**Creating a
Project Schedule**

Module 7

7 -1

Instructor Notes

This module refers to pages 45-49 in the Learning Log.

Objectives of This Activity

Using the documents provided, teams develop network diagrams for their projects. They also identify the float and critical path, using forward and backward passes
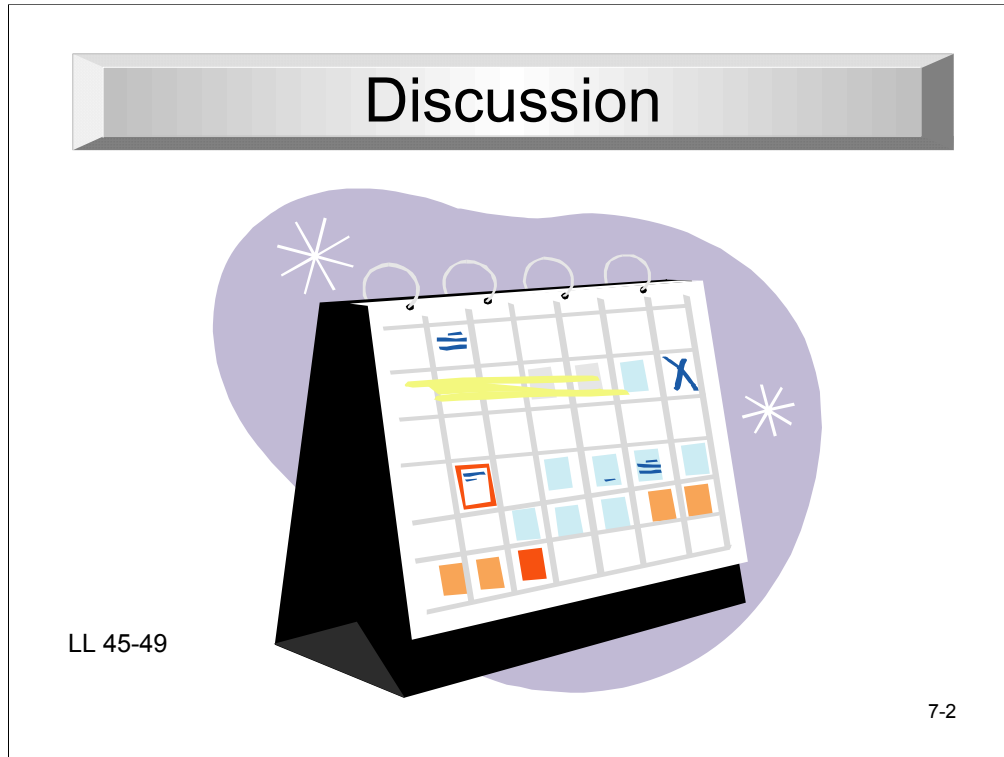
Module 7 Timing

This module lasts for 1 hours and 45 minutes, 15:25 - 17:10, on day 2 and from 8:30 – 8:50 on day 3.

Start	End	Length	Subject
15:25	15:45	20	Discussion
15:45	16:00	15	Critical Path Activity
16:00	16:10	10	Debrief
16:10	17:10	60	Scheduling Activity
17:10	17:30	20	Reflections on Day 2
Day 3			
08:30	08:50	20	Debrief and PM Feedback
08:50	09:10	20	Reflections on Day 2

On Day 3 Start the day with the Module 7 Debrief then do the Review of Day 2.

