Creating Threads

This lesson demonstrates how threads can be created in Python.

Creating Threads

We can create threads in Python using the `Thread` class. The constructor for the thread class appears below:

Thread constructor

```
Thread(group=None, target=None, name=None, args=(), kwargs={}, *, daemon=None)
```

The `group` argument is reserved for future extensions. `target` is the code that the thread being created will execute. It can be any callable object. A callable object can be a function or an object of a class that has the `__call__` method. Next, we can pass the arguments to the target either as a tuple `args` or as a dictionary of key value pairs using `kwargs`. Finally, the constructor takes a boolean specifying if the thread being created should be treated as a daemon thread.

The below snippet creates a thread using the `Thread` class's constructor:

Creating thread

```
from threading import Thread
from threading import current_thread


def thread_task(a, b, c, key1, key2):
    print("{0} received the arguments: {1} {2} {3} {4} {5}".format(current_thread().getName(), a, b, c, key
1, key2))


myThread = Thread(group=None,  # reserved
                  target=thread_task,  # callable object
                  name="demoThread",  # name of thread
                  args=(1, 2, 3),  # arguments passed to the target
                  kwargs={'key1': 777,
                          'key2': 111},  # dictionary of keyword arguments
                  daemon=None  # set true to make the thread a daemon
                  )

myThread.start()  # start the thread
```

```
myThread.join()  # wait for the thread to complete
```

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from threading import current_thread


def thread_task(a, b, c, key1, key2):
    print("{0} received the arguments: {1} {2} {3} {4} {5}".format(current_thread().getName(), a, b, c, key1, key2


myThread = Thread(group=None,  # reserved
                  target=thread_task,  # callable object
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                  )

myThread.start()  # start the thread

myThread.join()  # wait for the thread to complete

```

Run Save Reset

Output 0.62s

```
demoThread received the arguments: 1 2 3 777 111
```

Creating and Running a Thread

Once the thread object is created, we must start it by invoking the `start()` method. Once started, the thread will execute the target.

Main Thread

The astute reader would realize that there has to be another thread that is actually executing the code we wrote to create a new thread. This ab initio thread is called the **main thread**. Under normal conditions, the main thread is the thread from which the Python interpreter was started. The below image captures the above script in debug mode. Notice the debugger dropdown displays two threads:

- Main Thread

- demoThread

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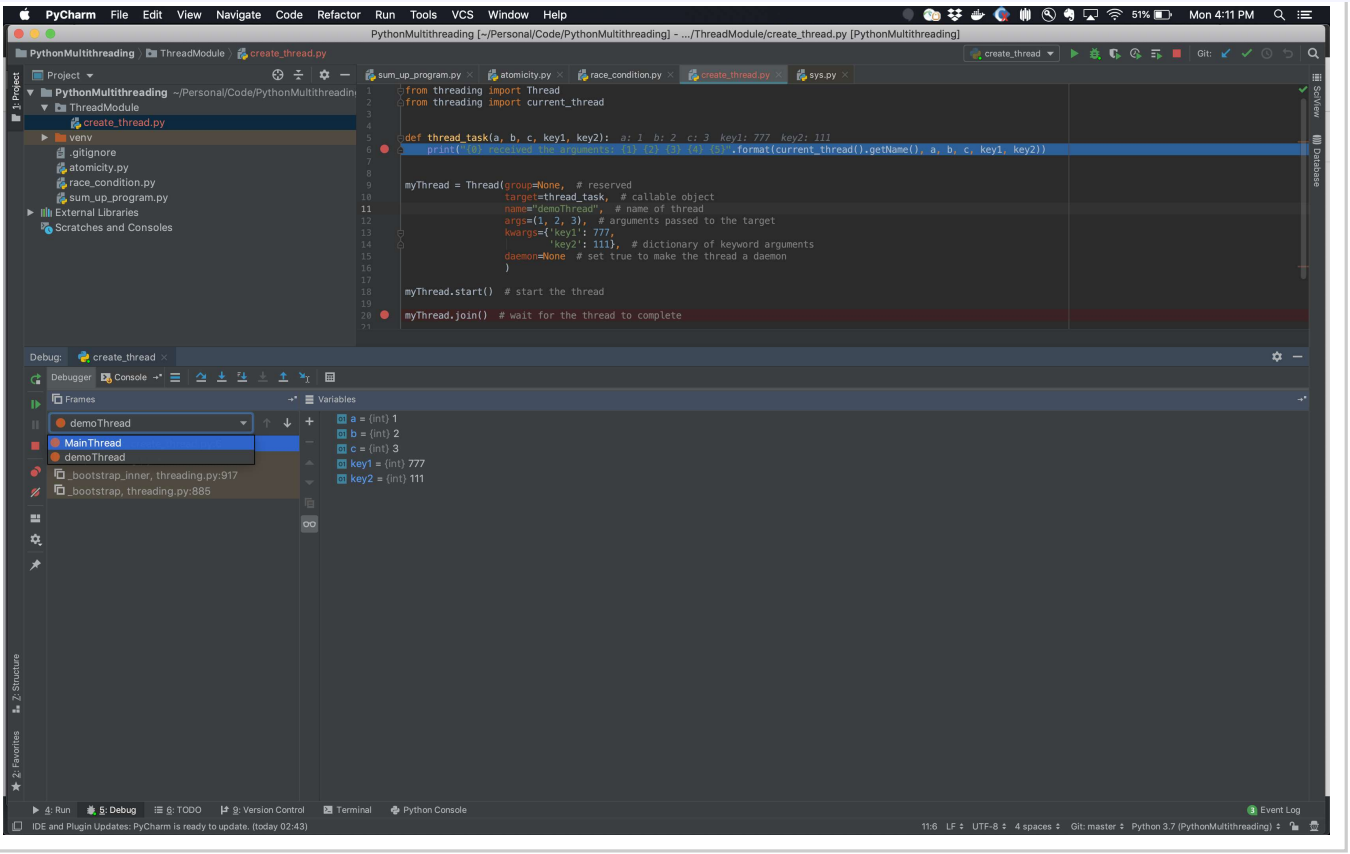

Main and Spawned Thread in Debugger

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