Lists Part -1

GITAA
Transforming careers

In this lecture

- Lists
  - Creating a list
  - Indexing
  - Access components

Lists

Lists

- Generic data structure in Python consisting of an ordered collection of objects

- Objects in a list are also known as elements or components

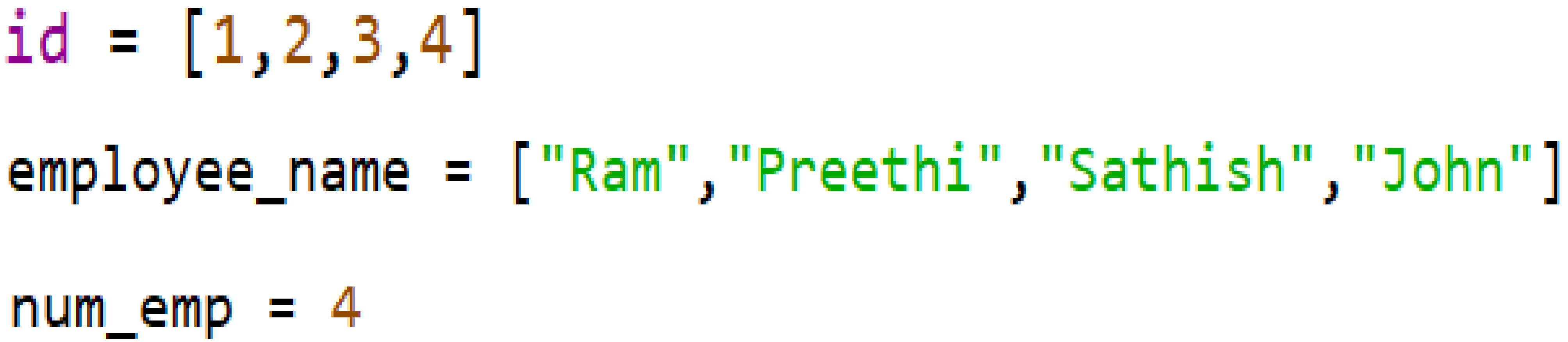
Lists

- Elements of a list need not be of same data type
  - Lists can consist of a numeric array, a logical value, a matrix, a complex vector, a character array, a function etc.

- Enclosed between two square brackets - [ ]

Creating a list

- Create the lists employee id and name
- Create a variable that contains number of employees



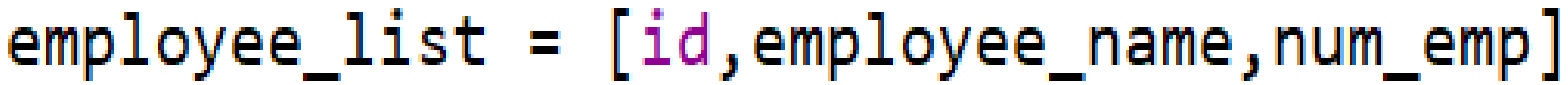
```
id = [1,2,3,4]

employee_name = ["Ram","Preethi","Sathish","John"]

num_emp = 4
```

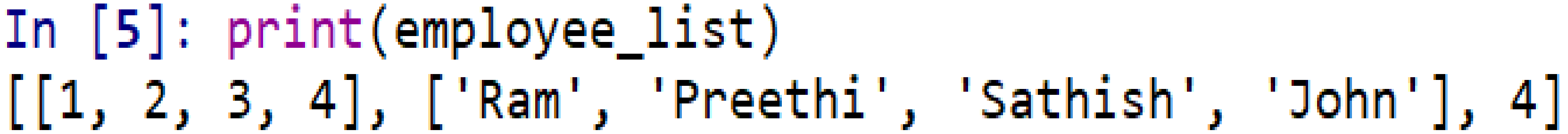
Creating a list

- Create an employee list using employee id, employee name and number of employees



```
employee_list = [id,employee_name,num_emp]
```

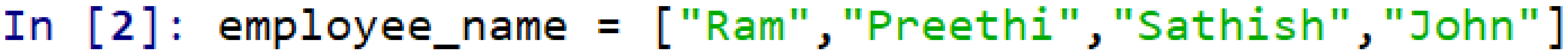
- To view a list



```
In [5]: print(employee_list)
[[1, 2, 3, 4], ['Ram', 'Preethi', 'Sathish', 'John'], 4]
```

Indexing

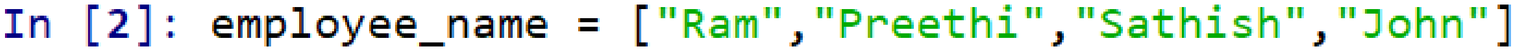
- There are two types of indexing - positive and negative
- Positive indexing
  - Starts from the left most element
  - 0 is the first index
- Consider the following list



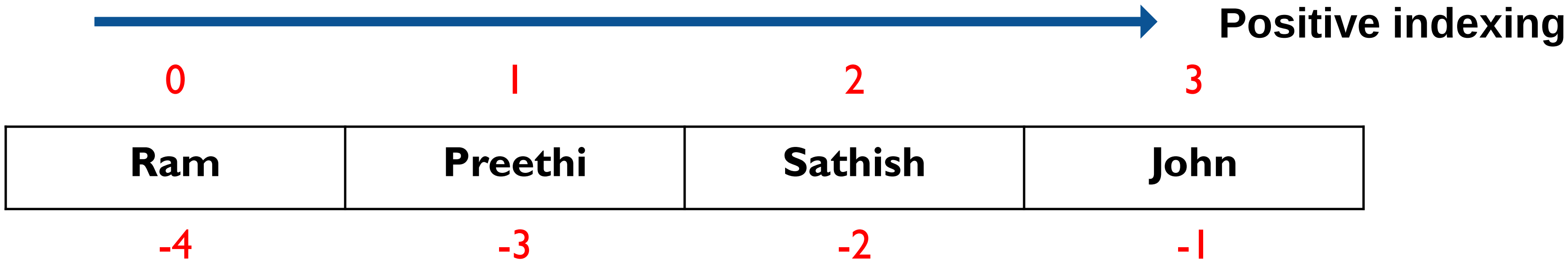
```
In [2]: employee_name = ["Ram","Preethi","Sathish","John"]
```

