Lecture No: 7 PERT Chart

PERT method (Program Evaluation and Review Technique) is developed by the Ministry of Defense of the USA in 1958 in the framework of the project Polaris. PERT diagram is one of the tools for project management. With its help it is possible to analyze the time which is necessary for project execution and the consequence of tasks which involved into the project. The main advantage of such diagram type over the other diagram types is the possibility of calculation of the project fulfillment critical path that is the consequence of tasks which has the minimal float for execution and on which the total time for the whole project execution depends. If the task on the critical path is delayed than the execution of the whole project is delayed. There for it is important to calculate the critical path of the whole project execution and pay the most attention to tasks which appear on this way.

It should be considered that PERT diagram **does not** give you ready concrete decisions but it helps you to find these decisions.

PERT diagram is constructed by definite rules. It represents the set of tasks, connected between each other in the consecution of their execution.

There are two variants of PERT diagram construction. In the first variant the duration is denoted on arrow connecting diagram nodes. Such diagram type is called **AOA (activity on arrow).**

The second type of PERT diagram is called **AON (activity on node).** In such diagram the information about the task duration is denoted in the diagram node and each task is represented in the form of rectangle with the definite set of fields. These are the task name, duration, early and late starts and early and late finishes of the task and also the float for execution of the given task.

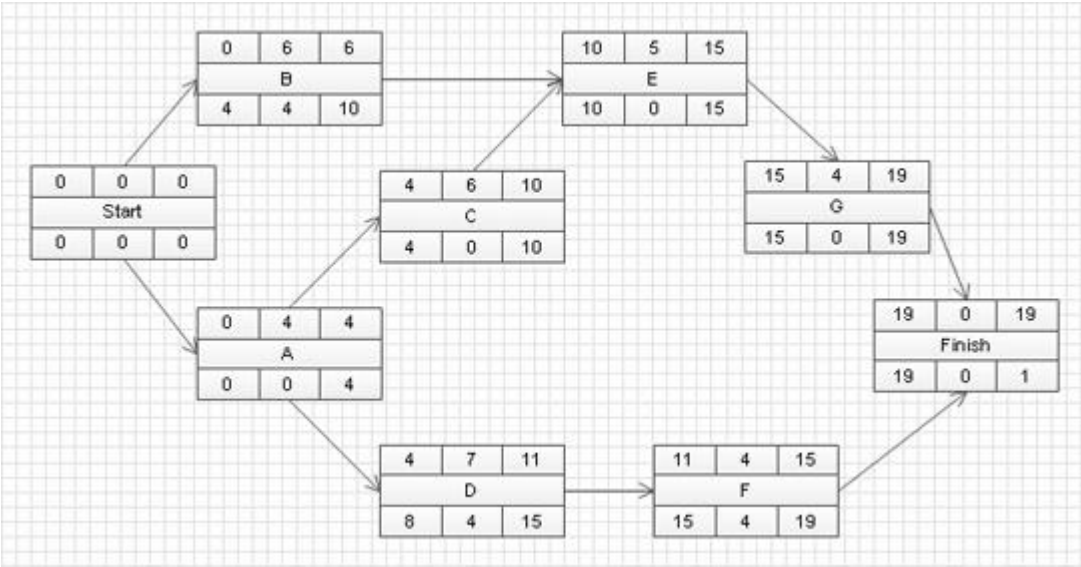
Early Start	Duration	Early Finish
Task Name		
Late Start	Slack	Late Finish

Pic 1. PERT Diagram — AON (activity on node)

PERT diagram starts from the task which does not have duration and does not use resources and presents just a project start. This is done to denote the common start of the project as starting from the first day of the project several tasks are starting simultaneously. Analogously PERT diagram finishes with the task “finish”.

