UDACITY

Ministry of Communications and Information Technology

egypt fwd initiative

مستقبلنا رقمي

EDF Scheduler Report

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Calculations

Task	Periodicity
Button 1	50
Button 2	50
Transmitter	100
Receiver	20
Load 1	10
Load 2	100

Hyperperiod =

*L*east common multiplier (50, 50, 100, 20, 10, 100) = 100ms

Task	Exec time	occurance
Button 1	0.013	2
Button 2	0.013	2
Transmitter	0.15	1
Receiver	0.15	5
Load 1	5	10
Load 2	12	1

CPU load =

((0.013x2)+(0.013x2)+(0.15)+(0.15x5)+(5x10)+(12))/100 = 62.9%

Task	Exec time	Periodicity
Button 1	0.013	50
Button 2	0.013	50
Transmitter	0.15	100
Receiver	0.15	20
Load 1	5	10
Load 2	12	100

Using URM method :

((0.013/50)+(0.013/50)+(0.15/100)+(0.15/20)+(5/10)+(12/100)) = 0.6295

6x(2^(1/6) - 1) = 0.735

0.6295 < 0.735 system is schedulable

Using time demand method :

task 1 --> Load1

W1(10) = 5 + 0 = 5 ---> 5<10

task1 is schedulable

task 2 --> Receiver

W2(20) = 0.15 + (5x2) = 10.15 ---> 10.15<20

task2 is schedulable

task 3 --> Button1

W3(50) = 0.013 + (5x5) + (0.15x3)= 25.763 ---> 25.76<50

task3 is schedulable

task 4 --> Button2

W4(50) = 0.013 +0.013+ (5x5) + (0.15x3)= 25.776 ---> 25.78<50

task4 is schedulable

task 5 --> transmitter

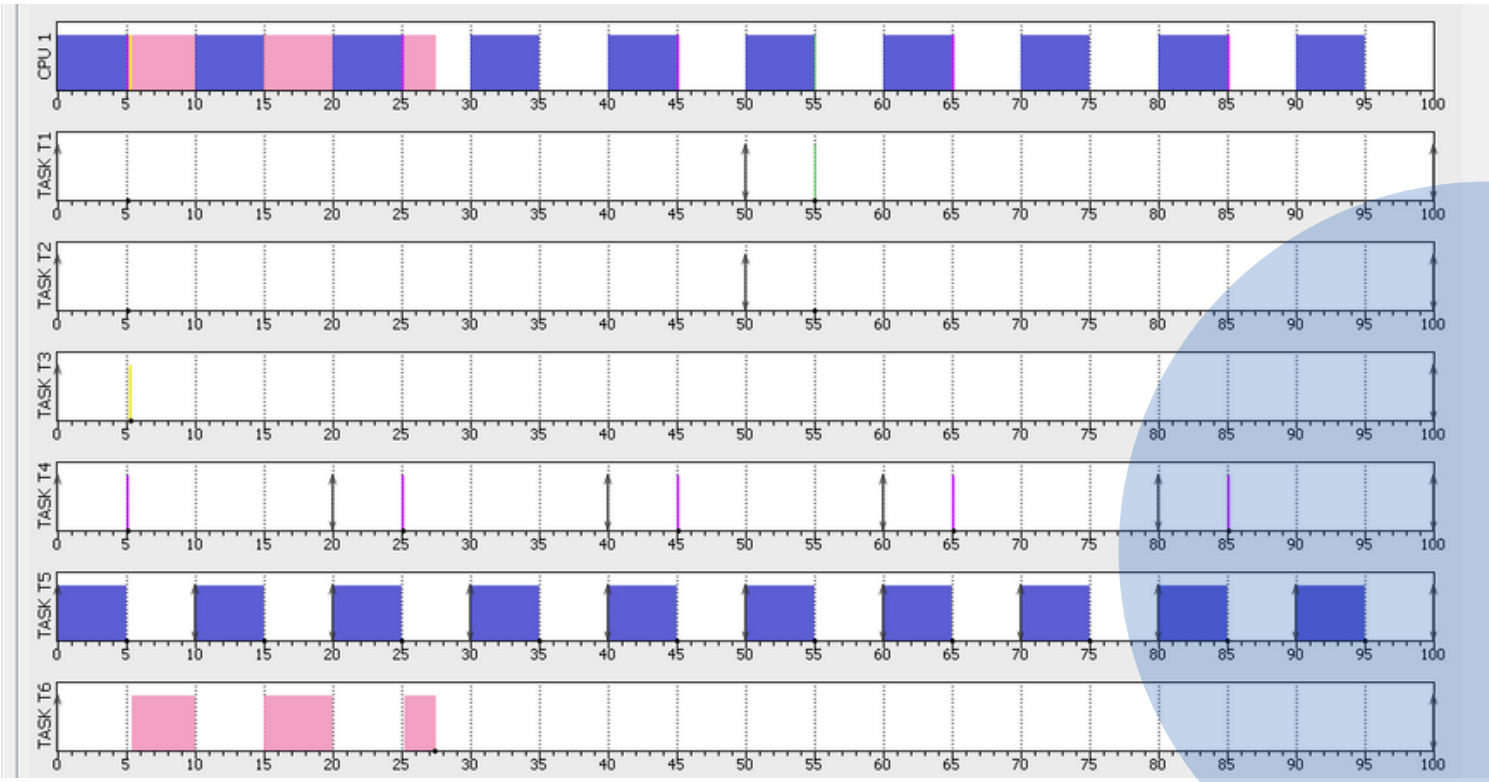
W5(100) = 0.15+ (5x10) + (0.15x5) + (0.013x4)= 50.952
---> 50.952<100

