

Software Project Management Lecture-6

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Activity Planing

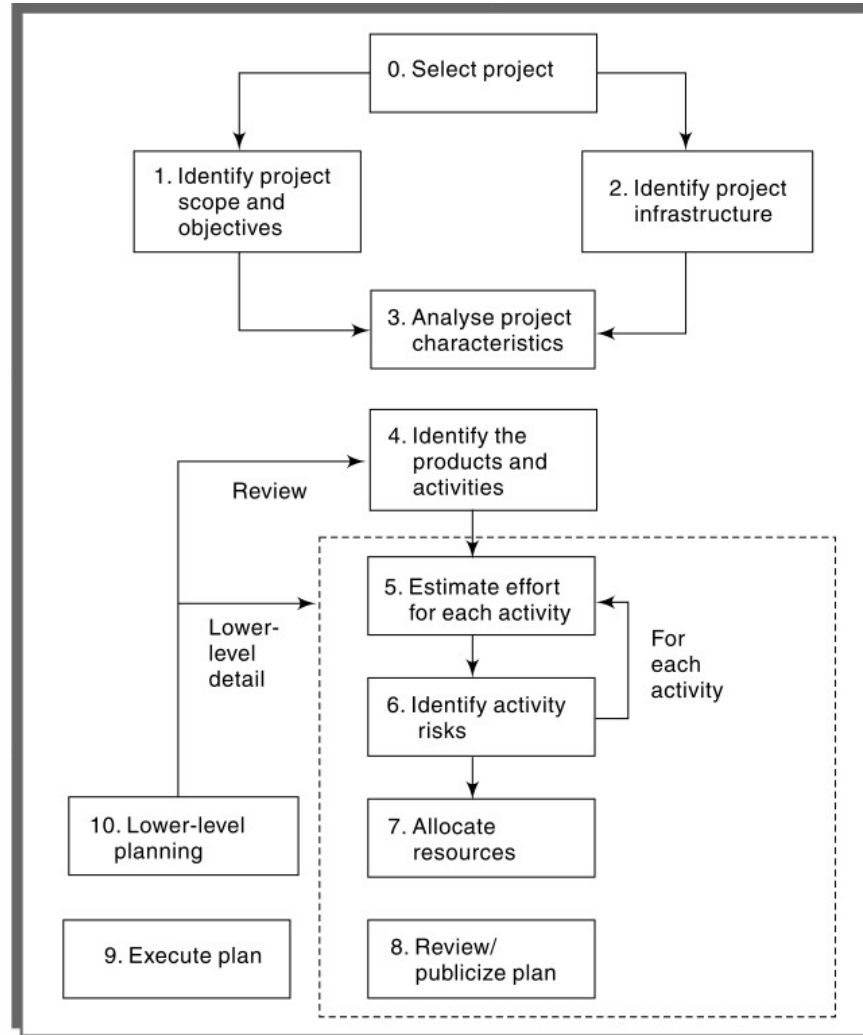
- Project and Activities
- Identifying Activities

Network planning Models

- Critical path

Activity Planing

Step-Wise Project Planing Framework



An overview of Step Wise

Activity Planning

Activity planning and scheduling techniques place an emphasis on completing the project in a minimum time at an acceptable cost or, alternatively, meeting a set target date at minimum cost.

Projects and Activities

A project is composed of a number of interrelated activities.

A project may start when at least one of its activities is ready to start.

A project will be completed when all of the activities it encompasses have been completed.

An activity must have a clearly defined start and a clearly defined end-point, normally marked by the production of a tangible deliverable.

Projects and Activities

If an activity requires a resource (as most do) then that resource requirement must be forecastable and is assumed to be required at a constant level throughout the duration of the activity.

The duration of an activity must be forecastable – assuming normal circumstances, and the reasonable availability of resources.

Some activities might require that others are completed before they can begin (these are known as precedence requirements).

