Multilevel Feedback Queue Scheduler Example

Parameters:

• quantum = 1

• Processes in q0 get 2 times at the CPU

• Processes in q1 get 4 times at the CPU

• Processes in q2 get as many times as they need at the CPU

• J(U,T): job J with U units remaining on process and T time units remaining in queue

time	run	q0	q1	q2
0		A(10,2)		
1	A(9, 1)	B(29,2)		
2	B(28,1)	C(3,2) A(9,1)		
3	C(2,1)	A(9,1) D(7,2) B(28,1)		
4	A(8,0)	D(7,2) B(28,1) E(12,2) C(2,1)		
5	D(6,1)	B(28,1) E(12,2) C(2,1)	A(8,4)	
6	B(27,0)	E(12,2) C(2,1) D(6,1)	A(8,4)	
7	E(11,1)	C(2,1) D(6,1)	A(8, 4) B(27,4)	
8	C(1,0)	D(6,1) E(11,1)	A(8, 4) B(27,4)	
9	D(5,0)	E(11,1)	A(8, 4) B(27,4) C(1,4)	
10	E(10,0)		A(8, 4) B(27,4) C(1,4) D(5,4)	
11	A(7,3)		B(27,4) C(1,4) D(5,4) E(10,4)	
12	B(26,3)		C(1,4) D(5,4) E(10,4) A(7,3)	
13	C(0, 3)		D(5,4) E(10,4) A(7,3) B(26,3)	
			*** C completes; T = 13-2 = 11; W = 11-3 = 8; R = 11/3 = 3.7	
14	D(4,3)		E(10,4) A(7,3) B(26,3)	
15	E(9,3)		A(7,3) B(26,3) D(4,3)	
16	A(6,2)		B(26,3) D(4,3) E(9,3)	
17	B(25,2)		D(4,3) E(9,3) A(6,2)	
18	D(3,2)		E(9,3) A(6,2) B(25,2)	
19	E(8,2)		A(6,2) B(25,2) D(3,2)	
20	A(5,1)		B(25,2) D(3,2) E(8,2)	
21	B(24,1)		D(3,2) E(8,2) A(5,1)	
22	D(2,1)		E(8,2) A(5,1) B(24,1)	
23	E(7,1)		A(5,1) B(24,1) D(2,1)	
24	A(4,0)		B(24,1) D(2,1), E(7,1)	
25	B(23,0)		D(2,1) E(7,1)	A(4)
26	D(1,0)		E(7,1)	A(4 B(23)
27	E(6,0)			A(4) B(23) D(1)
28	A(3)			B(23) D(1) E(6)
29	B(22)			D(1) E(6) A(3)
30	D(0)			E(6) A(3) B(22)
			*** D completes: T = 30-3 = 27; W = 27-7 = 20; R = 27/7 = 3.9	
31	E(5)			A(3) B(22)
32	A(2)			B(22) E(5)
33	B(21)			E(5), A(2)
34	E(4)			A(2) B(21)
35	A(1)			B(21) E(4)
36	B(20)			E(4) A(1)
37	E(3)			A(1) B(20)
38	A(0)			B(20) E(3)
			*** A completes: T = 38-0 = 38; W = 38-10 = 28; R = 38/10 = 3.8	
39	B(19)			E(3)
40	E(2)			B(19)
41	B(18)			E(2)

time	run	q0	q1	q2
42	E(1)			B(18)
43	B(17)			E(1)
44	E(0)			B(17)
			*** E completes: T = 44-4 = 40; W = 40-12 = 28; R = 40/12 = 3.3	
45	B(16)			
46	B(15)			
47	B(14)			
48	B(13)			
49	B(12)			
50	B(11)			
51	B(10)			
52	B(9)			
53	B(8)			
54	B(7)			
55	B(6)			
56	B(5)			
57	B(4)			
58	B(3)			
59	B(2)			
60	B(1)			
61	B(0)			

*** B completes: T = 61-1 = 60; W = 60-29 = 31; R = 60/29 = 2.1