Co-funded by the European Union

Assignment 2

Required:

-"communicationtask" must send a simulated data packet every 200ms but is often blocked by matrixtask, fix this problem without changing the functionality in the tasks.

-Create a new task "prioritysettask" which:

Sets the priority of "communicationtask" to 4 in case its execution time is more than 1000 milliseconds

Sets the priority of "communicationtask" to 2 in case its execution time is less than 200 milliseconds

Execution:

```
-----------------------------------> Decreasing priority to 2
Sending data...
-----------------------------------> Increasing priority to 4
Data sent!
-----------------------------------> Decreasing priority to 2
Sending data...
-----------------------------------> Increasing priority to 4
Data sent!
-----------------------------------> Decreasing priority to 2
Sending data...
-----------------------------------> Increasing priority to 4
Data sent!
-----------------------------------> Decreasing priority to 2
Sending data...
-----------------------------------> Increasing priority to 4
Data sent!
-----------------------------------> Decreasing priority to 2
Sending data...
-----------------------------------> Increasing priority to 4
Data sent!
-----------------------------------> Decreasing priority to 2
Sending data...
-----------------------------------> Increasing priority to 4
Data sent!
-----------------------------------> Decreasing priority to 2
Sending data...
-----------------------------------> Increasing priority to 4
Data sent!
-----------------------------------> Decreasing priority to 2
```

Questions:

- Why is "matrixtask" using most of the CPU utilization?
  - Because it consumes a high computational power and because it has a high priority

- Why must the priority of "communicationtask" increase in order for it to work properly
  - Because matrixtask will block the CPU because it consumes high resources, and it’s priority is higher than communicationtask

- What happens to the completion time of "matrixtask" when the priority of "communicationtask" is increased?
  - It will be slightly delayed but this delay will not cause a big impact on the execution time because communicationtask’s execution time is short

- How many seconds is the period of "matrixtask"? (Hint: look at vApplicationTickHook() to measure it)
  - Period of matrixtask is approximately 1.17 seconds