

# Assignment 2

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(Screenshot is in the next page)

**Why is "matrixtask" using most of the CPU utilization?**

Because matrix tasks are more costly in terms of CPU computations compared to other tasks.

**Why must the priority of "communicationtask" increase in order for it to work properly**

Since the matrixtask has higher priority and more execution time, it blocks the communicationtask from being scheduled. Therefore, increasing the priority of communicationtask could solve this issue.

**What happens to the completion time of "matrixtask" when the priority of "communicationtask" is increased?**

The completion time of matrixtask is barely affected by the execution of communicationtask since the communicationtask takes very little time compared to matrixtask.

**How many seconds is the period of "matrixtask"? (Hint: look at vApplicationTickHook() to measure it)**

From the screenshot, the period of matrixtask is around 955 ms for my case.

Microsoft Visual Studio Debug C...

```
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
atrix_task_period : 860 ms
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
atrix_task_period : 867 ms
ata sent!
ommunication_task_time : 201 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
atrix_task_period : 876 ms
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
ata sent!
ommunication_task_time : 200 ms
ending data...
atrix_task_period : 852 ms
ommunication_task_time : 200 ms
ending data...
ata sent!
```

```
:%Users%hlin%Documents%private%RTOS%assi
nment2%FreeRTOSv10.0.1%FreeRTOS%Demo%WIN
2-MSVC%.%Debug%RTOSDemo.exe (process 109
0) exited with code -1.
o automatically close the console when d
bugging stops, enable Tools->Options->De
ugging->Automatically close the console
hen debugging stops.
ress any key to close this window . . .
```