Implement and Test EDF Scheduler
The System Consists of 6 Tasks Tasks Properties :

Task 1:
Period = 50 ms
Deadline = 50 ms
Priority = Dynamic
Execution Time = 1.8 ms

Task 2:
Period = 50 ms
Deadline = 50 ms
Priority = Dynamic
Execution Time = 2.6 ms

Task 3:
Period = 100 ms
Deadline = 100 ms
Priority = Dynamic
Execution Time = 3 ms

Task 4:
Period = 20 ms
Deadline = 20 ms
Priority = Dynamic
Execution Time = 1.6 ms

Task 5:
Period = 10 ms
Deadline = 10 ms
Priority = Dynamic
Execution Time = 5 ms

Task 6:
Period = 10 0ms
Deadline = 100 ms
Priority = Dynamic
Execution Time = 12 ms

- The hyperperiod=100 ms The highest periodicity of all tasks
- CPU load

$$U = \sum_{i=1}^{N} \frac{Ci}{Ti} \leq \quad 1$$

$$(U) = \frac{1.8}{50} + \frac{2.6}{50} + \frac{3}{100} + \frac{1.6}{20} + \frac{4.8}{10} + \frac{12}{100} = 72.8$$

- system schedulability using URM and time demand analysis
  U=72.8
  URM=6((2^1/6) – 1) =73.4
  URM>U
  So the system in schedulable
  Time demand analysis
  All tasks are schedulable
  Because their execution time is small compared to the periodicity and deadline so there is no task will miss deadline
  Calculate time demand analysis for task 6 which is the highest priority task
  W(1)=12+0=12
  W(2)=12+0=12
  W(3)=12+0=12
  W(4)=12+0=12
  W(5)=12+0=12
  W(6)=12+0=12
  W(7)=12+0=12
  W(8)=12+0=12
  W(10)=12+0=12
  .
  ..
  ...
  ..
  W(100)=12+0=12
  12<50 task is schedulable

  Calculate time demand analysis for task 5
  W(1)=5+(1/50)*12=5.24
  W(2)= 5+(2/50)*12=5.1
  ..
  W(10)= 5+(10/50)*12=7.4
  7.4<10 task is schedulable

  Calculate time demand analysis for task 4 which is the highest priority task
  W(11)=1.6+(11/50)*12+(11/10)*5=9.74
  ..
  ...
  ..
  W(20)= 1.6+(20/50)*12+(20/10)*5=16.4
  16.4<20 task is schedulable

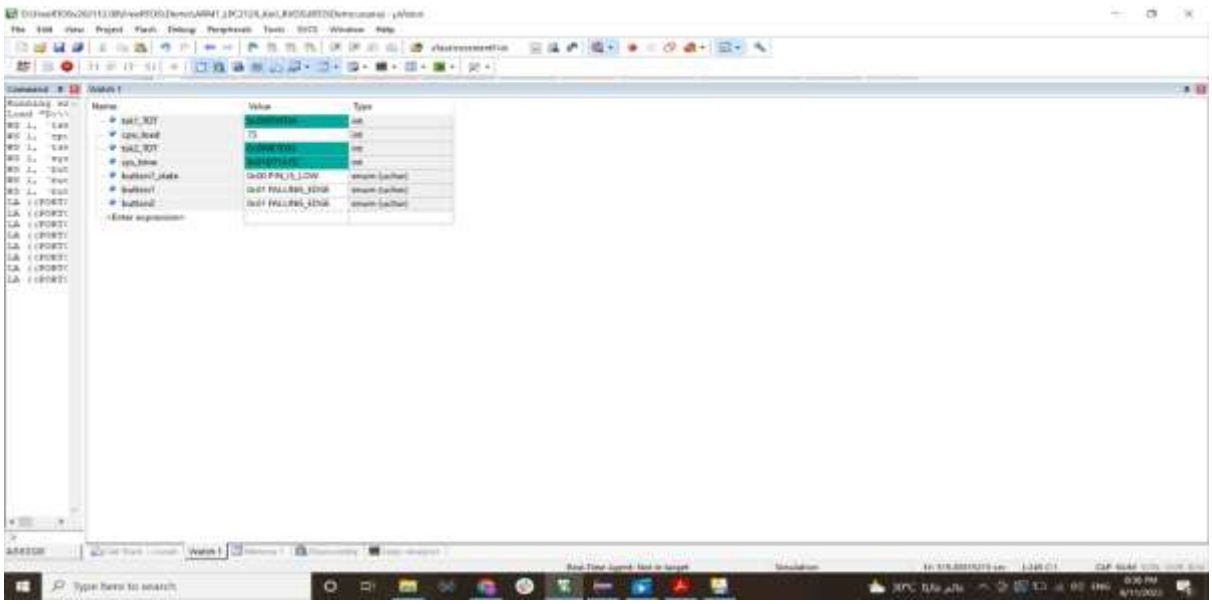
Calculate time demand analysis for task 3 which is the highest priority task
W(21)= 3+(21/20)*1.6+(21/50)*12+(21/10)*5=19.48
.
..
...
W(100)= 3+(100/20)*1.6+(100/50)*12+(100/10)*5=85
85<100 task is schedulable