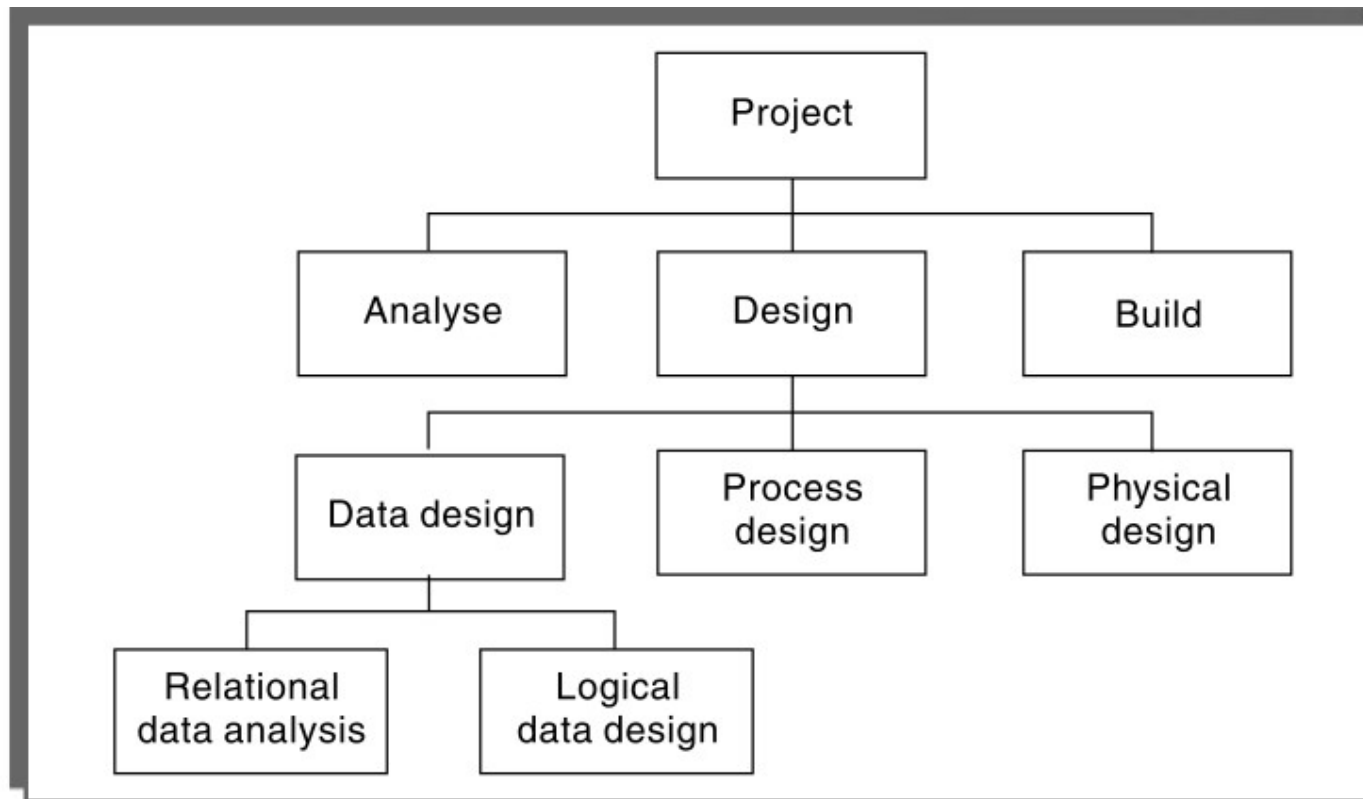
Identifying Activities

There are three approaches to identifying the activities or tasks that make up a project –

