Strategic Project Management Unit 4

Course Layout and Overview

- Seven units
  - Unit One: What is Project Management
  - Unit Two: The Project Lifecycle
  - Unit Three: Initiating Projects
  - **Unit Four: Planning Projects**
  - Unit Five: Executing Projects
  - Unit Six: Monitoring and Controlling Projects
  - Unit Seven: Closing Projects

Unit 4 Learning Outcomes

Break down	break down the work required to complete a project and create a detailed project schedule
Decompose	decompose project deliverables into work packages
Demonstrate	demonstrate the use of appropriate network scheduling techniques such as Gantt, PERT, ADM, and CPM
Determine	determine the physical and human resources needed to complete a project
Determine	determine the cost of the resources needed to complete and deliver all project activities
Analyze	analyze final budget based on input of different stakeholders and approved financial resources
Prepare	prepare various project plans including scope, schedule, cost, risk, procurement, and quality

Why Are Learning Outcomes Important?

- Every learning outcome ties back to course materials and content.
- Assessments are tied to each learning outcome.
- Test Preparation

Unit Four Overview Topics

- Definitions
- Work Breakdown Structure
- Scheduling techniques
- Identifying resources
- Creating a preliminary budget
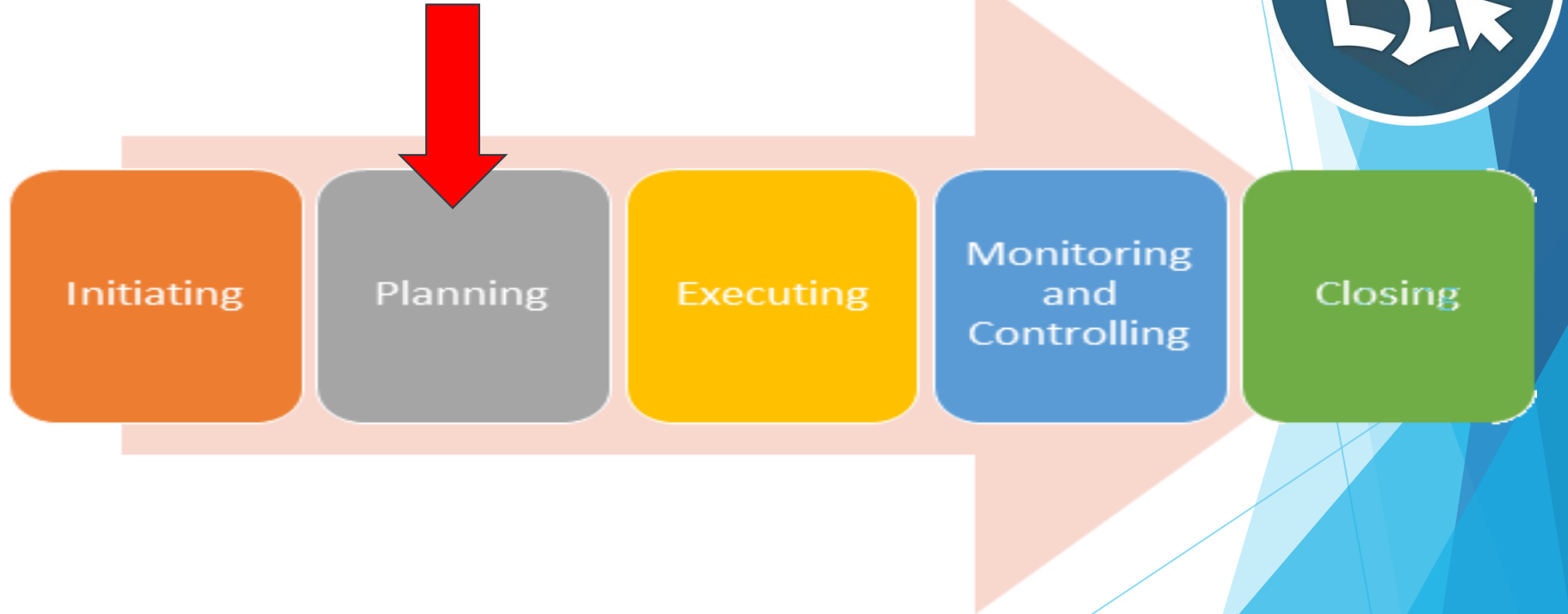- Creating project plans

