

Lecture

Mutability





Mutation

“A permanent **change...”**

Source: Cambridge Dictionary



Mutation

Object

- **Mutable**

- Can be changed after it is created.

- **Immutable**

- Can't be changed after it is created.



Mutation

Mutable

- **Lists**
- **Sets**
- **Dictionaries**



Mutation

Immutable

- **Booleans**
- **Integers**
- **Floats**
- **Strings**
- **Tuples**



Mutation

```
>>> a = [7, 2, 5, 1, 8]
>>> a[2] = -5
>>> a
[7, 2, -5, 1, 8]
```



Mutation

```
>>> a = [7, 2, 5, 1, 8]
>>> a[2] = -5
>>> a
[7, 2, -5, 1, 8]
```



Mutation

```
>>> b = (7, 2, 5, 1, 8)
>>> b[2] = -5
Traceback (most recent call last):
  File "<pyshell#19>", line 1, in <module>
    b[2] = -5
TypeError: 'tuple' object does not support item assignment
```




Mutation

```
>>> b = (7, 2, 5, 1, 8)
```

```
>>> b[2] = -5
```

```
Traceback (most recent call last):
```

```
  File "<pyshell#19>", line 1, in <module>
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    b[2] = -5
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Mutation

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Mutation

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```
>>> b[2] = -5
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```
Traceback (most recent call last):
```

```
  File "<pyshell#19>", line 1, in <module>
```

```
    b[2] = -5
```

```
TypeError: 'tuple' object does not support item assignment
```

