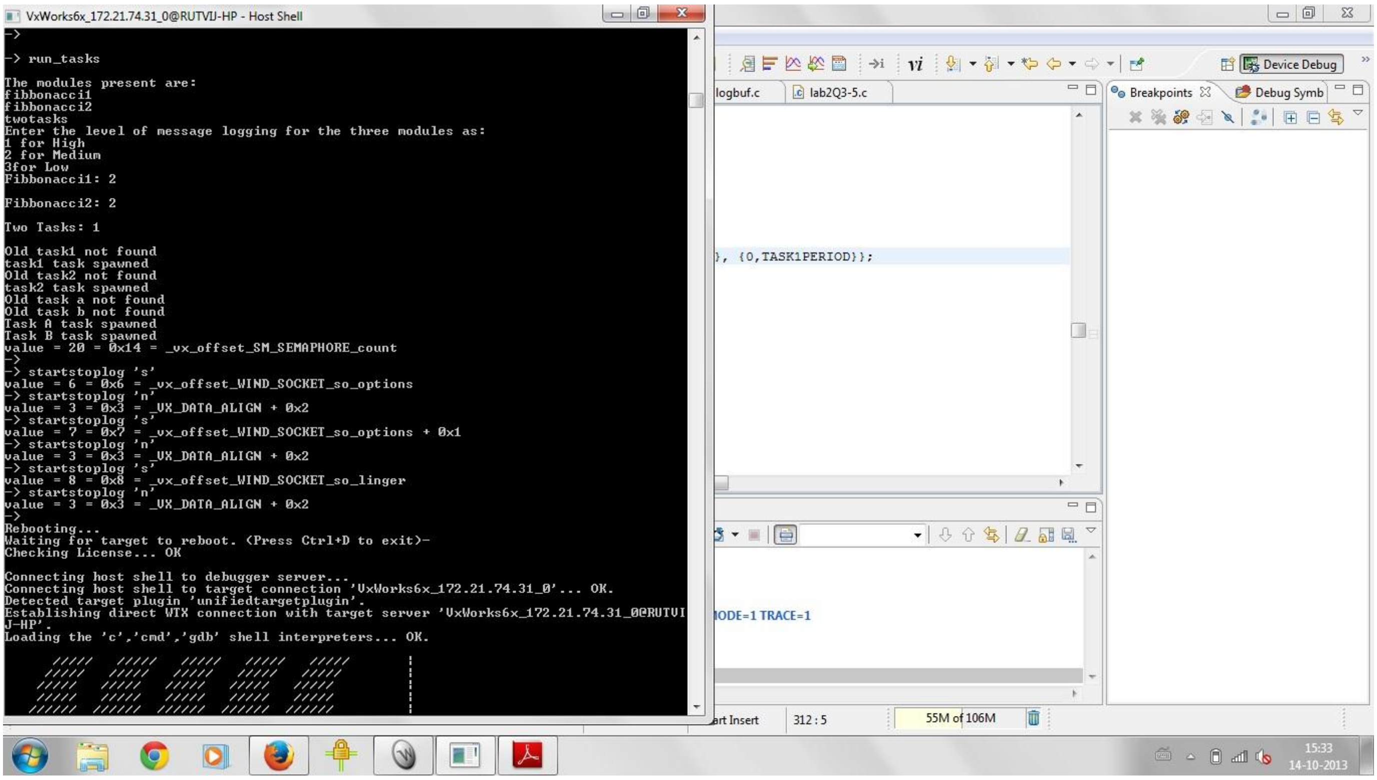
Lab 02 Report

Problem 3 - Problem 5:



```
->

-> run_tasks

The modules present are:
fibbonacci1
fibbonacci2
twotasks
Enter the level of message logging for the three modules as:
1 for High
2 for Medium
3for Low
Fibbonacci1: 2

Fibbonacci2: 2

Two Tasks: 1

Old task1 not found
task1 task spawned
Old task2 not found
task2 task spawned
Old task a not found
Old task b not found
Task A task spawned
Task B task spawned
value = 20 = 0x14 = _vx_offset_SM_SEMAPHORE_count
->
-> startstoplog 's'
value = 6 = 0x6 = _vx_offset_WIND_SOCKET_so_options
-> startstoplog 'n'
value = 3 = 0x3 = _VX_DATA_ALIGN + 0x2
-> startstoplog 's'
value = 7 = 0x7 = _vx_offset_WIND_SOCKET_so_options + 0x1
-> startstoplog 'n'
value = 3 = 0x3 = _VX_DATA_ALIGN + 0x2
-> startstoplog 's'
value = 8 = 0x8 = _vx_offset_WIND_SOCKET_so_linger
-> startstoplog 'n'
value = 3 = 0x3 = _VX_DATA_ALIGN + 0x2
->
Rebooting...
Waiting for target to reboot. (Press Ctrl+D to exit)-
Checking License... OK