Project Management Definitions

- Analogous estimates
- Bottom-up estimation
- Critical path
- Decompose
- Deliverable

- Parametric estimates
- Requirements
- Resource
- Slack

Project Life Cycle

Work Breakdown Structure (WBS)

Organize and track tasks

Scope of work

Schedule estimates

Resource requirements

Scope of Work - Project Deliverable

- **Functional** - describe what you want the deliverable to be able to do.
- **Non-functional** - describe what the deliverable must look like, what it must perform, or how it must be developed.
- **Technical** - describe how the deliverable should be developed technically or procedurally.
- **Business** - describe the needs of the business that the deliverable must satisfy.
- **User** - may be used to describe deliverable requirements such as the user interface or test cases.
- **Regulatory** - describes any laws or regulations that the deliverable must satisfy.

Track tasks - Decompose project deliverables

- Identify all tasks needed to complete the deliverables required of the project.
- Tasks should take no longer than 40 hours to complete
- Organized into a logical sequence

- **For example: Writing a report – Deliverable: report**

Decompose project deliverables – Writing a Report

- **Tasks:**
  - Research
  - Draft 1
  - Revisions
  - Draft 2
 - Complete

Network Scheduling techniques

- **Gantt:** provides a visual representation of the project timeline by using horizontal bars to chart project activity durations. The chart also depicts relationships between tasks.
- **PERT:** uses rectangles or nodes along with days to complete to represent tasks along the project. As there are often multiple paths through a project, the PERT chart provides a visual of all paths possible through the project.
- **CPM:** similar to the PERT, the critical path method identifies tasks, their dependencies, and how long they will take to complete. With this information, the project manager can calculate the longest path through the project. The tasks on the longest path are considered critical tasks because if there are delays in any of these tasks, the project will be delayed.
- **ADM/AON**: can be used to identify early start (ES), early finish (EF), late start (LS), or late finish (LF) impacts on tasks throughout the project.
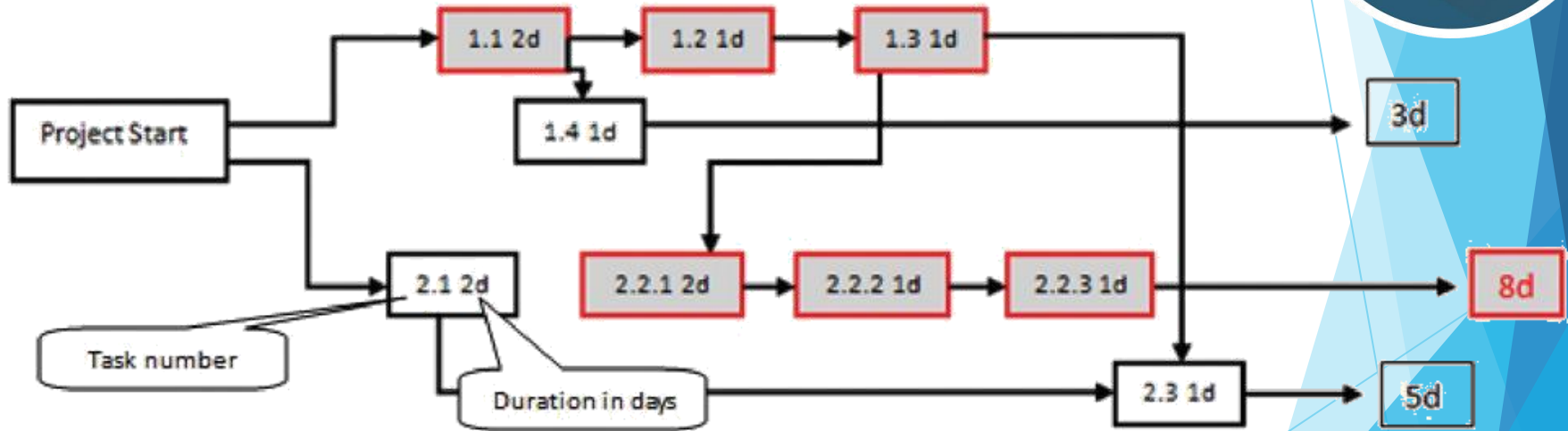
Gantt