The documents for this module are in Case Study Book Module 7

•Critical Path exercise

•Case Study 7-1 Perry Fields memo on Scheduling Work

•Case Study 7-2 Pat Petersen memo on Resources Available for Logistics Support

There is one handout

•Handout 7-1 Critical Path exercise solution

Discussion

LL 45-49

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The objectives of this module are:
• Create precedence diagrams
• Define and document the relationships in the precedence diagram
• Calculate the forward and backward pass
• Define the critical path
• Create schedules from the precedence diagrams
• Describe the criteria and signs for the Work and Schedule are Predictable key
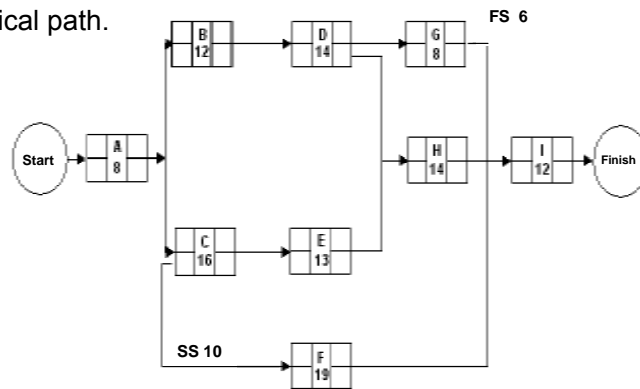
Facilitate a discussion covering topics such as:
• Learning objectives for the module
• Why do we create precedence diagrams?
• Share personal experiences on:
    • What happens when you create precedence diagrams?
    • What happens when you do not create precedence diagrams?
• What are the different dependencies between activities?
• What is the critical path?
• How do you know if an activity is on the critical path?
• Answer questions the participants have about PM Orientation

Critical Path Exercise

Work individually to complete this exercise:

1. Calculate the forward and backward passes.
2. Calculate the float for each path.
3. Define the critical path.

Objectives of This Exercise

Complete a precedence diagram

Summary of Documents

The Case Study Book contains one page:

Critical Path Exercise

Handout to pass out after the presentations:

Handout 7-1 Critical Path Exercise Solution

Further Instructions to Teams

Students should work independently until they need assistance.
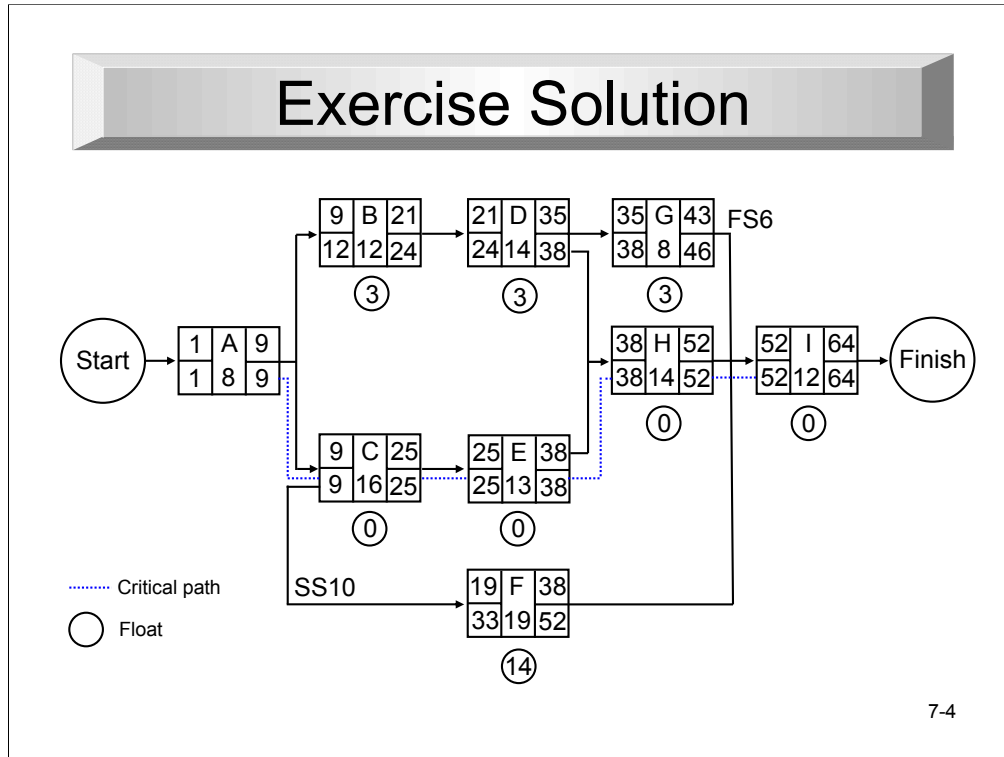
Students on the same team can assist each other, or the instructor can assist

