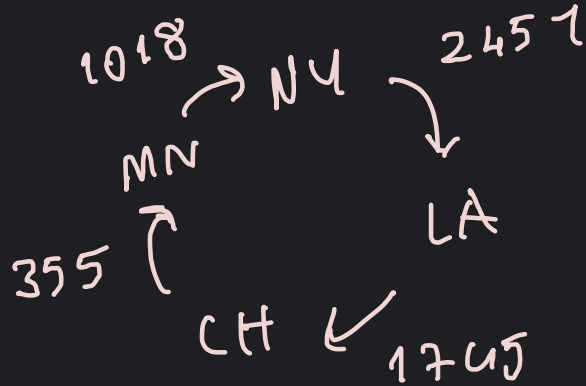


Week 1 - CIFO - Practical Class Notes

```
# one dim. list to keep the city names
cities = ["New York", "Los Angeles", "Chicago", "Minneapolis"]
# two dim. list to keep the distance matrix
distance_matrix = [
    NY [0, 2451, 713, 1018],
    LA [2451, 0, 1745, 1524],
    CH [713, 1745, 0, 355],
    MN [1018, 1524, 355, 0]]
```



```
from data import cities, distance_matrix
# from random import shuffle
```

```
# function to calculate the distance of a circular path
```

```
usage
```

```
def distance(path):
```

```
    total = 0
```

```
    for i in range(len(path)):
```

```
        # starting from the distance bw the last city and the first
```

```
        total += distance_matrix[path[i-1]][path[i]]
```

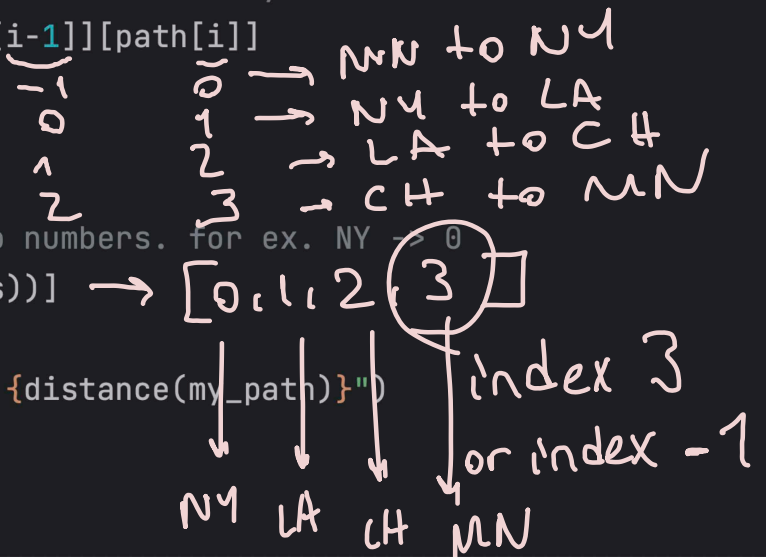
```
    return total
```

```
# turning the names of the cities into numbers. for ex. NY -> 0
```

```
my_path = [i for i in range(len(cities))] → [0, 1, 2, 3]
```

```
# shuffle(my_path)
```

```
print(f"My tour: {my_path}, distance: {distance(my_path)}")
```



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