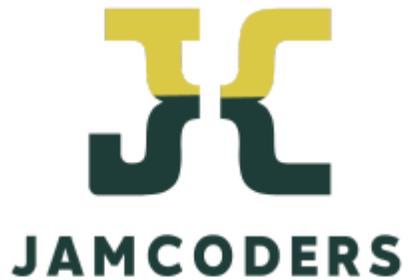




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OR**



Dr. Gunjan Mansingh
Department of Computing
UWI
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Week 2 - Day 1, Session 2

Lists Comprehension

The use of lists in Python is a major part of its power.

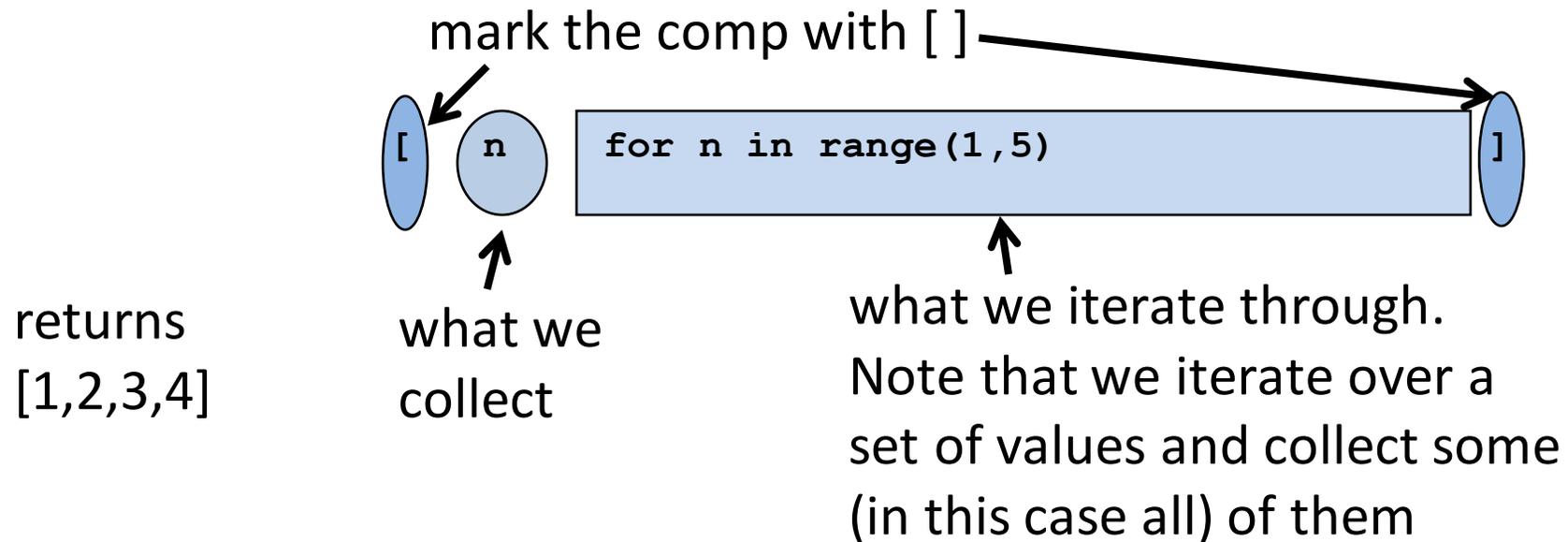
Lists are very useful and can be used to accomplish many tasks.

Therefore Python provides some pretty powerful support to make common list tasks easier.

Constructing Lists

One way is a “list comprehension”

```
[n for n in range(1,5)]
```



Modifying What We Collect

```
[ n**2 for n in range(1,6)]
```

Returns [1,4,9,16,25].

Note that we can only change the values we are iterating over, in this case n.

Multiple Collects

`[(x,y) for x in range(1,4) for y in range (1,4)]`

`=>`

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

`[x+y for x in range(1,4) for y in range (1,4)]`

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

Modifying what gets collected

```
[x for x in range(1,30) if x%2==0]
```

- The “if” part of the comprehensive controls which of the iterated values is collected at the end. Only those values which make the if part true will be collected:

```
[2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28]
```