CSE 438- EMBEDDED SYSTEMS PROGRAMMING

ASSIGNMENT 1

PART 1

Submitted by,

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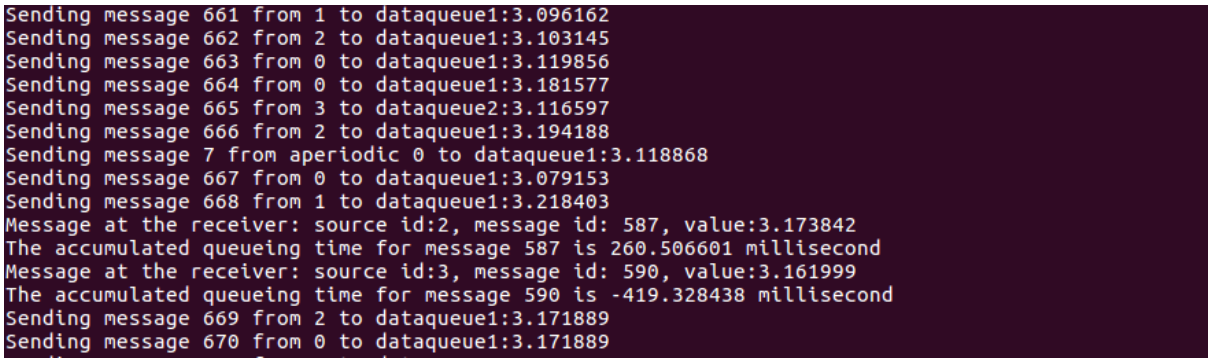
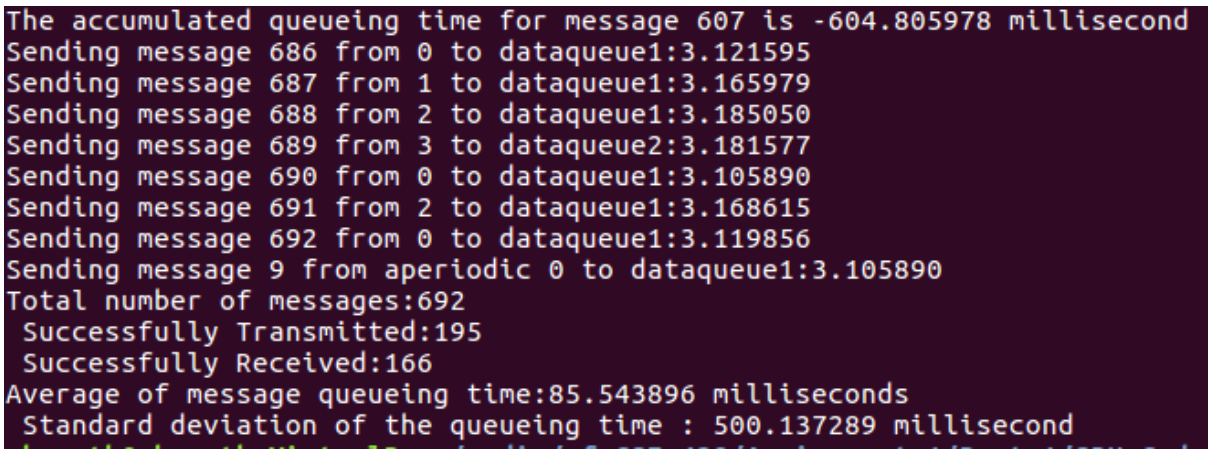
1. Execution of periodic sender and receiver threads with interruption by aperiodic sender thread



