

Let's look at 3 tasks (processes):

task	period	exec time	# exec per 60 cycles
1	10	3	6
2	12	4	5
3	15	5	4

Earliest Deadline First

cycle #	deadlines for tasks 1, 2, 3:			schedule
0	10	12	15	
1				1
2				1
3	20	12	15	1
4				2
5				2
6				2
7	20	24	15	2
8				3
9				3
10				3
11				3
12	20	24	30	3
13				1
14				1
15	30	24	30	1
16				2
17				2
18				2
19	30	36	30	2
20				3
21				3
22				3
23				3
24	30	36	45	3
25				1
26				1
27	40	36	45	1
28				2
29				2
30				2
31	40	48	45	2
32				1
33				1
34	50	48	45	1
35				3
36				3
37				3
38				3
39	50	48	60	3
40				2
41				2
42				2
43	50	60	60	2
44				1
45				1
46	60	60	60	1
47				3
48				3
49				3
50				3
51	60	60	75	3
52				1
53				1
54	70	60	75	1
55				2
56				2
57				2
58	70	72	75	2
59				slack
60				slack

Rate Monotonic

cycle #	release of tasks 1,2,3				schedule
0					
1	1				1
2					1
3					1
4					2
5					2
6					2
7					2
8					3
9					3
10	1				3
11					1
12		2			1
13					1
14					2
15			3		2
16					2
17					2
18					3
19					3
20	1				3
21					1
22					1
23					1
24		2			
25					2
26					2
27					2
28					2
29					
30	1		3		
31					1
32					1
33					1
34					
35					
36		2			
37					2
38					2
39					2
40	1				2
41					1
42					1
43					1
44					
45			3		
46					
47					
48		2			
49					2
50	1				2
51					1
52					1
53					1
54					2
55					2
56					
57					
58					
59					
60	1	2	3		

oh no!!!

Job per ex
 A 10 4
 B 15 4
 C 35 10

LCM of 10 and 15 is 30
 LCM of 30 and 35 is $5 \times 6 \times 7 = 210$

Time	A	B	C	idle?
1	A			
2	A			
3	A			
4	A			
5		B		
6		B		
7		B		
8		B		
9			1	
10			2	
11	A			
12	A			
13	A			
14	A			
15			3	
16		B		
17		B		
18		B		
19		B		
20			4	
21	A			
22	A			
23	A			
24	A			
25			5	
26			6	
27			7	
28			8	
29			9	
30			10	
31	A			
32	A			
33	A			
34	A			
35		B		
36		B		
37		B		
38		B		
39			1	
40			2	
41	A			
42	A			
43	A			
44	A			
45				1
46		B		
47		B		
48		B		
49		B		
50			3	
51	A			
52	A			
53	A			
54	A			
55			4	
56			5	
57			6	
58			7	
59			8	
60			9	

Time	A	B	C	idle?
61	A			
62	A			
63	A			
64	A			
65		B		
66		B		
67		B		
68		B		
69			10	
70				1
71	A			
72	A			
73	A			
74	A			
75			1	
76		B		
77		B		
78		B		
79		B		
80			2	
81	A			
82	A			
83	A			
84	A			
85			3	
86			4	
87			5	
88			6	
89			7	
90			8	
91	A			
92	A			
93	A			
94	A			
95		B		
96		B		
97		B		
98		B		
99			9	
100			10	
101	A			
102	A			
103	A			
104	A			
105				1
106		B		
107		B		
108		B		
109		B		
110			1	
111	A			
112	A			
113	A			
114	A			
115			2	
116			3	
117			4	
118			5	
119			6	
120			7	

Time	A	B	C	idle?
121	A			
122	A			
123	A			
124	A			
125		B		
126		B		
127		B		
128		B		
129			8	
130			9	
131	A			
132	A			
133	A			
134	A			
135			10	
136		B		
137		B		
138		B		
139		B		
140				1
141	A			
142	A			
143	A			
144	A			
145			1	
146			2	
147			3	
148			4	
149			5	
150			6	
151	A			
152	A			
153	A			
154	A			
155		B		
156		B		
157		B		
158		B		
159			7	
160			8	
161	A			
162	A			
163	A			
164	A			
165			9	
166		B		
167		B		
168		B		
169		B		
170			10	
171	A			
172	A			
173	A			
174	A			
175				1
176			1	
177			2	
178			3	
179			4	
180			5	

Time	A	B	C	idle?
181	A			
182	A			
183	A			
184	A			
185		B		
186		B		
187		B		
188		B		
189			6	
190			7	
191	A			
192	A			
193	A			
194	A			
195			8	
196		B		
197		B		
198		B		
199		B		
200			9	
201	A			
202	A			
203	A			
204	A			
205			10	
206				1
207				1
208				1
209				1
210				1

RM is not always able to accommodate a 100% CPU utilization.

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