task5 is schedulable

task 6 --> Load 2

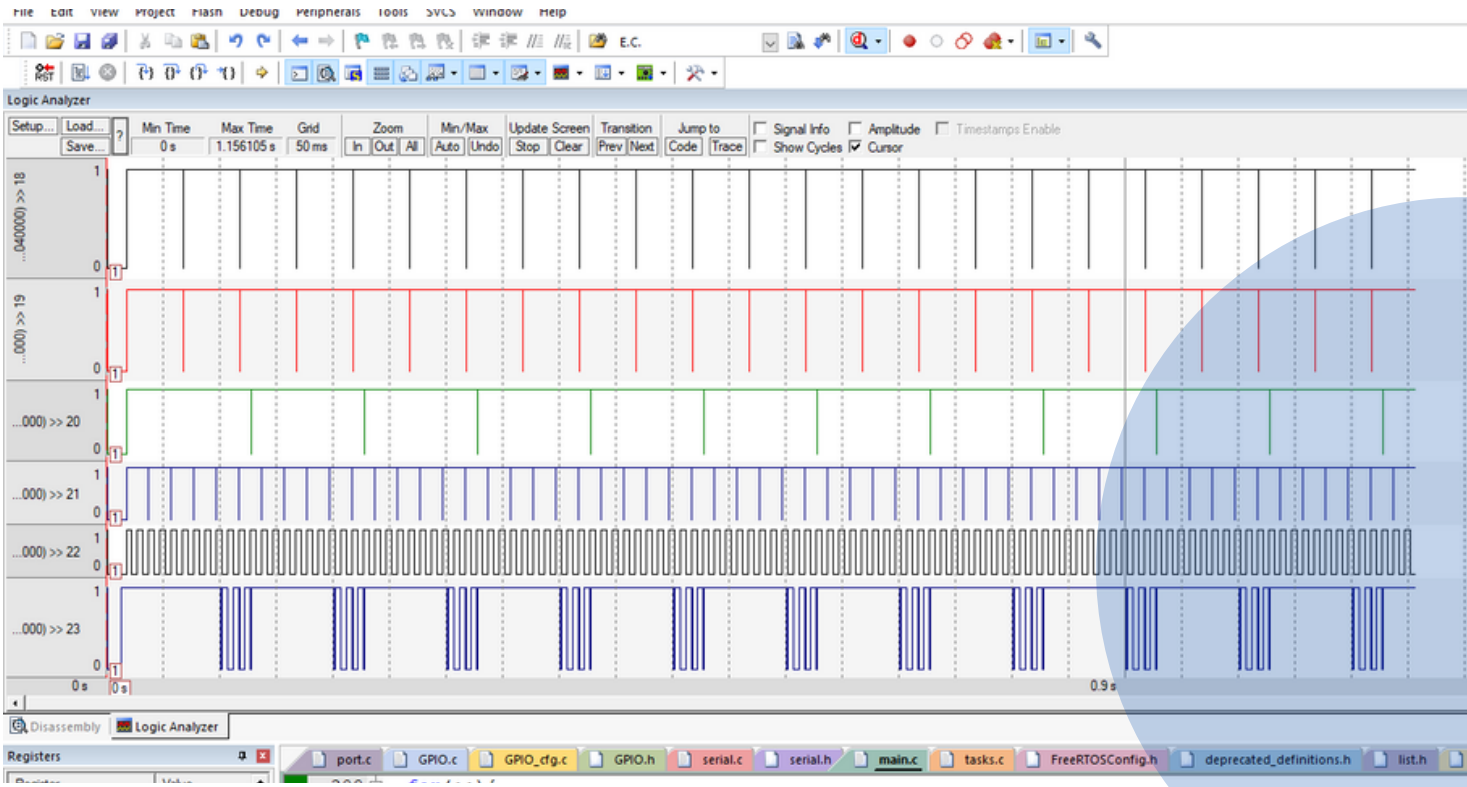
W6(100) = 12+(0.15)+ (5x10) + (0.15x5) + (0.013x4)= 62.952
---> 62.952<100

task6 is schedulable



simso simulation

	Total load	Payload	System load
CPU 1	0.6295	0.6295	0.0000
Average	0.6295	0.6295	0.0000



Keil logic analyzer