



# Python for Data Analytics

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# Scenario

Imagine storing the Marks of all the students of class 10<sup>th</sup> Roll Number wise.

## Variables

Roll\_no\_1 = 45

Roll\_no\_2 = 56

Roll\_no\_3 = 35

.....

.....

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# Scenario

Reasons why Variables are not a good solution to our problem?

1. Large number of Variables for large number of students in class.
2. What is the average marks of the last five students?
3. Marks of the student 3 roll numbers after 45.

List

# List Overview

Topics that we will be covering

1. What is a List?
2. Sub-setting a list
3. Adding elements to an existing List
4. Deleting elements of a List
5. Looping over a list

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# What is a List?

A list is an ordered data structure with elements separated by comma and enclosed within square brackets.

Some examples of List -

```
list1=[2,3,4,5,6]
```

```
list2=['Python','is','Awesome']
```

```
list3=[1,'Python',2,'is',3,'Awesome']
```

Single Data type

Mix Data type

# Sub-setting a List

0    1    2    3    4    5    ← Index

```
list3=[1,'Python',2,'is',3,'Awesome']
```

To extract a single element

`list3[1]`

'Python'

To extract a sequence of elements

`list3[1:4]`

['Python', 2, 'is']

To extract an element using negative index

`list3[-1]`

'Awesome'

# Adding elements to an existing List

```
list3=[1,'Python',2,'is',3,'Awesome']
```

Adding a single element

```
list3.append(4)
```

```
list3
```

```
[1, 'Python', 2, 'is', 3, 'Awesome', 4]
```

```
list3.extend([5,6])
```

```
list3
```

```
[1, 'Python', 2, 'is', 3, 'Awesome', 4, 5, 6]
```

Adding multiple elements

# Adding elements to an existing List

```
list3=[1,'Python',2,'is',3,'Awesome']
```

Adding list to a list

```
list3.append([7,8])
```

```
list3
```

```
[1, 'Python', 2, 'is', 3, 'Awesome', [7, 8]]
```



# Deleting elements of a List

```
list3=[1,'Python',2,'is',3,'Awesome']
```

Deleting an element by value

```
list3.remove(2)
```

```
list3
```

```
[1, 'Python', 'is', 3, 'Awesome']
```

Deleting an element by index

```
del list3[3]
```

```
list3
```

```
[1, 'Python', 2, 3, 'Awesome']
```

# Looping over a List

```
list3=[1,'Python',2,'is',3,'Awesome']
```

Printing each element of a list

```
for i in list3:  
    print(i)
```

```
1  
Python  
2  
is  
3  
Awesome
```