Connecting host shell to debugger server...
Connecting host shell to target connection 'VxWorks6x_172.21.74.31_0'... OK.
Detected target plugin 'unifiedtargetplugin'.
Establishing direct WTX connection with target server 'VxWorks6x_172.21.74.31_0@RUTVI
J-HP'.
Loading the 'c','cmd','gdb' shell interpreters... OK.

      /////   /////   /////   /////   /////       |
     /////   /////   /////   /////   /////        |
    /////   /////   /////   /////   /////         |
    /////   /////   /////   /////   /////         |
   //////  //////  //////  //////  //////         |
```

The program starts off by running a driver function 'run_tasks' as shown in the screenshot above. This prints the modules present in the logging system. The program then asks the set the logging level for each system. The logging levels are entered as follows:

- 1 = HIGH
- 2 = MEDUM
- 3 = LOW

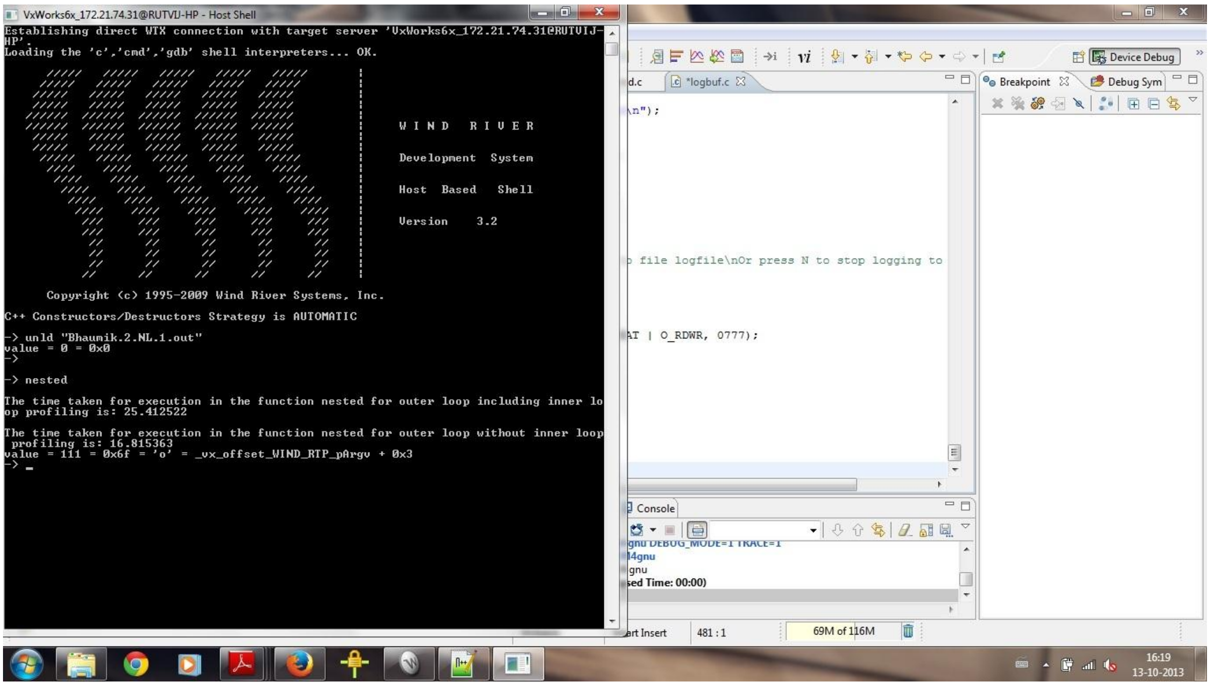
To begin logging to a file the 'startstoplog' function is run using the parameter 's' as shown in the screenshot above.