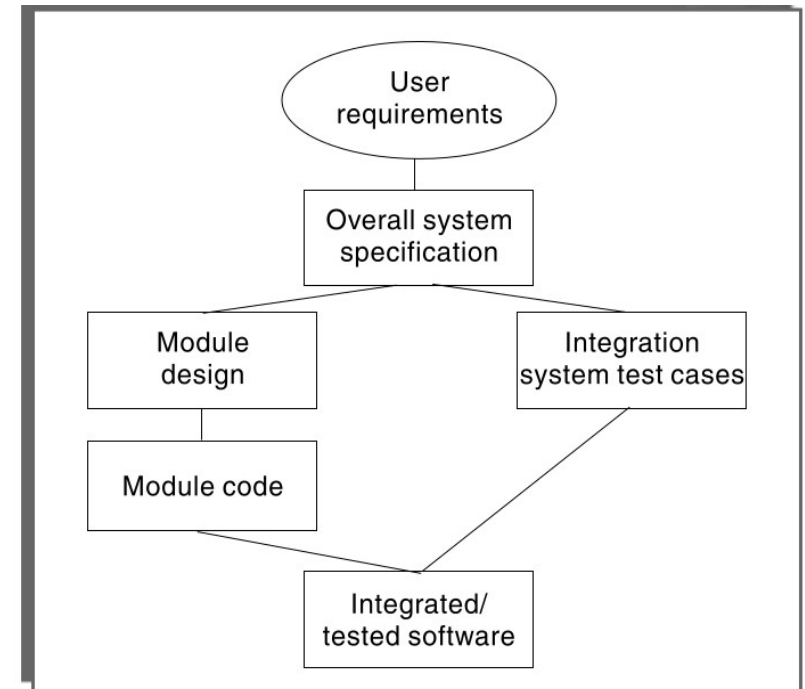
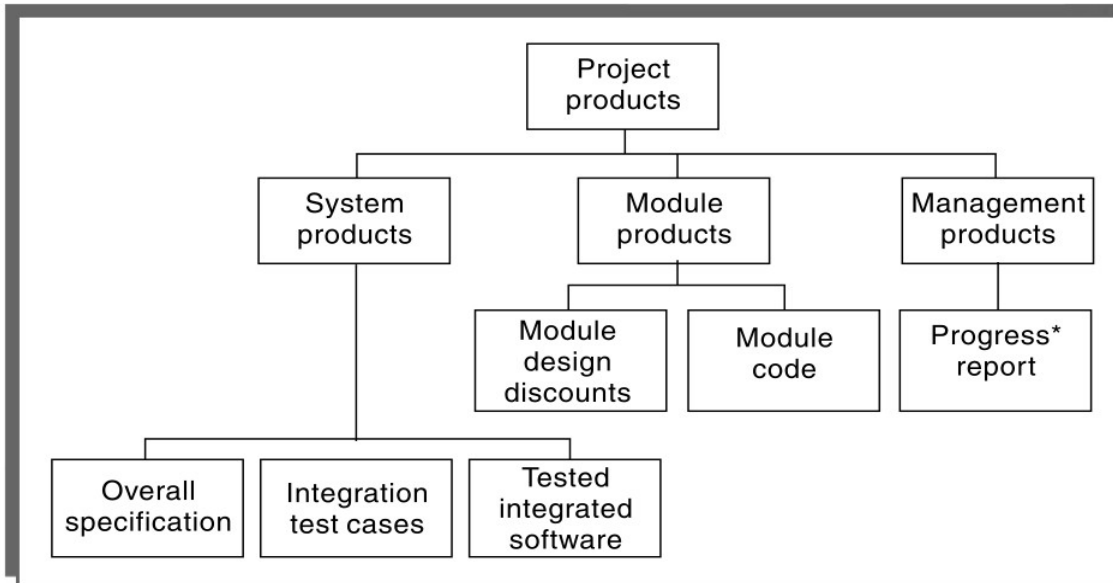
- Activity-based approach,
- Product-based approach
- Hybrid approach.

