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MTD 3043: ANALISIS DAN REKA BENTUK SISTEM / *SYSTEM ANALYSIS AND DESIGN*

SESI PENGAJIAN: SEM 2 (2021/2022)

KUMPULAN KULIAH MTD 3043 (A211): A

(TUTORIAL 1)

PERT/CPM CHART



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MTD3043 SYSTEM ANALYSIS AND DESIGN

TUTORIAL 1 [PERT/CPM CHART]

1. What are the three main task patterns? Explain each of the task patterns. Provide an example of each.

1. Dependent Task

- The tasks which are dependent on the execution of other task are called dependent task.
- In the example of developing a software project, testing a module depends on design and coding of the module.

2. Multiple Successor Task

- The two or more tasks which needs a task to execute prior to them is called multiple successor task. The completion of one task will leads to beginning of multiple tasks.
- In the example of developing a software project, sometimes to start coding of two modules require the completion of a single modules.

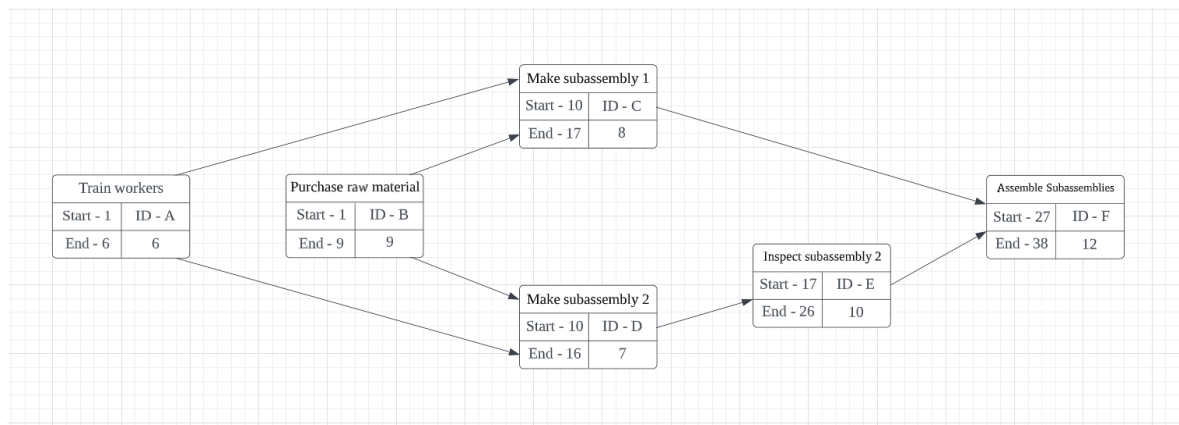
3. Multiple Predecessor Task

- The task that required two or more task to be executed prior to them is called multiple predecessor task. The start of a multiple predecessor task depends on the completion of two or more tasks that need to be executed.
- In the example of developing a software project, to perform integration of two or more modules, unit testing of the individual modules need to be performed.

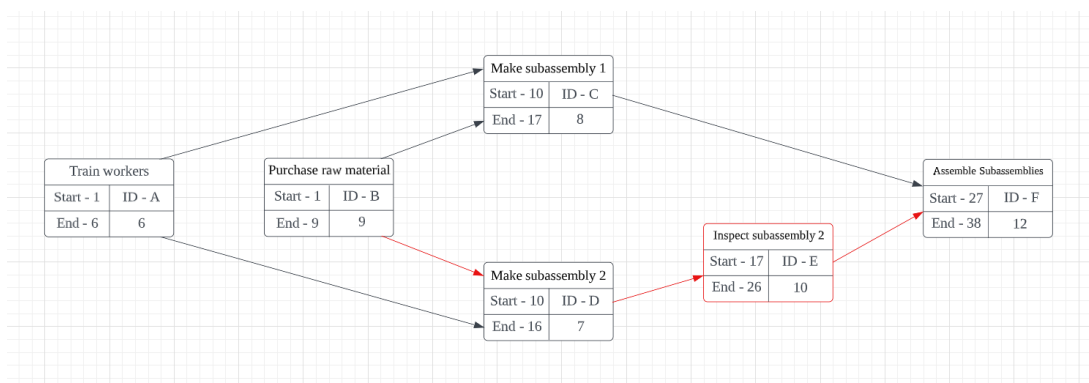
2. Widgetco is about to introduce a new product. A list of activities, their predecessors, and their durations is given in the following Table.

