Time Demand Analysis

P1: 50, P2: 50, P3: 100, P4: 20, P5: 10, P6: 100

E1:0.015, E2:0.015, E3:0.015, E4:0.0145, E5:5.061, E6:12.2

Task 1 & 2:

$W(50) = 0.015 + ([50/20] * 0.0145) + ([50/10] * 5.061) = 25.357ms$

W (50) < Deadline => So Task 1 & 2 are Schedulable.

Task 3:

$W(100) = 0.015 + ([100/50] * 0.015) + ([100/50] * 0.015) + ([100/20] * 0.0145) + ([100/10] * 5.061) = 13.1575ms$

W (20) < Deadline => So Task 3 is Schedulable.

Task 4:

$W(20) = 0.0145 + 2*5.061 = 10.1365ms$

W (20) < Deadline => So Task 4 is Schedulable.

Task 5:

$W(10) = 5.061 + 0 = 5.061ms$

W (10) < Deadline => So Task 5 is Schedulable.

Task 6:

$W(100) = 12.2 + ([100/50] * 0.015) + ([100/100] * 0.015) + ([100/50] * 0.015) + ([100/20] * 0.0145) + ([100/10] * 5.061) = 25.372ms$

W (100) < Deadline => So Task 6 is Schedulable.

Total Execution Time:

$2 * E1 + 2 * E2 + E3 + 4 * E4 + 10 * E5 + E6 = 62.945$
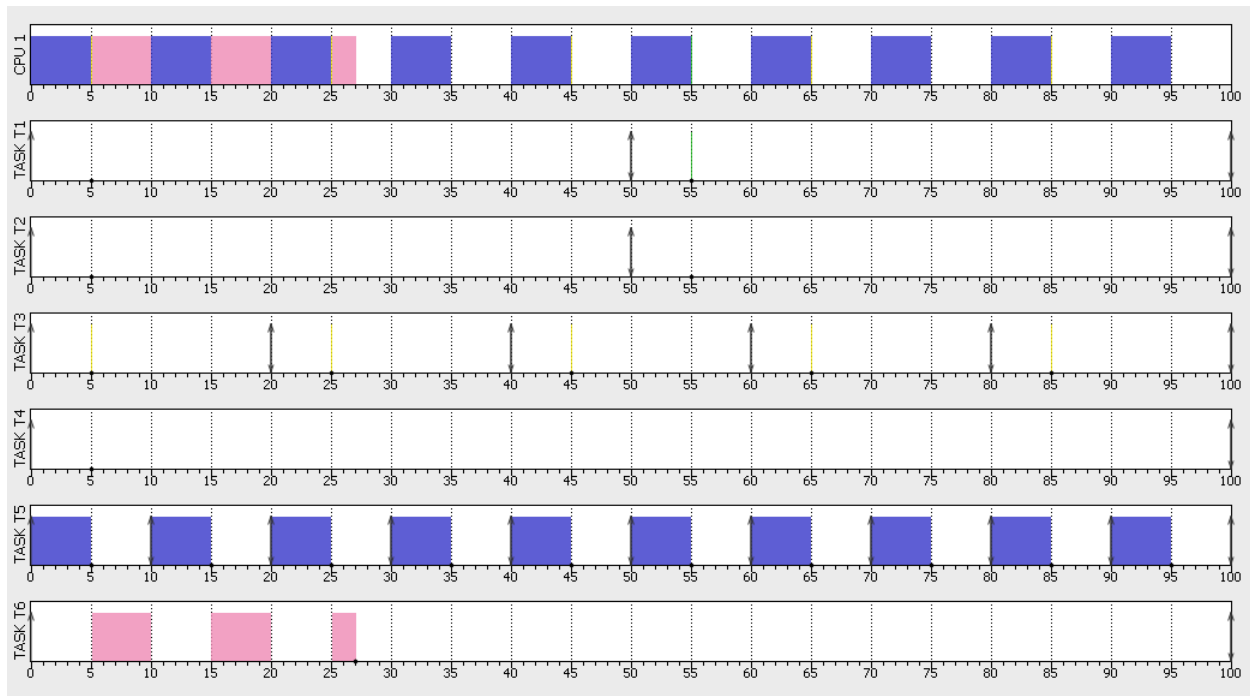
Hyper Period = **LCM(P1, P2, P3, P4, P5, P6) = 100**

CPU Load = (Total Execution Time / Hyper Period) * 100

CPU Load = 62.945%

URM = $n(2^{1/n} - 1)$ *** 100%= 73.48%**

CPU_load < URM => So The system is Schedulable.

SIMSO:

Logic Analyzer: