

Outputs after running: python3 critical_path_method

EXAMPLE 1: Simple Project

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--- METHOD 1: Using Node Class ---

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CRITICAL PATH METHOD RESULTS (Using Node Class)

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Minimum Completion Time: 12

Critical Tasks: A, C, E, F

Detailed Task Information:

Task A: Time=3, ES=0, EF=3, LS=0, LF=3, Slack=0, Critical=True
Task B: Time=2, ES=0, EF=2, LS=5, LF=7, Slack=5, Critical=False
Task C: Time=4, ES=3, EF=7, LS=3, LF=7, Slack=0, Critical=True
Task D: Time=5, ES=3, EF=8, LS=5, LF=10, Slack=2, Critical=False
Task E: Time=3, ES=7, EF=10, LS=7, LF=10, Slack=0, Critical=True
Task F: Time=2, ES=10, EF=12, LS=10, LF=12, Slack=0, Critical=True

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--- METHOD 2: Using Arrays ---

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CRITICAL PATH METHOD RESULTS (Using Arrays)

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Minimum Completion Time: 12

Topological Order: A -> B -> C -> D -> E -> F

Critical Tasks: A, C, E, F

Detailed Task Information:

Task	Time	ES	EF	LS	LF	Slack	Critical
A	3	0	3	0	3	0	Yes
B	2	0	2	5	7	5	No
C	4	3	7	3	7	0	Yes
D	5	3	8	5	10	2	No
E	3	7	10	7	10	0	Yes
F	2	10	12	10	12	0	Yes

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--- METHOD 1: Using Node Class ---

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CRITICAL PATH METHOD RESULTS (Using Node Class)

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Minimum Completion Time: 15

Critical Tasks: Start, Task1, Task3, Task5, End

Detailed Task Information:

Task Start: Time=0, ES=0, EF=0, LS=0, LF=0, Slack=0, Critical=True

Task Task1: Time=4, ES=0, EF=4, LS=0, LF=4, Slack=0, Critical=True

Task Task2: Time=3, ES=0, EF=3, LS=1, LF=4, Slack=1, Critical=False

Task Task3: Time=6, ES=4, EF=10, LS=4, LF=10, Slack=0, Critical=True

Task Task4: Time=2, ES=4, EF=6, LS=8, LF=10, Slack=4, Critical=False

Task Task5: Time=5, ES=10, EF=15, LS=10, LF=15, Slack=0, Critical=True

Task End: Time=0, ES=15, EF=15, LS=15, LF=15, Slack=0, Critical=True

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--- METHOD 2: Using Arrays ---

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CRITICAL PATH METHOD RESULTS (Using Arrays)

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Minimum Completion Time: 15

Topological Order: Start -> Task1 -> Task2 -> Task4 -> Task3 -> Task5 -> End

Critical Tasks: Start, Task1, Task3, Task5, End

Detailed Task Information:

Task	Time	ES	EF	LS	LF	Slack	Critical
Start	0	0	0	0	0	0	Yes
Task1	4	0	4	0	4	0	Yes
Task2	3	0	3	1	4	1	No
Task3	6	4	10	4	10	0	Yes
Task4	2	4	6	8	10	4	No
Task5	5	10	15	10	15	0	Yes
End	0	15	15	15	15	0	Yes

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