Activity	Predecessors	Duration(days)
A – Train workers	-----	6
B – Purchase raw materials	-----	9
C – Make subassembly 1	A,B	8
D – Make subassembly 2	A,B	7
E – Inspect subassembly 2	D	10
F – Assemble Subassemblies	C,E	12

- a) Draw a project diagram (PERT chart) for this project?



- b) What is the total project time?
- 38 days
- c) What is the earliest time to complete this project?
- Path: A-C-F
 - $6+8+12 = 26$ days
- d) What is the critical path?
- B-D-E-F



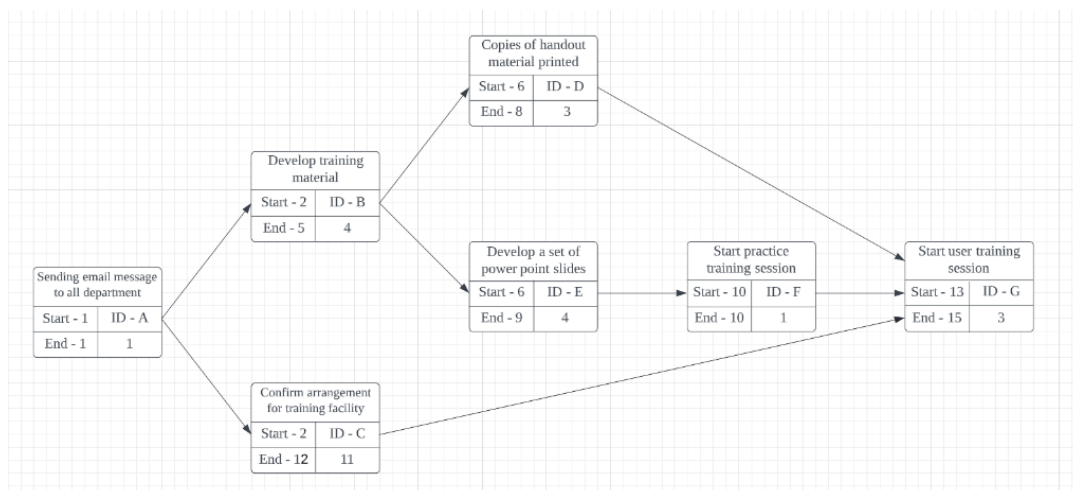
3. At Expert Financial, where you work as a project manager, you have been asked to conduct user training sessions during the implementation phase for a new information system. You must develop a specific schedule for the tasks (the estimated task duration for each is shown in parentheses):

- First, you need to send an email message to all department managers announcing the training sessions (1 day).
- After the email message goes out, two task can begin at the same time: You can develop the training material (4 days) and confirm arrangements for the training facility you plan to use (11 days).
- As soon as the training material complete, you can work on two tasks at once: Arrange to have copies of handout material printed (3 days) and develop a set of PowerPoint slides (4 days).
- When the PowerPoint slides area ready, you can conduct a practice training session with the instructor who will assist you (1 day).
- Finally, when the practice session is over, the handout material is ready, and the training facility is confirmed, you conduct the training sessions (3 days).

a) Prepare a table showing all tasks and their durations.

Activity	Predecessors	Duration(days)
A – Sending email message to all department	-----	1
B – Develop training material	A	4
C – Confirm arrangement for training facility	A	11
D – Copies of handout material printed	B	3
E – Develop a set of power point slides	B	4
F – Start practice training session	E	1
G – Start user training session	F,D,C	3

b) Create PERT/CPM chart.



c) Calculate the critical path.

1. Path 1: A-B-D-G

- $1+4+3+3 = 11$ days

2. Path 2: A-B-E-F-G

- $1+4+4+1+3 = 13$ days

3. Path 3: A-C-G

- $1+11+3 = 15$ days

- Path 3: A-C-G is the critical path.