Indexing

- There are two types of indexing- positive and negative
- Positive indexing
  - Starts from the left most element
  - 0 is the first index
- Consider the following list



```
In [2]: employee_name = ["Ram","Preethi","Sathish","John"]
```

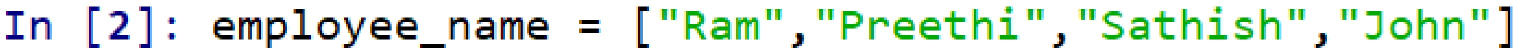


Positive indexing

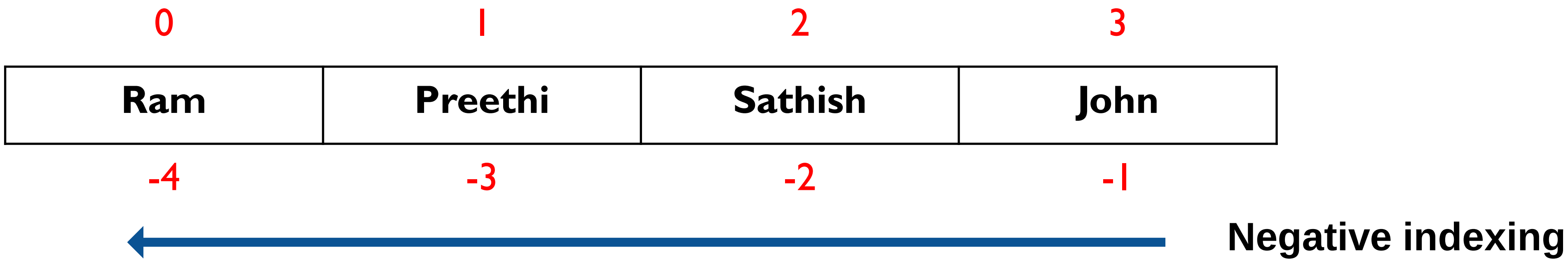
0	1	2	3
Ram	Preethi	Sathish	John
-4	-3	-2	-1

Indexing

- Negative indexing
  - Starts from the right most element
  - -1 is the first index
- Consider the same list



```
In [2]: employee_name = ["Ram","Preethi","Sathish","John"]
```



0	1	2	3
Ram	Preethi	Sathish	John
-4	-3	-2	-1

Negative indexing

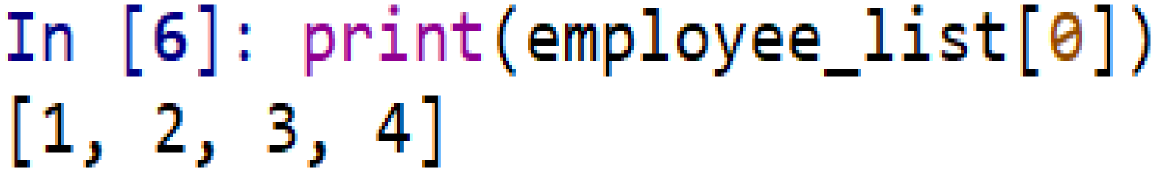
Accessing components of a list

- To access top level components, use single slicing operator "[ ]"

- For sub-level / inner level components use "[ ]" followed by another "[ ]"

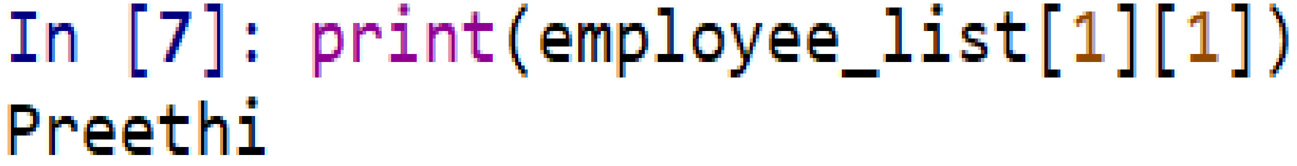
Accessing components of a list

- To extract ***id*** from the ***employee_list***



```
In [6]: print(employee_list[0])
[1, 2, 3, 4]
```

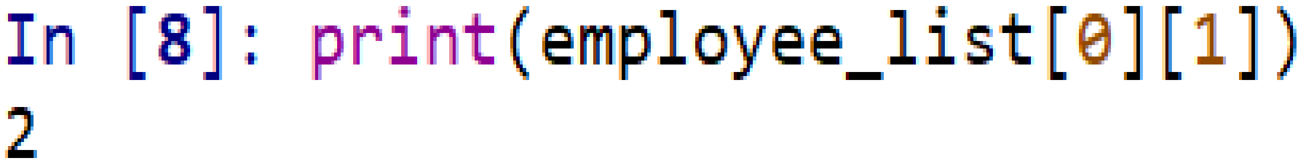
- To extract ‘Preethi’ from the level ***employee_name*** that belongs to ***employee_list***



```
In [7]: print(employee_list[1][1])
Preethi
```

Accessing components of a list

- To extract the second id from the level ***id*** that belongs to ***employee_list***



```
In [8]: print(employee_list[0][1])
2
```

Summary

- Create lists
- Indexing
- Accessing top and sub level components from a list

THANK YOU