Activity based Approach

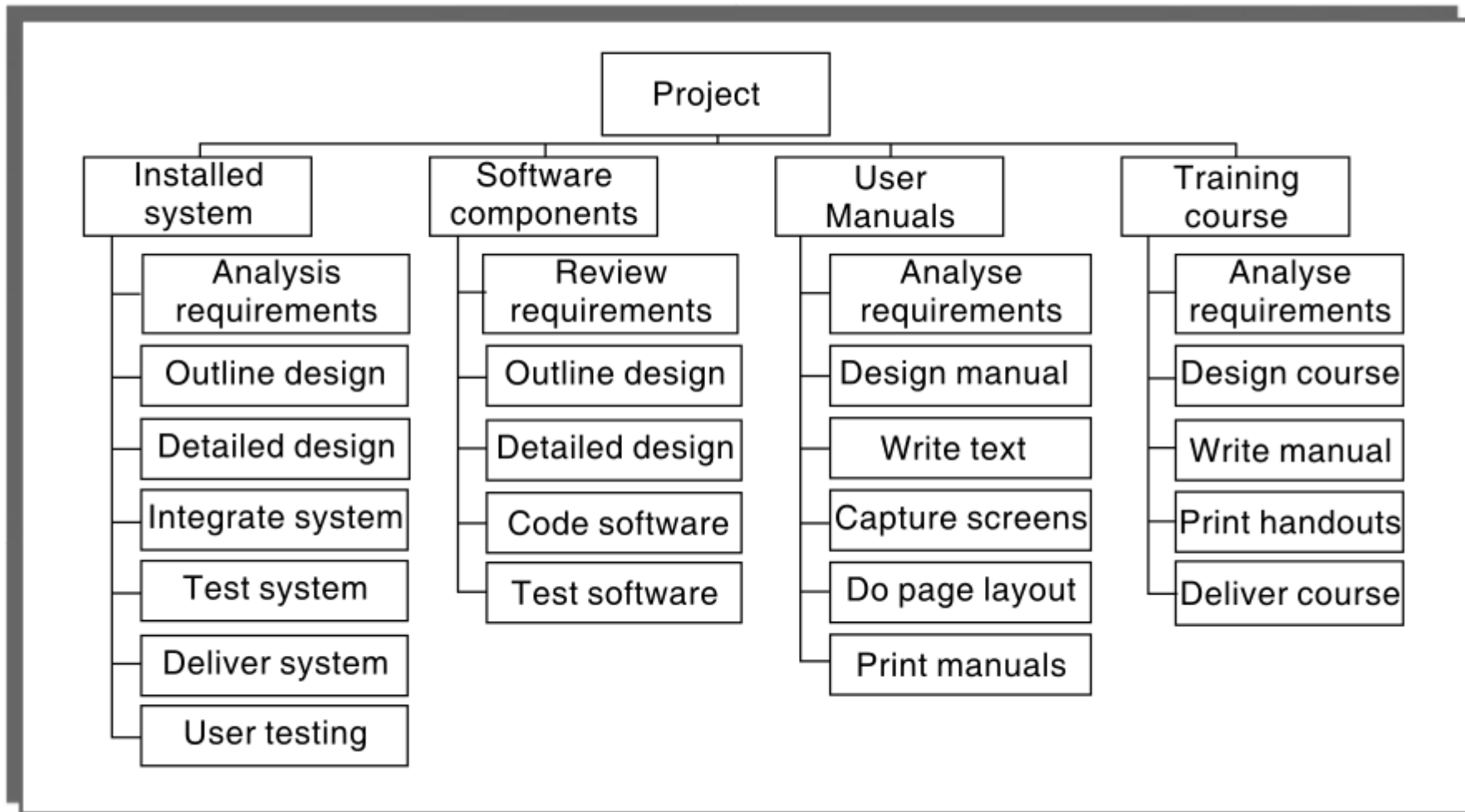
The activity-based approach consists of creating a list of all the activities that the project is thought to involve.



Product based Approach



Hybrid Approach



Sequencing and Scheduling

Task: Person \ Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13
A: Andy	■												
B: Andy		■											
C: Andy			■										
D: Andy				■									
E: Bill			■	■	■	■							
F: Bill						■	■	■	■				
G: Charlie				■	■	■	■	■					
H: Charlie									■	■			
I: Dave										■	■	■	■

Activity key

A: Overall design
 B: Specify Module 1
 C: Specify Module 2
 D: Specify Module 3
 E: Code Module 1