Task Name	Q1 2019			Q2 2019		Q3 2019
	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul 19
Planning						
Research						
Design						
Implementation						
Follow up						

PERT
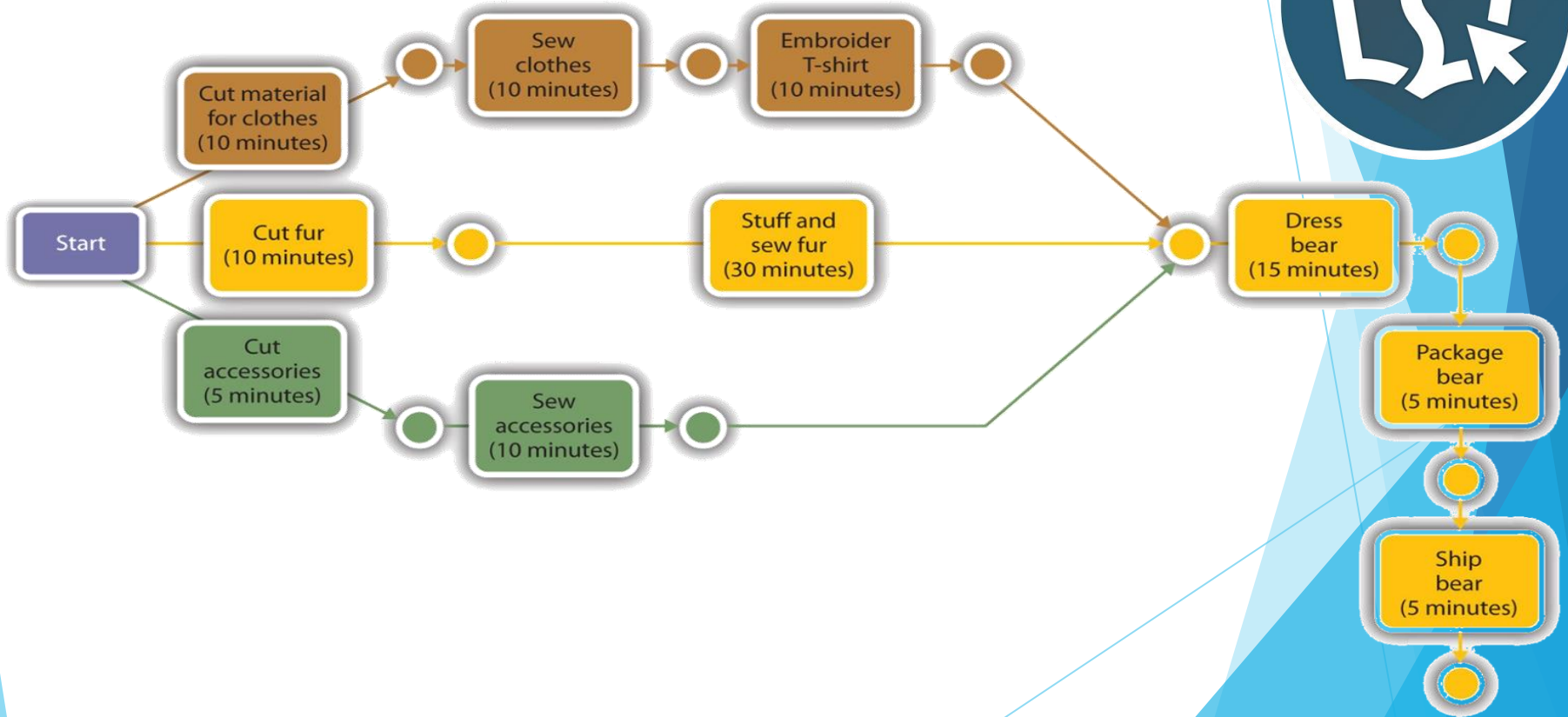
Critical Path Method

ADM/OAN

Critical Path Method - Start at Day 0 (Approach 1)
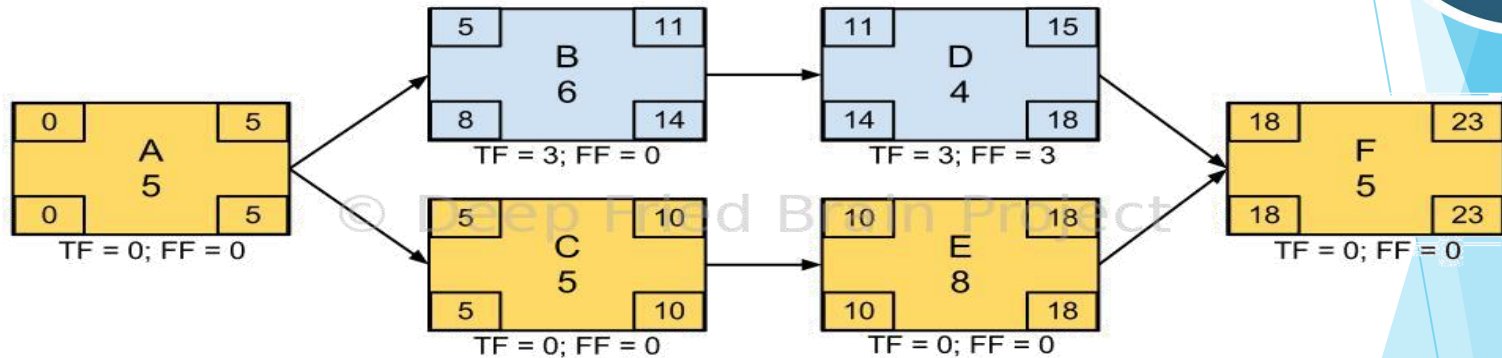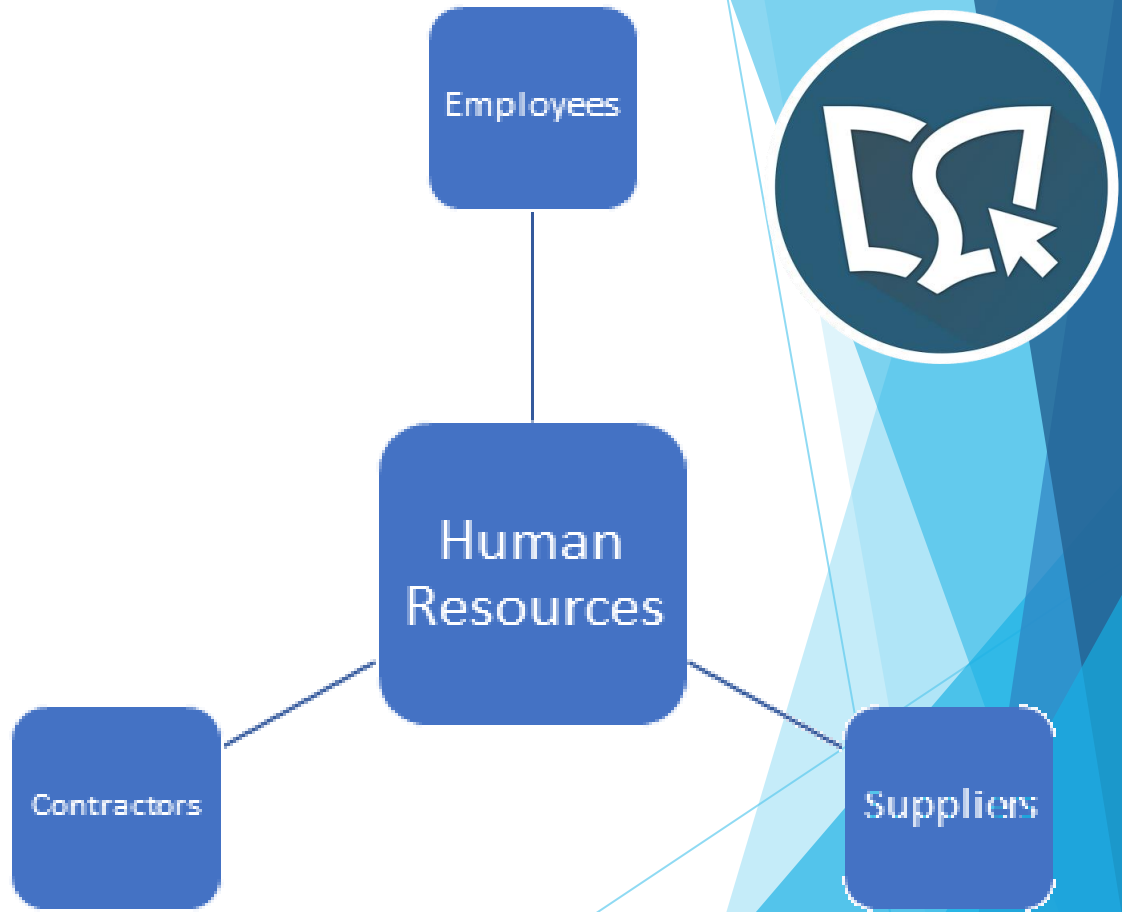
LEGEND