After logging to the function is begun, the logs are stored in the workspace used.

Problem 6:

The profiling information of the tasks in the subsystems in printed on the target console. To increase the accuracy of the logging system, 'sysTimestampLock' is used along with the 'tickGet' function since the tickGet function just has an accuracy of 1 tick which in this system corresponds to 1ms.

Problem 7:



```
Establishing direct WTX connection with target server 'VxWorks6x_172.21.74.31@RUTVIJ-
HP'.
Loading the 'c','cmd','gdb' shell interpreters... OK.

                                        W I N D   R I V E R

                                        Development  System

                                        Host  Based   Shell

                                        Version    3.2

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C++ Constructors/Destructors Strategy is AUTOMATIC

-> unld "Bhaumik.2.NL.1.out"
value = 0 = 0x0
->

-> nested

The time taken for execution in the function nested for outer loop including inner lo
op profiling is: 25.412522

The time taken for execution in the function nested for outer loop without inner loop
 profiling is: 16.815363
value = 111 = 0x6f = 'o' = _vx_offset_WIND_RTP_pArgv + 0x3
-> _
```

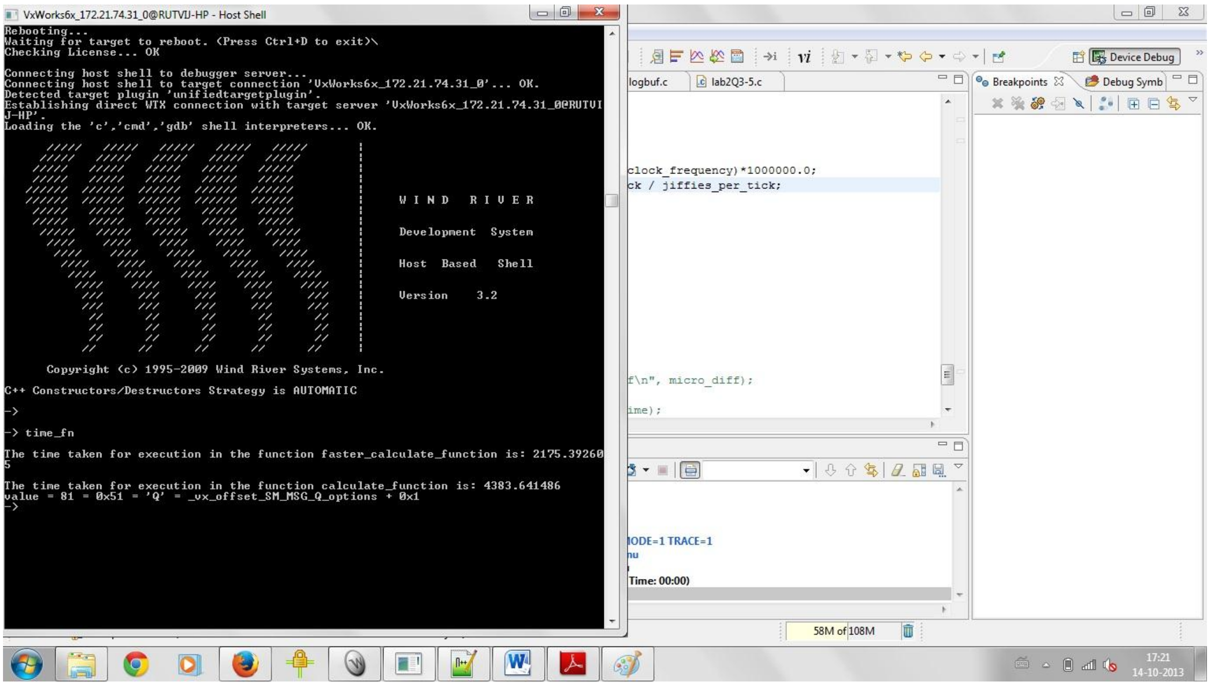
```
\n");
b file logfile\nOr press N to stop logging to
AT | O_RDWR, 0777);
```

```
gnu DEBUG_MODE=1 TRACE=1
l4gnu
gnu
sed Time: 00:00)
```