F: Code Module 3
 G: Code Module 2
 H: Integration testing
 I: System testing

Network Planning Models

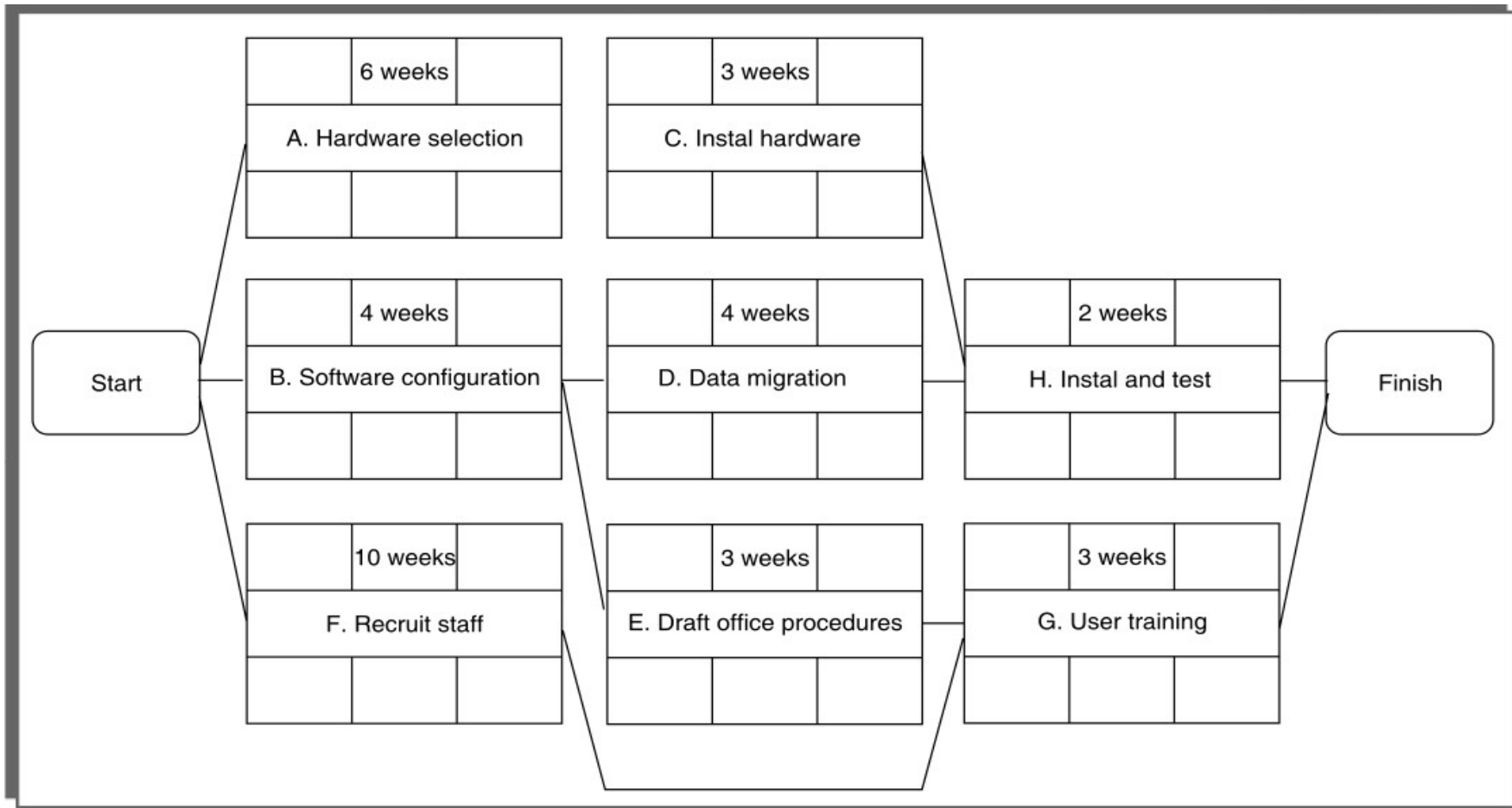
Network Planning Models

An example project specification with estimated activity duration and precedence requirements.

	Activity	Duration (weeks)	Precedents
A	Hardware selection	6	
B	System configuration	4	
C	Instal hardware	3	A
D	Data migration	4	B
E	Draft office procedures	3	B
F	Recruit staff	10	
G	User training	3	E, F
H	Instal and test system	2	C, D