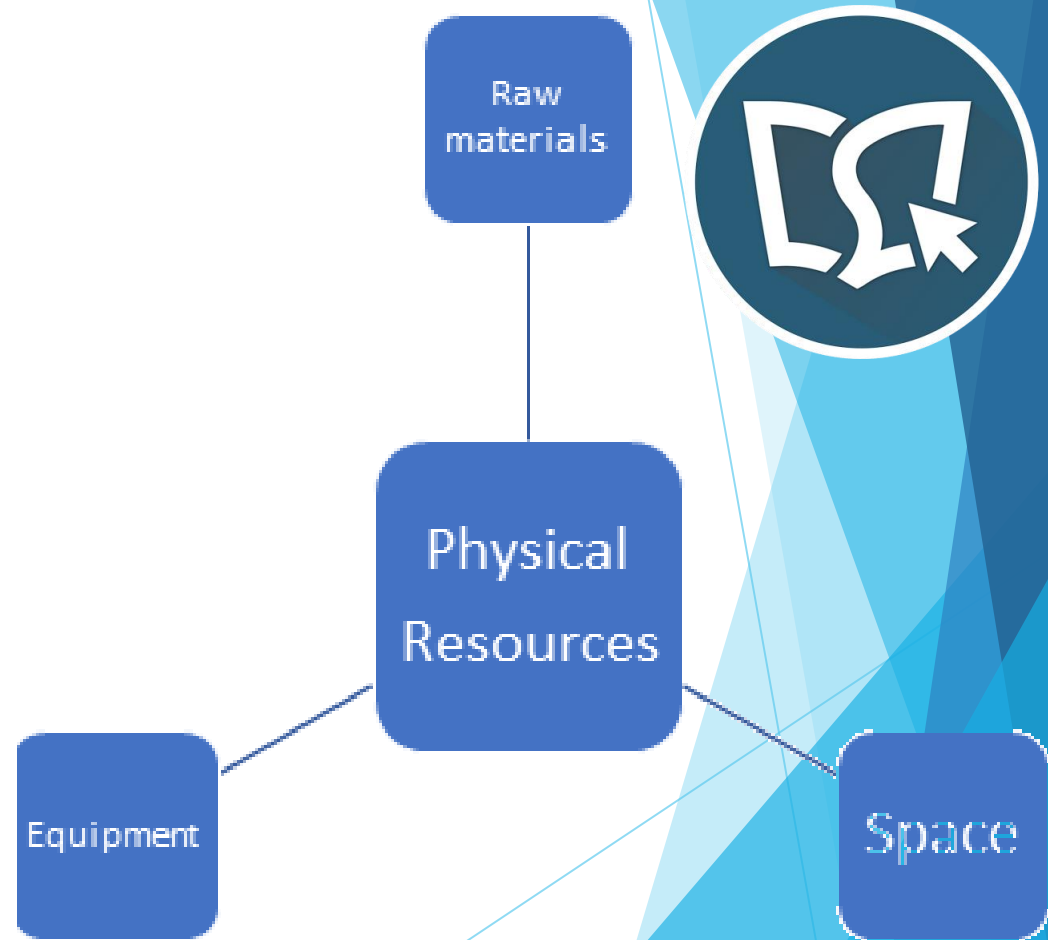| ES		EF
	Activity Name Duration (days)	
LS		LF

