

Table 10.1 Synchronization Granularity and Processes

Grain Size	Description	Synchronization Interval (Instructions)
Fine	Parallelism inherent in a single instruction stream.	<20
Medium	Parallel processing or multitasking within a single application	20-200
Coarse	Multiprocessing of concurrent processes in a multiprogramming environment	200-2000
Very Coarse	Distributed processing across network nodes to form a single computing environment	2000-1M
Independent	Multiple unrelated processes	(N/A)

Table 10.2 Execution Profile of Two Periodic Tasks

Process	Arrival Time	Execution Time	Ending Deadline
A(1)	0	10	20
A(2)	20	10	40
A(3)	40	10	60
A(4)	60	10	80
A(5)	80	10	100
•	•	•	•
•	•	•	•
•	•	•	•
B(1)	0	25	50
B(2)	50	25	100
•	•	•	•
•	•	•	•
•	•	•	•

Table 10.3 Execution Profile of Five Aperiodic Tasks

Process	Arrival Time	Execution Time	Starting Deadline
A	10	20	110
B	20	20	20
C	40	20	50
D	50	20	90
E	60	20	70

Table 10.4 Value of the RMS Upper Bound

n	$n(2^{1/n} - 1)$
1	1.0
2	0.828
3	0.779
4	0.756
5	0.743
6	0.734
•	•
•	•
•	•
∞	$\ln 2 \approx 0.693$

Table 10.5 Execution Profile for Problem 10.1

Process	Arrival Time	Execution Time	Ending Deadline
A(1)	0	10	20
A(2)	20	10	40
•	•	•	•
•	•	•	•
•	•	•	•
B(1)	0	10	50
B(2)	50	10	100
•	•	•	•
•	•	•	•
•	•	•	•
C(1)	0	15	50
C(2)	50	15	100
•	•	•	•
•	•	•	•
•	•	•	•

Table 10.6 Execution Profile for Problem 10.2

Process	Arrival Time	Execution Time	Starting Deadline
A	10	20	100
B	20	20	30
C	40	20	60
D	50	20	80
E	60	20	70