
Singletons: settings example

❖ settings.py

```
# defaults  
host = "localhost"  
port = 1234
```

❖ secondary.py

```
import settings  
settings.port = 42
```

❖ main.py

```
import settings, secondary  
print(settings.host, settings.port) # prints "localhost, 42"
```

Singletons: metaclass example

```
class SingletonMetaClass(type):
    _instances = {}

    def __call__(cls, *args, **kwargs):
        if cls not in cls._instances: # setup class instance
            cls._instances[cls] = super(
                SingletonMetaClass, cls).__call__(*args, **kwargs)
        return cls._instances[cls]

class Settings(metaclass=SingletonMetaClass):
    def __init__(self, host=None, port=None):
        print('setting up')
        self.host = host or 'localhost'
        self.port = port or 1234

alpha = Settings(host='google.com', port=5432) # prints "setting up"
print(alpha.host, alpha.port) # prints "google.com, 5432"
beta = Settings(host='mars.com', port=1) # ignores input, no print
print(beta.host, beta.port) # prints "google.com, 5432"
beta.host = 'yahoo.com'
print(alpha.host, alpha.port) # prints "yahoo.com, 5432"
```