, day takes on the 4th index of *day_list* (`'Fri'`) while temperature takes on the 4th index of *temperature_list* (`38`).

Let's replace temperature and day by the values in the lists.

CITU Framework (Iter #5)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if 38 > 37:
        results_container.append('Fri')
```

RESULTS CONTAINER

```
['Thu','Fri']
```

EXPLANATION

Since 38 is more than 37, the condition returns True. Therefore, the code under the if condition runs, and `'Fri'` is appended to *results_container*.

Let's go to the next iteration!

CITU Framework (Iter #6)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

```
['Thu','Fri']
```

EXPLANATION

In the sixth iteration, day takes on the 5th index of *day_list* (`'Sat'`) while temperature takes on the 5th index of *temperature_list* (35).

Let's replace temperature and day by the values in the lists.

CITU Framework (Iter #6)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if 35 > 37:
        results_container.append('Sat')
```

RESULTS CONTAINER

```
['Thu','Fri']
```

EXPLANATION

Since 35 is less than 37, the condition returns False. Therefore, the code under the if condition does not run, and nothing is appended to *results_container*.

Let's go to the next iteration!

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CITU Framework (Iter #7)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if temperature > 37:
        results_container.append(day)
```

RESULTS CONTAINER

```
['Thu','Fri']
```

EXPLANATION

In the seventh iteration, day takes on the 7th index of *day_list* ('Sun') while temperature takes on the 7th index of *temperature_list* (36).

Let's replace temperature and day by the values in the lists.

CITU Framework (Iter #7)

```
day_list = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
temperature_list = [35, 36, 35.5, 37.8, 38, 35, 36]

results_container = []
for i in range(len(day_list)):
    day = day_list[i]
    temperature = temperature_list[i]
    if 36 > 37:
        results_container.append('Sun')
```

RESULTS CONTAINER

```
['Thu','Fri']
```

EXPLANATION

Since 36 is less than 37, the condition returns False. Therefore, the code under the if condition does not run, and nothing is appended to *results_container*.

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