MSIS2601 Assignment6

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Q2) Using yield(), sleep(), getName(), and join() methods

I created 2 thread classes – 1) ‘TaskThread’ class where extends Thread and 2) ‘TaskRunnable’ class where implements Runnable. These classes have the same output that prints out the name of thread itself using getName() function and its count for 5 times.

1. sleep() and getName() function

In the main function, I created 2 objects – thread0 and thread1 – for TaskThread class. I used sleep() method in TaskThread class to cause threads to stop executing for a 1000 milli seconds so that two threads can execute step by step each other.

* Code for TaskThread

Text

Description automatically generated

* Output of TaskThread class from two object with sleep() function is

Text

Description automatically generated

* However, without sleep() function, output of TaskThread through two objects is different, and this output may vary if I run the program again and again. The output without sleep() function is

Text

Description automatically generated

1. yield() and getName() function

In order to use yield() function, I created TaskRunnable class for thread ‘runnable’, and coded main thread to print out the name of the thread and its count. yield() function in the main function allows the main thread to check if there are any other threads with the same or higher priority than itself.

* By using yield() function, main thread is always pausing its execution and giving a chance to other thread – Thread-2 in this case. The output for this program is

Text

Description automatically generated

* However, we can’t specify when Thread ‘main’ and ‘Thread-2’ will get chance to execute without yield() method. The output without using yield() function is

Text

Description automatically generated

* The output may also vary if I run this program again and again

1. join() method

In order to execute 2 classes – TaskThread and TaskRunnable, I used join() method to make sure that threads after Thread-0 and Thread-1 do not start running until Thread-0 and Thread-1 ended. Join() method allows the currently-running thread to block any other following threads executing.

* I created join() method for thread0 object and thread1 object so that the following threads cannot start its executing. The output using join() method is

Text

Description automatically generated

* However, without join() method, the following threads – Thread-2 and main – will start their running whenever they are ready. The output without join() method is:

Text

Description automatically generated

* Of course, the output may be different if I run the program again and again