Network Planning Models

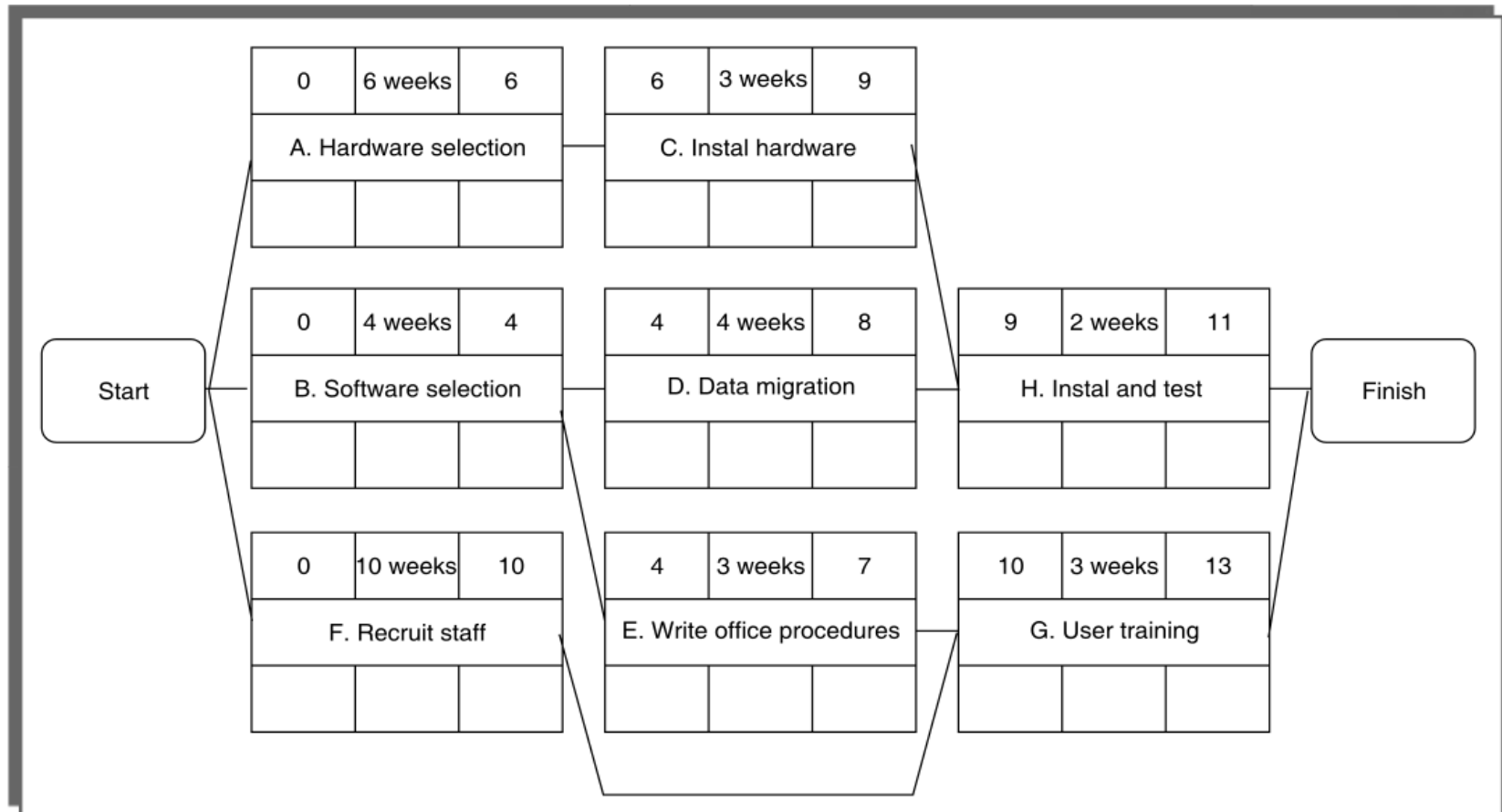
Precedence Network.