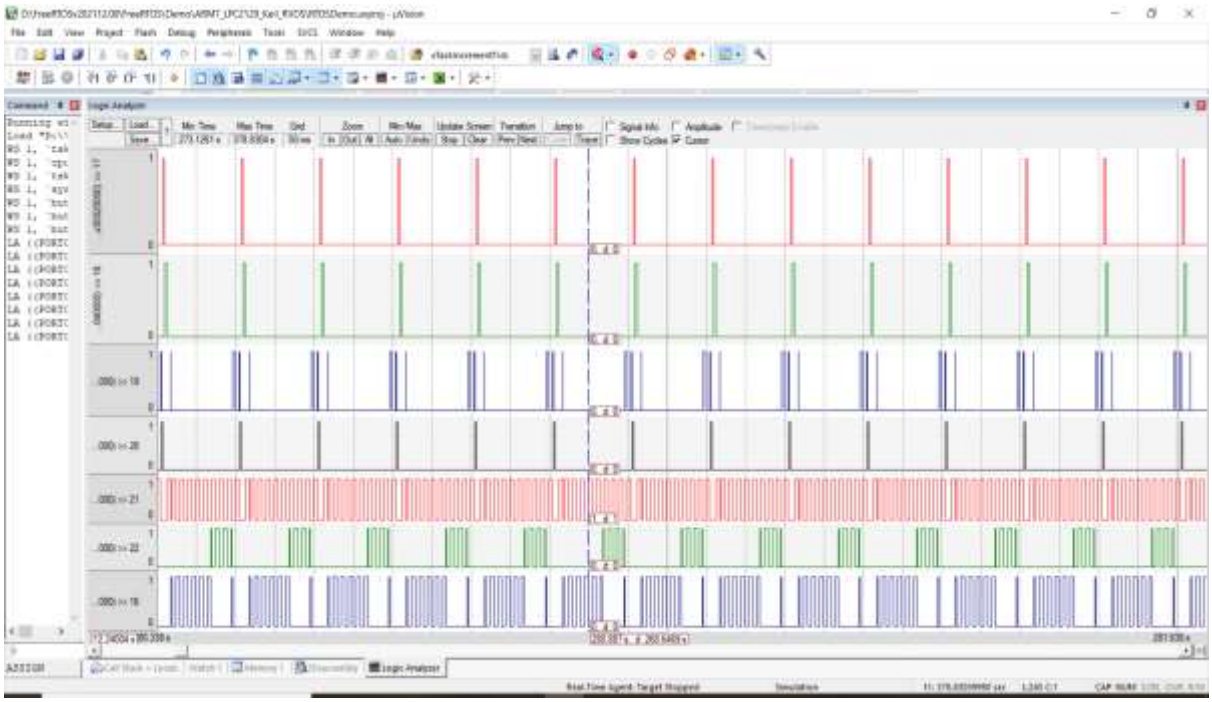
Calculate time demand analysis for task 2 which is the highest priority task
W(1)= 2.6+(1/50)*3+(21/20)*1.6+(21/50)*12+(21/10)*5=19.88
.
..
...
..
W(50)= 2.6+(50/50)*3+(50/20)*1.6+(50/50)*12+(50/10)*5=46.6
task is schedulable

Calculate time demand analysis for task 1 which is the highest priority task
W(1)=1.8+ (1/50)*2.6+(1/50)*3+(21/20)*1.6+(21/50)*12+(21/10)*5=

