Lab: Threading

This lab is about Threading in Python.

For this lab you should create a function called printer() that takes a message and a maximum value to use for a period to sleep.

Within the function create a loop that iterates 10 times.

Within the loop

- generate a random number from 0 to the max period specified and then sleep for that period of time. You can use the random.randint() function for this.
- Once the sleep period has finished print out the message passed into the function.
- Then loop again until this has been repeated 10 times.

Now create five threads to run five invocations of the function you produced above and start all five threads.

Each thread should have a different max_sleep time.

An example program to run the printer function five times via a set of Threads is given below:

```
t1 = Thread(target=printer, args=('A', 10))
t2 = Thread(target=printer, args=('B', 5))
t3 = Thread(target=printer, args=('C', 15))
t4 = Thread(target=printer, args=('D', 7))
t5 = Thread(target=printer, args=('E', 2))

t1.start()
t2.start()
t3.start()
t4.start()
t5.start()
```

An example of the sort of output this could generate is given below:

BAEAEABEDAEAEBEDCECBEEEADCDBBDABCADBBDABADCDCDCCCC

Extension Point

Point 1: Create a timer to print out the message "--->" roughly after 5 seconds. You should be able to start the timer using the start() method and see how this interacts with the 5 threads you have created. This output might thus be:

DECBEA-->
DEBECDEBEEBAEDEEABDBCCDBADBBCDCBDADACAAACCCA

Point 2: Modify your code to print a message repeatedly after 5 seconds. For example:

EBE-->
EBCDEAE-->
DEDBEBBE-->
DEACBBECD-->
BBDDBA-->