The net impact of profiling code was approximately 9microseconds.

Problem 8:

The algorithm was improved by running the loop for x/2 +1 times since the largest factor of a number can be number divided by 2. Also to perform quicksort on a sorted array is a wastage execution time so it is determined within the for loop whether the array is sorted and an improvement of approximately 51% as shown.



VxWorks6x_172.21.74.31_0@RUTVIJ-HP - Host Shell

```
Rebooting...
Waiting for target to reboot. (Press Ctrl+D to exit)\
Checking License... OK

Connecting host shell to debugger server...
Connecting host shell to target connection 'VxWorks6x_172.21.74.31_0'... OK.
Detected target plugin 'unifiedtargetplugin'.
Establishing direct WTX connection with target server 'VxWorks6x_172.21.74.31_0@RUTVI
J-HP'.
Loading the 'c','cmd','gdb' shell interpreters... OK.

                                                    W I N D   R I V E R

                                                    Development  System

                                                    Host  Based   Shell

                                                    Version    3.2

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C++ Constructors/Destructors Strategy is AUTOMATIC

->

-> time_fn

The time taken for execution in the function faster_calculate_function is: 2175.39260
5

The time taken for execution in the function calculate_function is: 4383.641486
value = 81 = 0x51 = 'Q' = _vx_offset_SM_MSG_Q_options + 0x1
->
```

```
clock_frequency)*1000000.0;
ck / jiffies_per_tick;

f\n", micro_diff);

ime);
```

LAB 2 Sign Off Sheet ECEN 4/5623

Name: Rutvij Karkhanis 4623 / [✓ 5623] (Circle One)

Question 1:

a) Wrapper function Implementation for High, Medium and Low

[ ] Average [ ] Good [✓] Excellent

b) Log level implementation in command line

[ ] Average [✓] Good [ ] Excellent

Question 2:

a) Students understanding of logFdSet and ioGlobalStdGet

[ ] Average [✓] Good [ ] Excellent

b) Implementation to Enable, Disable and Restart logging

[ ] Average [✓] Good [ ] Excellent

Question 3:

a) Students method to update logging functionality(additional features) :-

- Subsyst. name, time, logging. Priority, function, line no.
-

Question 4:

a) Profiling mechanism implementation and functionality for different regions

[ ] Average [✓] Good [ ] Excellent

Question5:

a) Understanding the overhead of the profiling mechanism, by profiling a nested loop.

[ ] Average [ ] Good [✓] Excellent

Grad Question:

a) Students improvement by % 4159.68

- for loop run till (x/2)
- Seperated even & odd and incremented by 2.

Signature and Date:- ADesai 2100.12
10/13/2013

Comments: ADesai

- No extension for log file.
- Log Init not present
- Double fault during execution

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