Network Planning Models

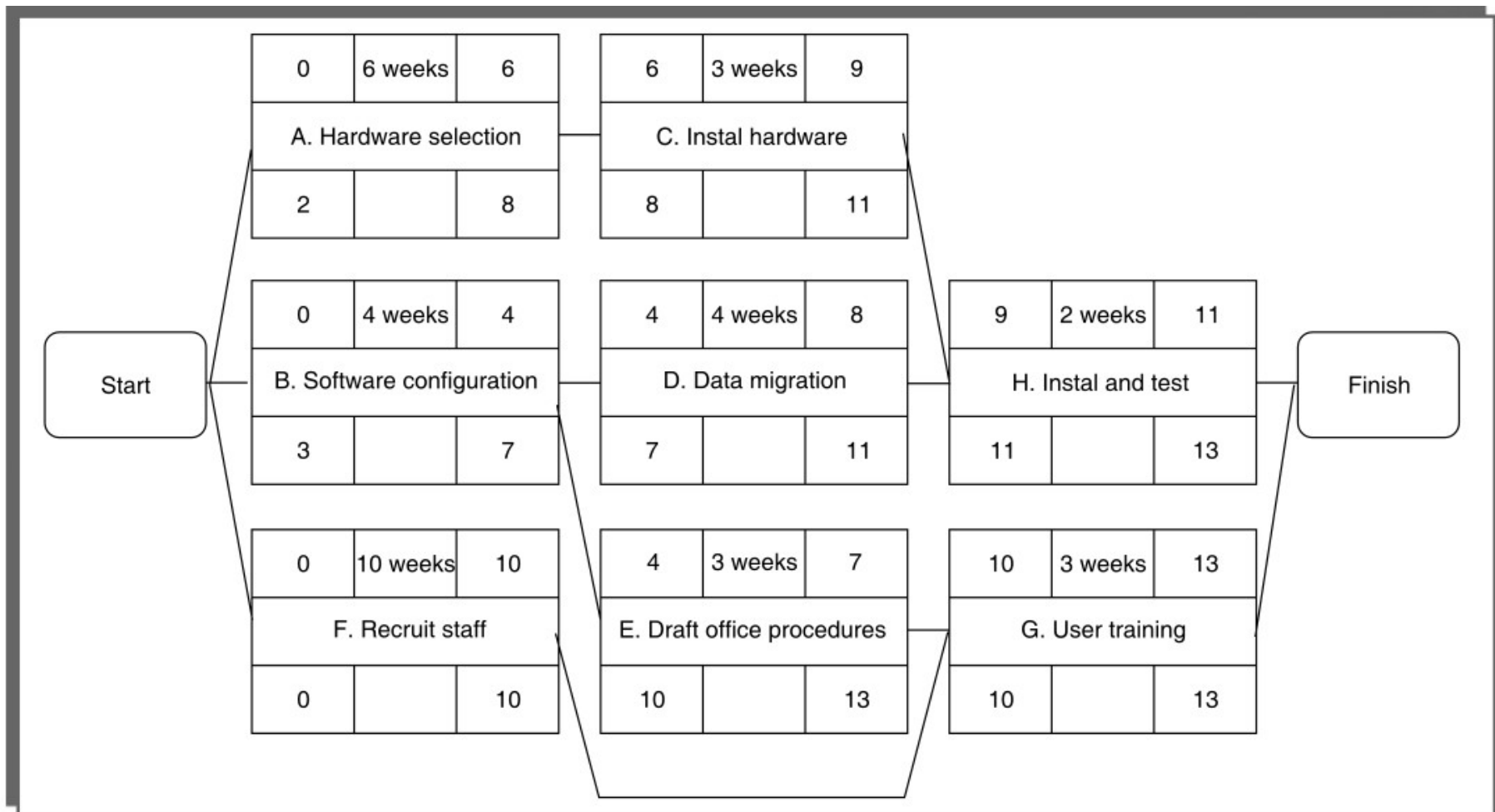
Forward Pass:

The forward pass is carried out to calculate the earliest dates on which each activity may be started and completed.