Immutable

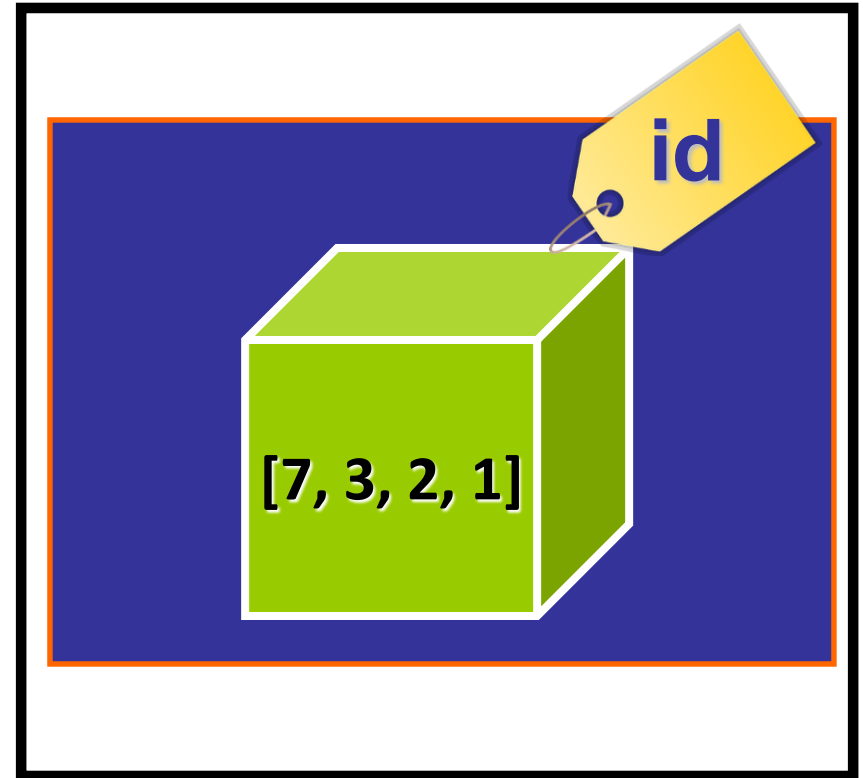




Mutation

```
>>> a = [7, 3, 2, 1]
```

Memory

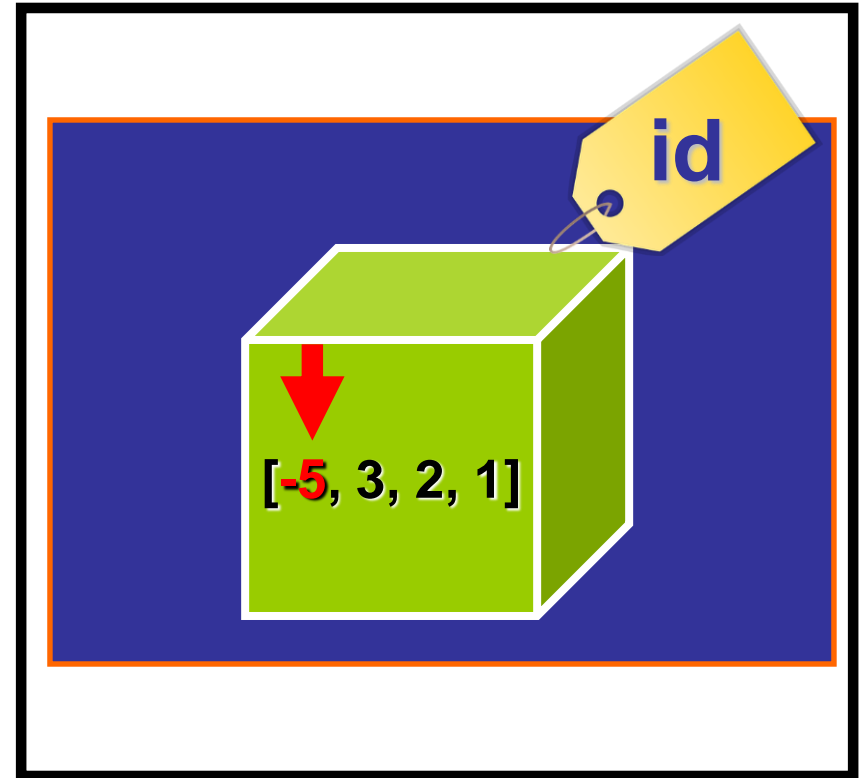




Mutation

```
>>> a = [7, 3, 2, 1]
>>> a[0] = -5
>>> a
[-5, 3, 2, 1]
```

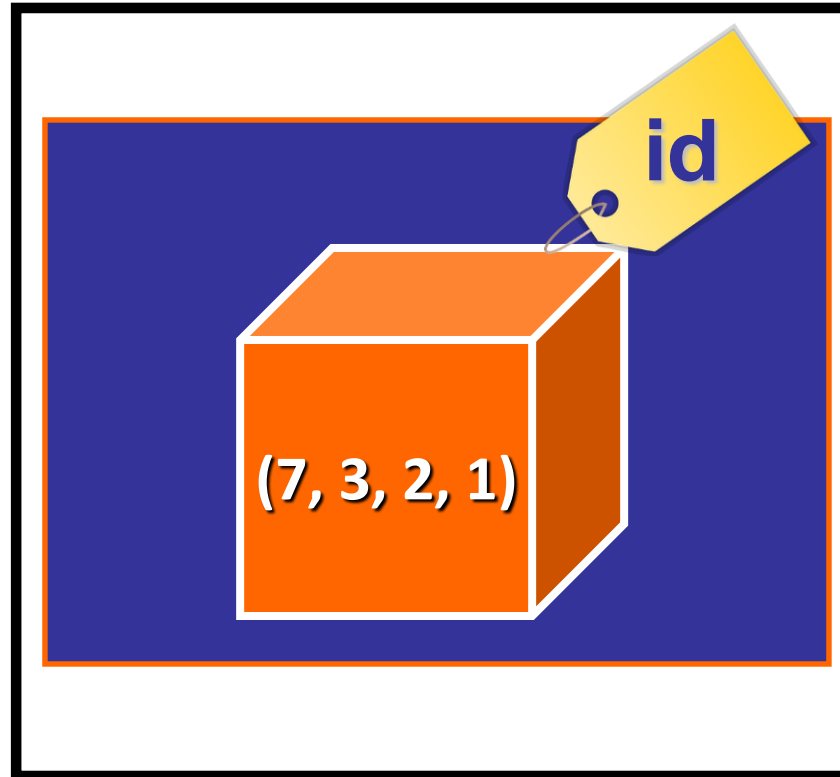