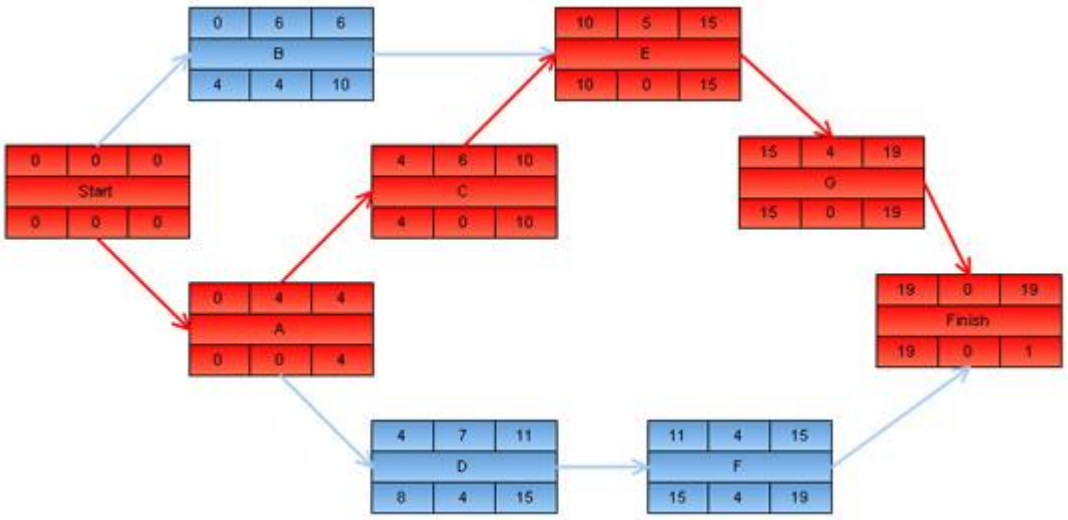
0	0	0
Start		
0	0	0

Pic 2. PERT Diagram

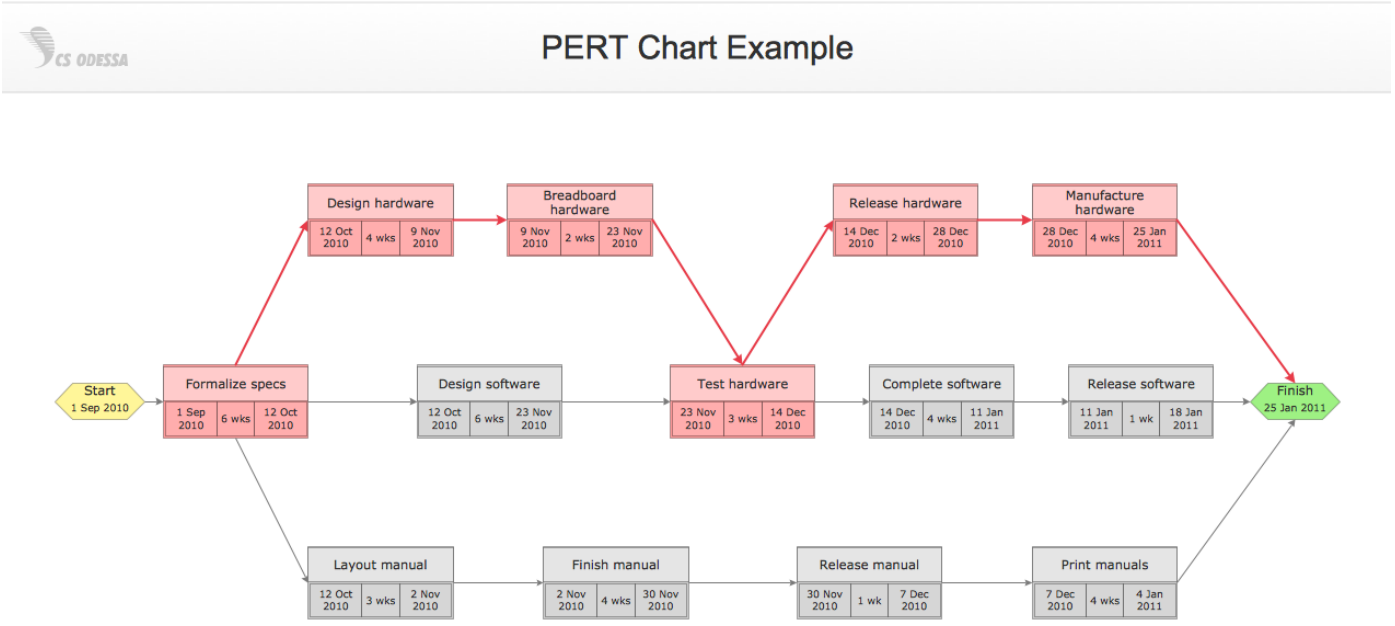


Pic 4. PERT Diagram with ConceptDraw

Task appeared on the calculated critical path are marked out with red color. This way any person is able to see at once tasks which require special attention.



Pic 5. PERT Diagram — Critical Path



Pic 6. Program Evaluation and Review Technique (PERT) Diagram — Software Development Plan