Calculate the forward and backward passes
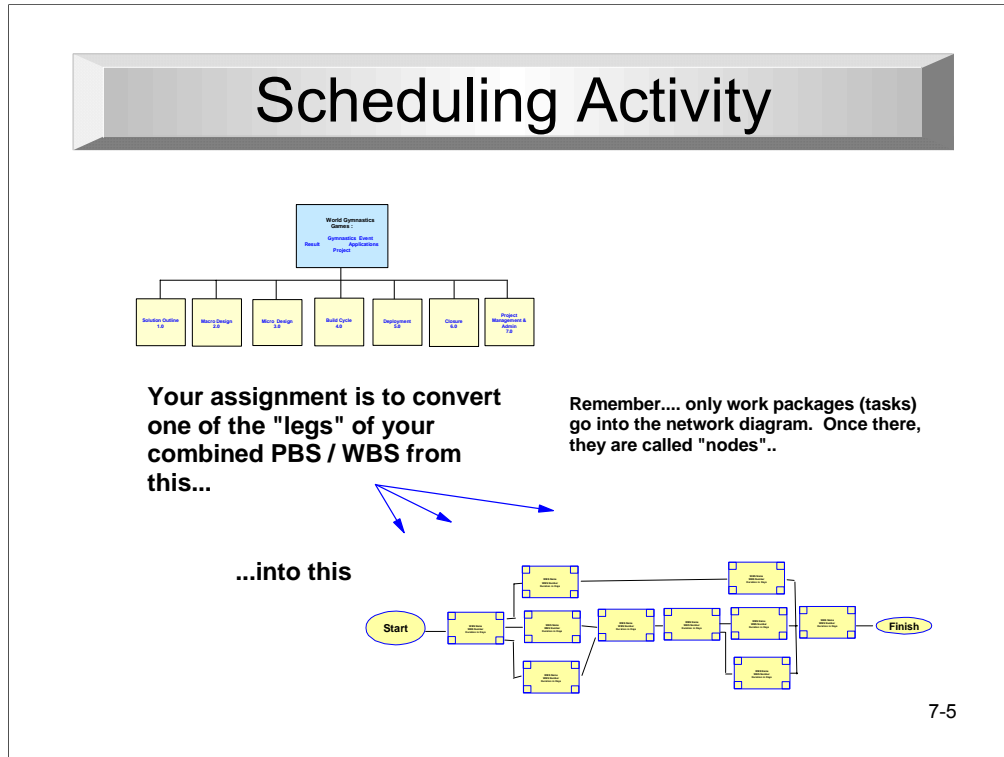
Calculate the float for each path

Identify the critical path

No more than 15 minutes allowed, including questions.

Exercise Solution

Walk through the forward pass, backward pass and float calculations. Identify the critical path.

Pass out Handout 7-1 will the solution.

Objectives of This Activity

Using the documents provided, teams develop network diagrams on **one leg of their WBS**. They also identify the critical path, using forward and backward passes; identify float; perform some network analysis; and identify near-critical paths.

Each team should select a different leg of the project ie. Solution Outline, Macro Design, Micro Design, Build Cycle, Deployment, Closure or Project Management

Summary of Documents

There are two documents in the Case Study Book:

•Case Study 7-1 Perry Fields memo on Scheduling Work

•Case Study 7-2 Pat Petersen memo on Resources Available for Logistics Support

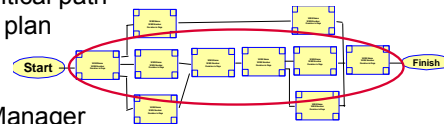## Documents from Previous Modules That Teams Should Use

Documents in earlier modules contain information about logical relationships, test event dates, Games dates, and system integration test dates. The System Solution Outline document in Module 3 contains information relative to the timing for performing some software design and development tasks.

Scheduling Activity

Purpose: Practice developing a precedence diagram and identifying the critical path.