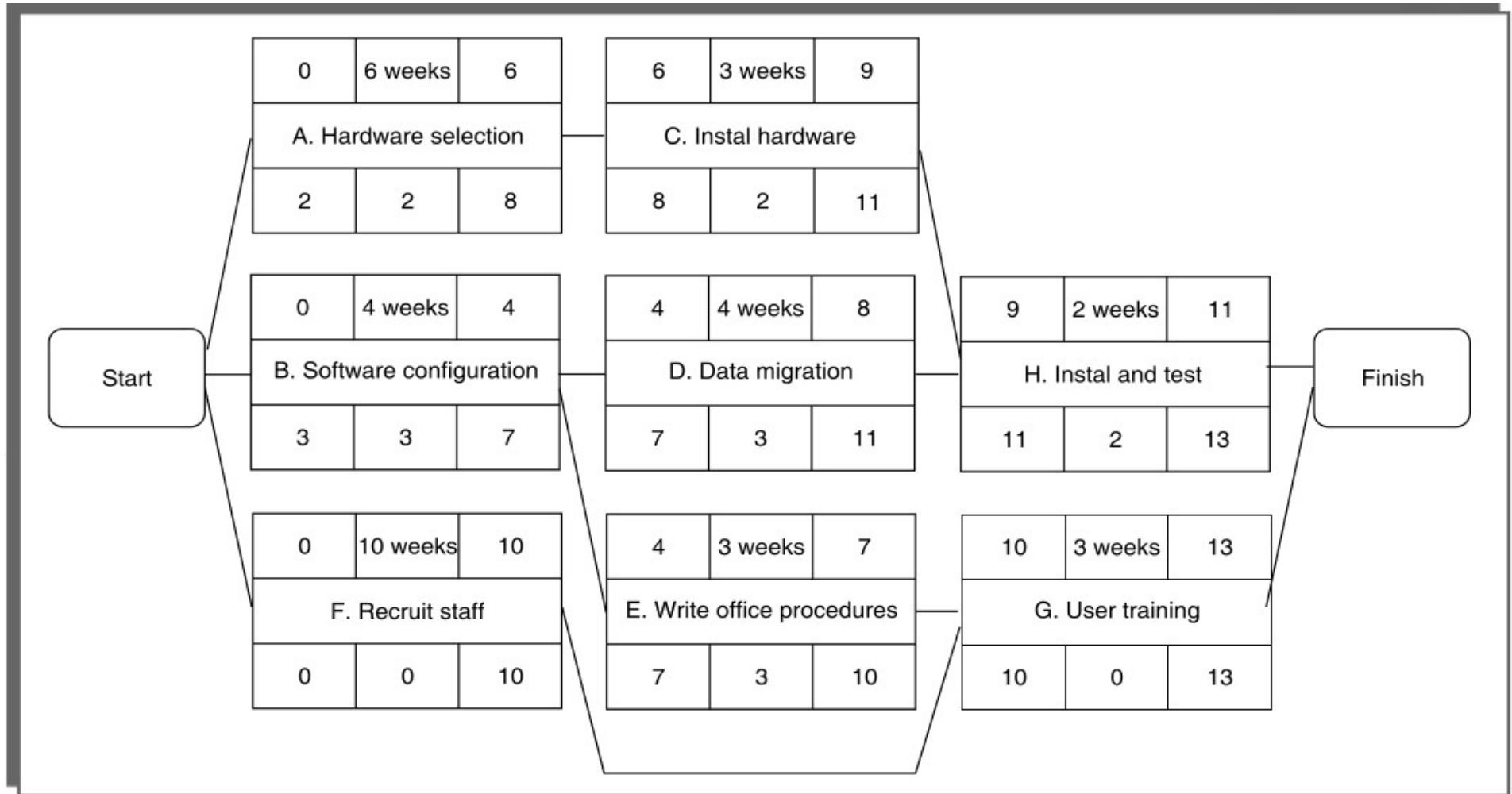
Network Planning Models

Backward Pass: There is some mistake in the network



Network Planning Models

Critical Path:



Network Planning Models

Activity Float:

Activities A and C each have 2 weeks' total float. If, however, activity A uses up its float (that is, it is not completed until week 8) then activity B will have zero float (it will have become critical).

In such circumstances it may be misleading and detrimental to the project's success to publicize total float!

Network Planning Models

There are a number of other measures of activity float, including the following:

Total Float:

The maximum amount of time an activity can be delayed without delaying the project completion date.

Free Float:

The amount of time an activity can be delayed without delaying the start of any succeeding activity.

Interfering Float:

The part of total float that, if used, would delay the start of some succeeding activities but not the project completion.

Network Planning Models

Activity Float:

Activity	Total float	Free float	Interfering float
A	2	0	2
B	3	0	3
C	2	0	2
D	3	1	2
E	3	3	0
F	0	0	0
G	0	0	0
H	2	2	0