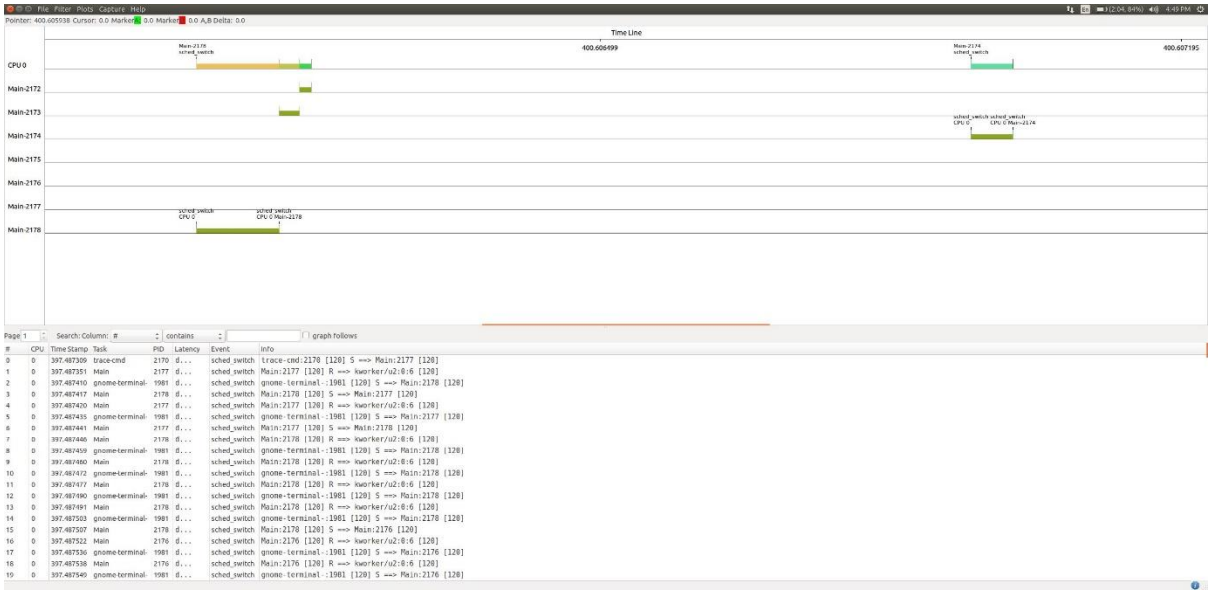
Here it is seen that after the periodic senders sends the message id 666, upon clicking of the mouse the 7th message from the aperiodic senders is being sent. It can also be seen that the receiver is working periodic here, since the period of the receiver is the highest among all periodic threads, its frequency of occurrence is lesser.

2. Termination of code upon double clicking



Here upon double clicking the mouse left button the code is terminated and the details of the message transmitted such as the amount and the times are displayed.

3. Kernel shark



#	CPU	Time Stamp	Task	PID	Latency	Event	Info
0	0	397.487309	trace-cmd	2170	d...	sched_switch	trace-cmd:2170 [120] S ==> Main:2177 [120]
1	0	397.487351	Main	2177	d...	sched_switch	Main:2177 [120] R ==> kworker/u2:0:6 [120]
2	0	397.487410	gnome-terminal-	1981	d...	sched_switch	gnome-terminal-:1981 [120] S ==> Main:2178 [120]
3	0	397.487417	Main	2178	d...	sched_switch	Main:2178 [120] S ==> Main:2177 [120]
4	0	397.487420	Main	2177	d...	sched_switch	Main:2177 [120] R ==> kworker/u2:0:6 [120]
5	0	397.487435	gnome-terminal-	1981	d...	sched_switch	gnome-terminal-:1981 [120] S ==> Main:2177 [120]
6	0	397.487441	Main	2177	d...	sched_switch	Main:2177 [120] S ==> Main:2178 [120]
7	0	397.487446	Main	2178	d...	sched_switch	Main:2178 [120] R ==> kworker/u2:0:6 [120]
8	0	397.487459	gnome-terminal-	1981	d...	sched_switch	gnome-terminal-:1981 [120] S ==> Main:2178 [120]
9	0	397.487460	Main	2178	d...	sched_switch	Main:2178 [120] R ==> kworker/u2:0:6 [120]
10	0	397.487472	gnome-terminal-	1981	d...	sched_switch	gnome-terminal-:1981 [120] S ==> Main:2178 [120]
11	0	397.487477	Main	2178	d...	sched_switch	Main:2178 [120] R ==> kworker/u2:0:6 [120]
12	0	397.487490	gnome-terminal-	1981	d...	sched_switch	gnome-terminal-:1981 [120] S ==> Main:2178 [120]
13	0	397.487491	Main	2178	d...	sched_switch	Main:2178 [120] R ==> kworker/u2:0:6 [120]
14	0	397.487503	gnome-terminal-	1981	d...	sched_switch	gnome-terminal-:1981 [120] S ==> Main:2178 [120]
15	0	397.487507	Main	2178	d...	sched_switch	Main:2178 [120] S ==> Main:2176 [120]
16	0	397.487522	Main	2176	d...	sched_switch	Main:2176 [120] R ==> kworker/u2:0:6 [120]
17	0	397.487536	gnome-terminal-	1981	d...	sched_switch	gnome-terminal-:1981 [120] S ==> Main:2176 [120]
18	0	397.487538	Main	2176	d...	sched_switch	Main:2176 [120] R ==> kworker/u2:0:6 [120]
19	0	397.487549	gnome-terminal-	1981	d...	sched_switch	gnome-terminal-:1981 [120] S ==> Main:2176 [120]

Kernelshark is accessed through the following commands

sudo trace-cmd record -e sched_switch ./Main. This creates a trace.dat file. Upon that typing kernelshark& will enable us to see the execution in the CPU of the various threads running in the code.