Memory





Mutation

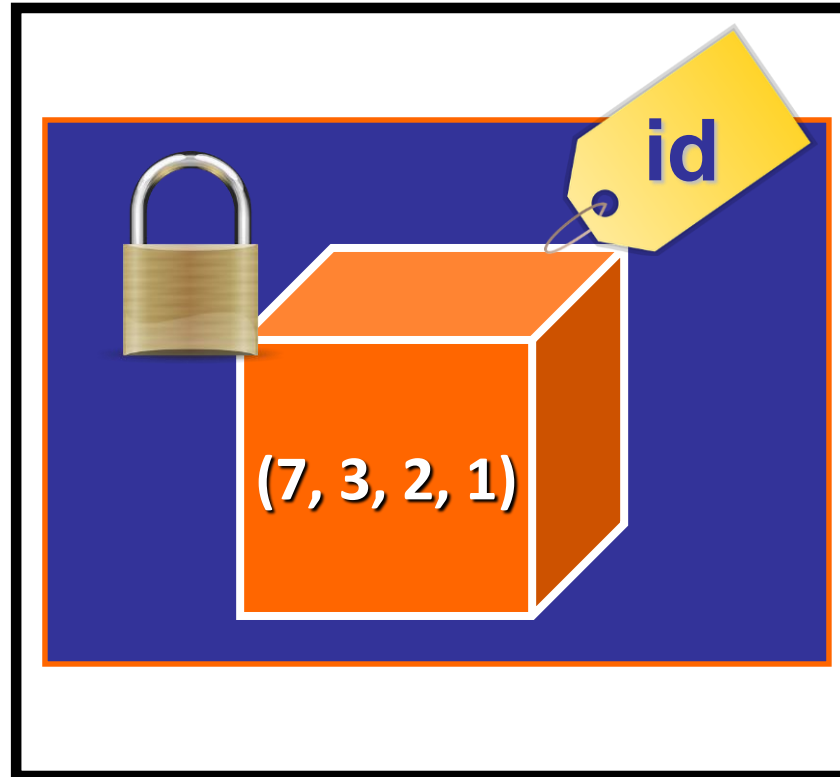
Memory





Mutation

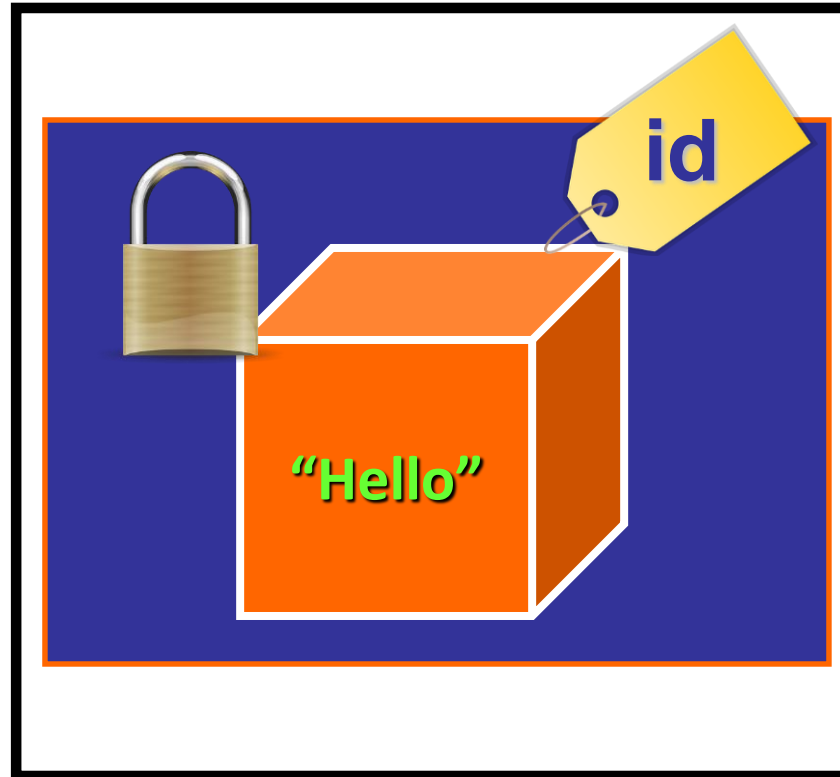
Memory





Mutation

Memory





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Advantages & Disadvantages