ES (Early Start) = EF of predesssor
EF (Early Finish) = ES + Duration
LS (Late Start) = LF - Duration
LF (Late Finish) = LS of successor

Total Float = LS - ES or LF - EF
Free Float = ES of successor - EF of present

Resources - Human

Resources - Physical

Raw materials

Physical Resources

Equipment

Space

Resources -costing out the task

- If a task is to frame the master bathroom and two carpenters are needed for 8 hours each at $35 per hour and $1400 worth of lumber and $100 worth of nails and other hardware are required, the project software will calculate the cost for the task as follows:

  - Labor (2 carpenters for 16 hours at $35 per hour each) - $560
  - Materials (Lumber and misc hardware) - $1400 + $100 = $1500

- The total cost of the task to frame the master bath would be $2,060.

Estimating resource costs

- **Analogous estimating** involves looking at other similar projects and assuming costs would be the same.
  - So in our example from earlier - if project B is similar in size to project A, we can extrapolate that it will cost us about the same amount.

Project	Description	Cost
Project A	Frame Master Bedroom	$2,060 actual
Project B	Frame Livingroom	$2,060 estimated

Estimating resource costs – Parametric estimating

- **Parametric estimating** involves looking at parameters such as square footage and estimating based on an average cost from other projects.
  - So in this example, we can extrapolate from what we paid to frame the bedroom to what it will likely cost us to frame the livingroom

Project	Description	Square Feet	Cost
Project A	Frame a bedroom	400 Sq ft	@2,060/400 = $5.15 per square foot
Project B	Frame a livingroom	700 sq ft	700 x 5.15 = $3,605

Estimating resource costs
- Bottom-up estimating

- **Bottom-up estimating** is accurate but time consuming because the team must look at the lowest level tasks and work back up to create the estimates.

Project	Cost
Frame Bedroom	$2,060
Frame Livingroom	$3,605
Install Shower	$9,600
Total cost	$15,265

Final Project Budget

- Accurate estimates
- Input from stakeholders

Project Management Plan

- Scope - what are the deliverables
- Budget - what will it cost
- Risk - what are the risks to the project
- Procurement - how will we obtain the resources we need
- Communication - how will we communicate with the team and the stakeholders
- Stakeholder management - what do we need to do to keep the stakeholders informed without letting them derail the project

Conclusion - Unit 4

- Learning objectives:
    - break down the work required to complete a project and create a detailed project schedule
    - decompose project deliverables into work packages
    - demonstrate the use of appropriate network scheduling techniques such as Gantt, PERT, ADM, and CPM
    - determine the physical and human resources needed to complete a project
    - determine the cost of the resources needed to complete and deliver all project activities
    - analyze final budget based on input of different stakeholders and approved financial resources
    - prepare various project plans including scope, schedule, cost, risk, procurement, and quality

What's next?