task	Execution time (ms)
Button_1_Monitor	0.015
Button_2_Monitor	0.0156
Periodic_Transmitter	0.03
Uart_Receiver	0.001
Load_1_Simulation	5
Load_2_Simulation	12

Hyper period =100ms

2.cpu load

U= E1+E2+E3+E4+E5+E6/hyper period

U=((2*0. 015)+(2*0.156)+(0.03)+(0.001*5)+(5*10)+(12))/100= 0.62 %

3. Check system schedulability using URM

URM=n(s^(1/n) -1)

URM=6 * (2^(1/6) -1)=0.73

U<URM system is schedulable

time demand analysis

w(t)=ei+ ∑[t/p]*e

W(10)=5 +0=5 5<10 Load_1_Simulation is schedulable

W(20)=0.001 + (20/10)*5=10.001 ,, 10.001<20 so Uart_Receiver is schedulable

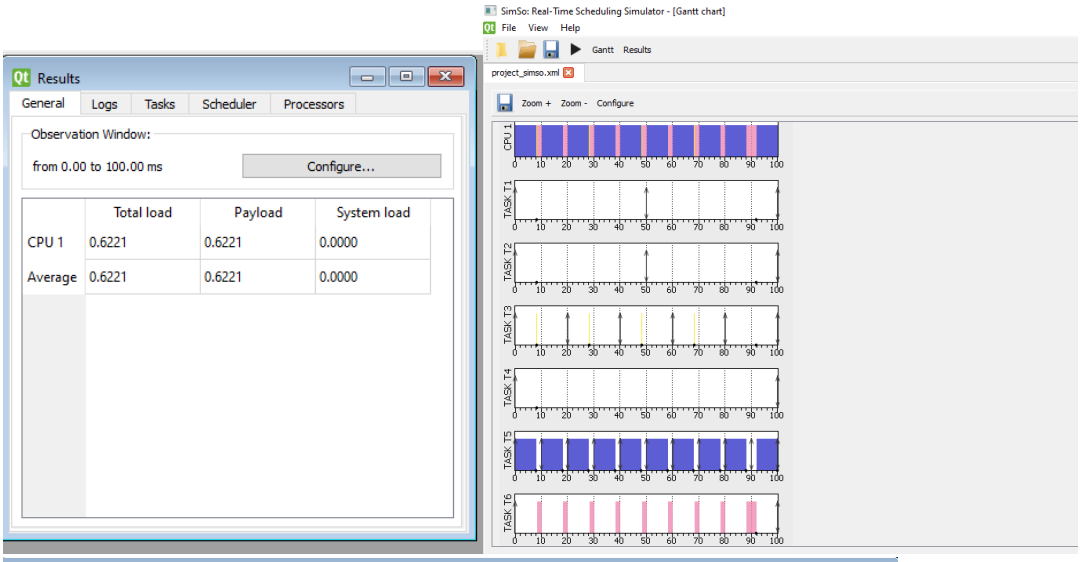
W(50)= 0.015 +(50/10)*5 + (50/20)*0.001= 25.0175 <50 so Button_1_Monitor is schedulable

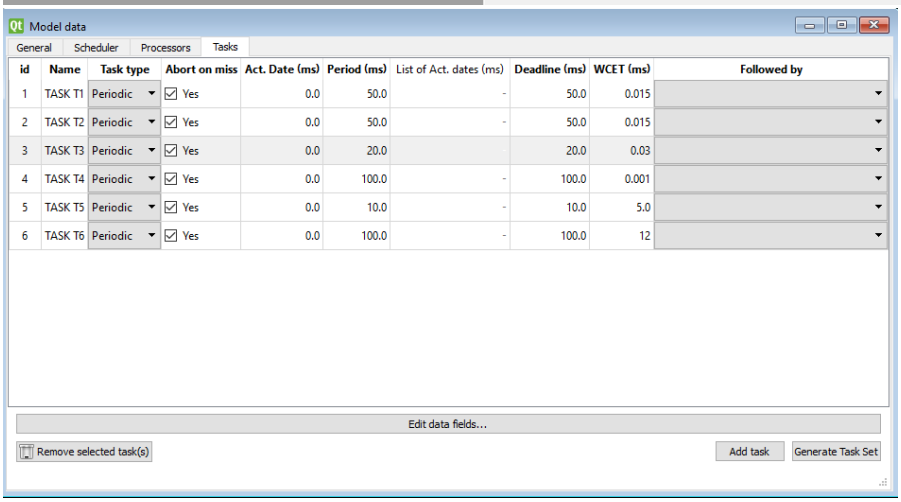
W(50)=0.015 +(50/10)*5 + (50/20)*0.001 + (50/50)*0.015= 25.0325 <50 so Button__Monitor is schedulable

W(100)= 0.03+(100/10)*5 + (100/20)*0.001 + (100/50)*0.015+(100/50)*0.015 = 50.095 so Periodic_Transmitter is schedulable

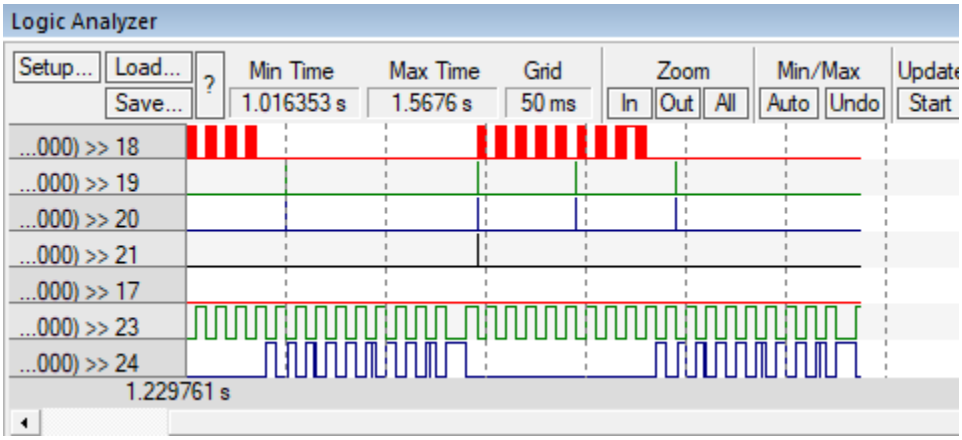
W(100)=12+(100/10)*5 + (100/20)*0.001 + (100/50)*0.015+(100/50)*0.015 + (100/100)*12= 62.095 Load_2_Simulation is schedulable

Second simso:



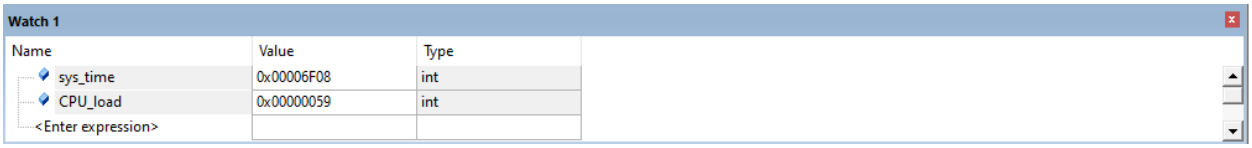


Third Runtime:



18:idle task ,19: Button_1_Monitor , 20: Button_2_Monitor , 21: Periodic_Transmitter,

17: Uart_Receiver , 23: Load_1_Simulation , 24: Load_2_Simulation



The result are expected and indicate a successful implementation and successful schedulability