



## 8 Attributes

### Attributes

Mock objects allow attributes to be set when created using keyword arguments. Attributes can also be set after an object is created.

Mocks create attributes dynamically when accessed if they don't already exist. Removed attributes are not dynamically recreated on subsequent attempts to access.

```
1 from unittest.mock import Mock
2 def connection(db):
3     ''' A function used to demonstrate conditional attribute access
4     if hasattr(db, 'connection_source'):
5         return db.connection_source
6     return 'xyz'
7 # Attributes can be set by specifying attribute names as keyword arguments
8 mock = Mock(connection_source='abc', hostname='localhost')
9 assert mock.connection_source == 'abc'
10 assert mock.hostname == 'localhost'
11 # Attributes can also be set directly on the mock object.
12 mock.another_attribute = 3.14
13 assert mock.another_attribute == 3.14
14 # Attempting to access a non-existent attribute will dynamically create it.
15 # Attributes are mock objects.
16 # Assert that the created attribute exists
17 assert mock.now_i_exist
18 # The connection function checks for an attribute named
19 # connection_source on the provided object.
20 # If the attribute exists it's returned, otherwise 'xyz' is returned.
21 assert connection(mock) == 'abc'
22 # Remove the connection_source attribute from the mock.
23 del mock.connection_source
24 # The connection function will return xyz now that the connection_source
25 # attribute is set.
26 assert connection(mock) == 'xyz'
```

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```
17 assert mock.now_i_exist
18 # The connection function checks for an attribute named
19 # connection_source on the provided object.
20 # If the attribute exists it's returned, otherwise 'xyz' is ret
21 assert connection(mock) == 'abc'
22 # Remove the connection_source attribute from the mock.
23 del mock.connection_source
24 # The connection function will return xyz now that the connecti
25 # attribute is set.
26 assert connection(mock) == 'xyz'
27 try:
28     # Attempting to access the attribute now will raise an Attr
29     # Mock doesn't dynamically re-add the attribute when access
30     # after the attribute is deleted.
31     mock.connection_source
32 except AttributeError as ex:
33     print(f'The {ex.args[0]} attribute does not exist')
34 # Removed attributes can be re-added by setting them directly.
35 mock.connection_source = 'welcome back'
36 assert mock.connection_source == 'welcome back'
37 #####
38 print('No assertion errors')
```

#### Instructions

1. Arrange the **playground.py** file to match the code above.
2. Run **playground.py** in the IDEs **terminal** pane.

```
1 python3 cloudacademy/playground.py
```

```
The connection_source attribute does not exist
No assertion errors
```

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