

## datascience\_assignment\_3.2

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### 0.1 List comprehension to produce the list ['A', 'C', 'D', 'G', 'I', 'L', 'D']

```
In [25]: input_string = "AcadGild"
        list1 = [input_string[i].upper() for i in range(len(input_string)) ]
        print(list1)
```

```
['A', 'C', 'A', 'D', 'G', 'I', 'L', 'D']
```

### 0.2 List comprehension to produce the list ['x', 'xx', 'xxx', 'xxxx', 'y', 'yy', 'yyy', 'yyyy', 'z', 'zz', 'zzz', 'zzzz']

```
In [26]: input_string_list = ['x', 'y', 'z']
        repeat_count = 4
        list2 = [input_string_list[i] * (j+1) for i in range(len(input_string_list)) for j in range(repeat_count)]
        print(list2)
```

```
['x', 'xx', 'xxx', 'xxxx', 'y', 'yy', 'yyy', 'yyyy', 'z', 'zz', 'zzz', 'zzzz']
```

### 0.3 List comprehension to produce the list ['x', 'y', 'z', 'xx', 'yy', 'zz', 'xxx', 'yyy', 'zzz', 'xxxx', 'yyyy', 'zzzz']

```
In [27]: input_string_list = ['x', 'y', 'z']
        repeat_count = 4
        list3 = [input_string_list[i] * (j+1) for j in range(repeat_count) for i in range(len(input_string_list))]
        print(list3)
```

```
['x', 'y', 'z', 'xx', 'yy', 'zz', 'xxx', 'yyy', 'zzz', 'xxxx', 'yyyy', 'zzzz']
```

### 0.4 List comprehension to produce the list [[2],[3],[4],[3],[4],[5],[4],[5],[6]]

```
In [29]: start_num = 2
        repeat_count = 3
        max_offset = 3
        list4 = [[start_num + i + j ] for j in range(max_offset) for i in range(repeat_count)]
        print(list4)
```

```
[[2], [3], [4], [3], [4], [5], [4], [5], [6]]
```

#### 0.4.1 List comprehension to produce the list [[2, 3, 4, 5], [3, 4, 5, 6], [4, 5, 6, 7], [5, 6, 7, 8]]

```
In [14]: start_num = 2
        repeat_count = 4
        max_offset = 4
        list5 = [[start_num + i + j for j in range(max_offset)] for i in range(repeat_count)]
        print(list5)
```

```
[[2, 3, 4, 5], [3, 4, 5, 6], [4, 5, 6, 7], [5, 6, 7, 8]]
```

#### 0.5 List comprehension to produce the list [(1, 1), (2, 1), (3, 1), (1, 2), (2, 2), (3, 2), (1, 3), (2, 3), (3, 3)]

```
In [30]: max_count = 3
        list6 = [(j+1,i+1) for i in range(max_count) for j in range(max_count) ]
        print(list6)
```

```
[(1, 1), (2, 1), (3, 1), (1, 2), (2, 2), (3, 2), (1, 3), (2, 3), (3, 3)]
```