Process:
1. Using the work breakdown structure you defined earlier, develop a precedence diagram for the tasks in one "leg" of your WBS
2. Calculate the forward pass
3. Calculate the backward pass
4. identify float, critical path, and near-critical path
5. Identify new risks and update the risk plan

Participation: Team led by the Project Manager

Product: Completed precedence diagram
Be prepared to present your answer to the class.

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Further Instructions to Teams

To change PMs and Observers

To document all assumptions about scheduling.

Teams should review and adjust their risk management plans based on the new scheduling information.

To adjust their WBS, if needed. Teams should use the WBS they created in the WBS case study exercise.

That they have as staff resources only the six people on the team, and no other staff resources are available.

That the fixed start dates must be met; events must start on time. To develop a schedule assuming today is May 13th and there are 7 months until the Games begin.

That every activity, except for the first and last activities, must have a predecessor and a successor.

That they have 1 hour to complete the case study**.**

Points to Be Aware of in Documents

The Scheduling Work and Other Items memo mentions that the only integration system test that has been scheduled is for the women's gymnastic event code,. No similar test has been scheduled for the men's gymnastics event code, or any available external interfaces.

During Team Presentations

Ask the teams to present their solutions. When the first team finishes, ask the other teams to compare their diagrams with the one that was presented.

Make sure the presenting team has identified the critical path, the near-critical path and any new risks.

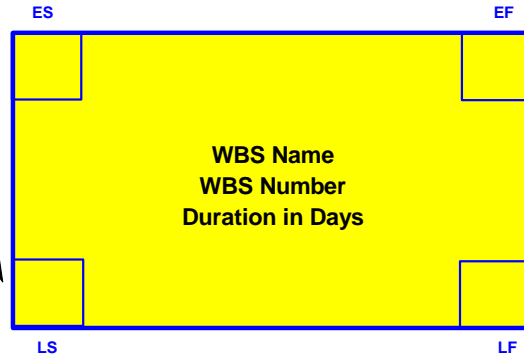The resources for setting up and tearing down the equipment are finite resources.

Ask the following questions:

•Will the team have any problem meeting the fixed dates for the test event and for the Olympic Games gymnastics competitions?

•Are there any near-critical paths?

•Are there any danglers in the network?

•Has the team adjusted the schedule based on the resources?

•Has the team added new risks and, as a result of the schedule, updated the risk plan?

Conventions

Each Yellow Post-it (node) should contain:

Draw boxes in each corner to prepare for your Forward and Backward passes

ES   EF

WBS Name
WBS Number
Duration in Days

LS   LF

Draw boxes in each corner to prepare for your Forward and Backward passes

7-7

Debrief

7-8

Debrief Activity

Explore what happened

•What issues did you have?

Explore what the participants learned

•What key things did you learn from this exercise?

•What advice would you give someone about to start this exercise?

Explore how the participants can apply the learning

•How often should you revisit your precedence diagram? (After approved changes)

•Who should be involved? (People who are close to the work (SMEs) should create the estimates and schedule)

•How should you communicate the schedule to the client and to your project team?

It is important to have the client formally approve the schedule. But it does not remain a static document. It may have to be updated when there are approved change requests.

There should already be a flip chart for each team capturing the health of the project from the previous module. Get the teams to update the flip for Module 5 based on their current knowledge of the Case Study project.

Get the teams to think about:

- The status (Green, Amber, Red)

- The issues behind any Yellow or Red keys

- What actions they could propose to resolve the issues

Ask one team to present back and then invite other groups to contribute if they have any major differences. Make a note of which team has presented back since another team should present back in the next module.

Pay particular attention to the Work and Schedule, Risk, Scope, Stakeholders, Business Benefits and Team keys since these are the main ones being addressed in this module.

PM Feedback

After the case study exercise:

- The PM describes what went well
- The team describes what went well
- The PM describes what could have been better
- The team describes what could have been better
- Hand the feedback forms to the PM

- After providing the PM feedback.   Document your lessons learned on page 50 of the Learning Log.
    - This should include any changes that you plan to make in your daily work as a result of this exercise.

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After teams have presented their results, give them a few minutes to provide feedback to the participant playing the PM for the activity.