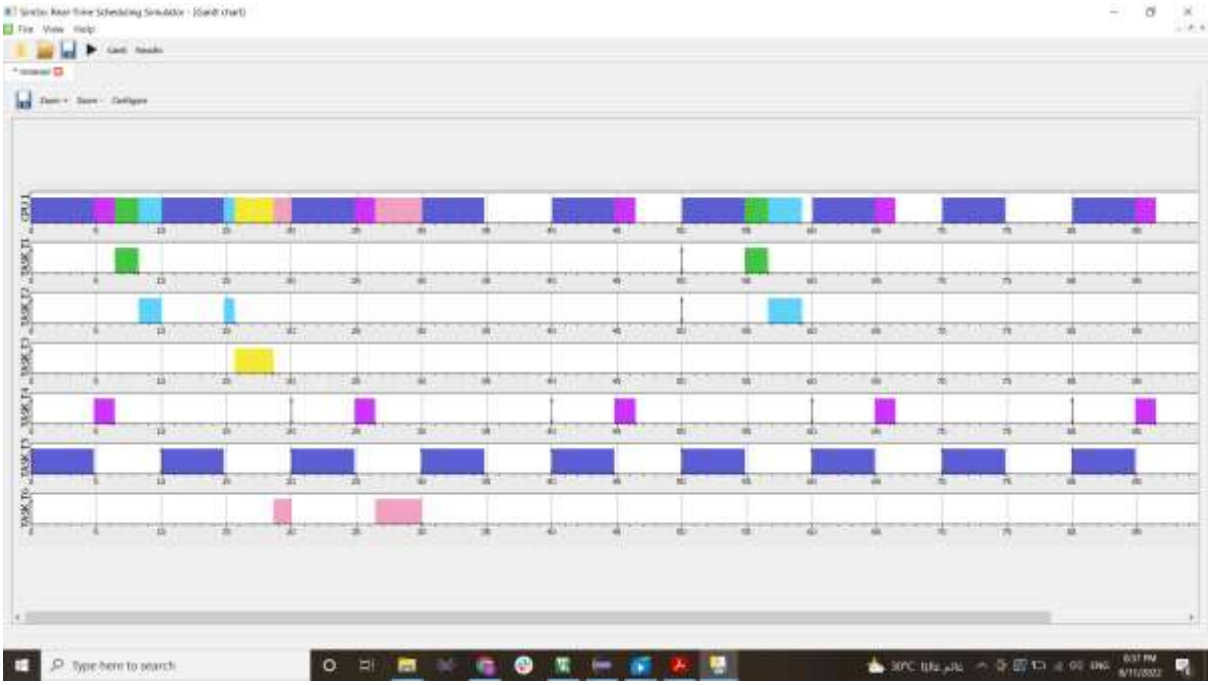
.
..
...
..
W(50)= W(1)=1.8+ (1/50)*2.6+(1/50)*3+(21/20)*1.6+(21/50)*12+(21/10)*5=48.4
task schedulable

- cpu load from keil

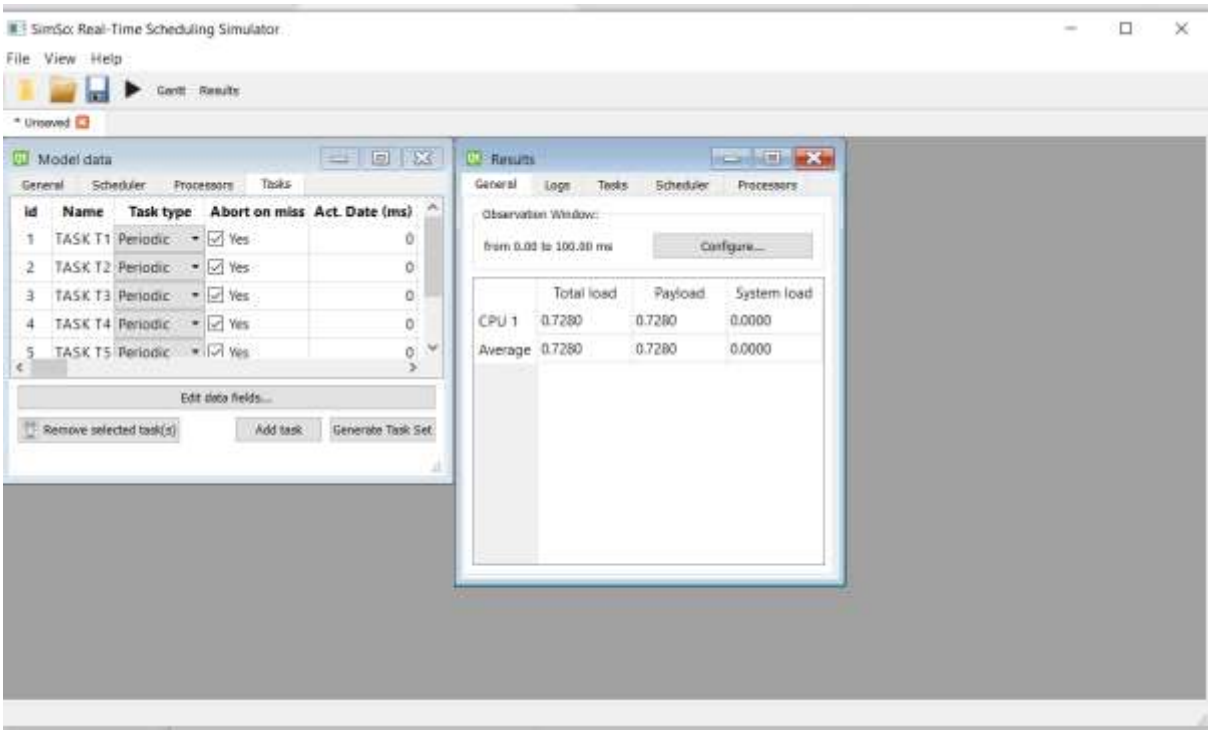




- tracing of execution time from keil



- GANTT chart at simso



- CPU load at simso

Are the results as expected ?
The result as I expected
Does the results indicate a successful implementation ?
Yes cause the analysis is equal the values from simulator