

**SWE30010**

# **Development Project 2: Design, Planning and Management**

Lecture 1a

Project Forces – Scope



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# Lecture Overview

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## ■ Project Forces and Concerns

- ☐ Scope
- ☐ Time
- ☐ Cost
- ☐ Quality



# Before We Start.....

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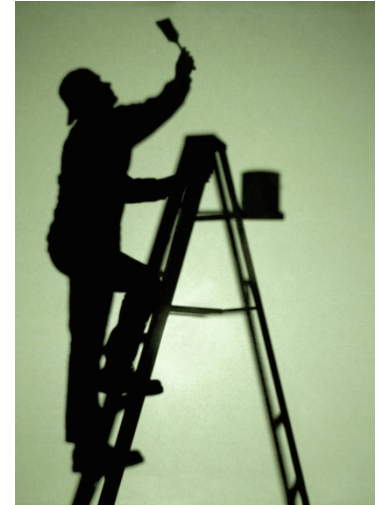


■ Assume you have to paint your bedroom

■ It requires

- ☐ removing all furniture from the room
- ☐ cleaning & repairing holes in walls and ceiling
- ☐ painting walls and ceiling
- ☐ removing carpet
- ☐ cleaning, staining and polishing the floor
- ☐ checking existing power points, and adding two new points
- ☐ putting the furniture back

SCOPE



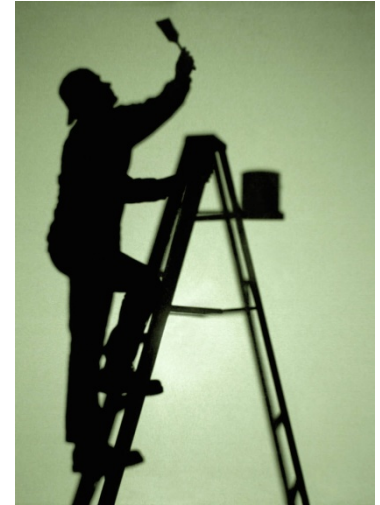
# Before We Start.....

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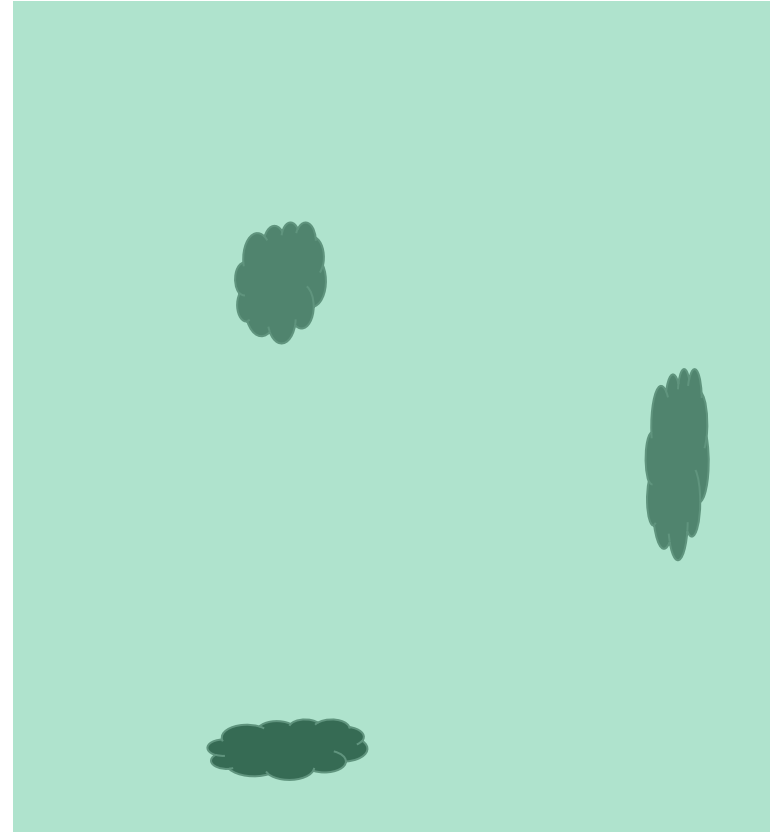
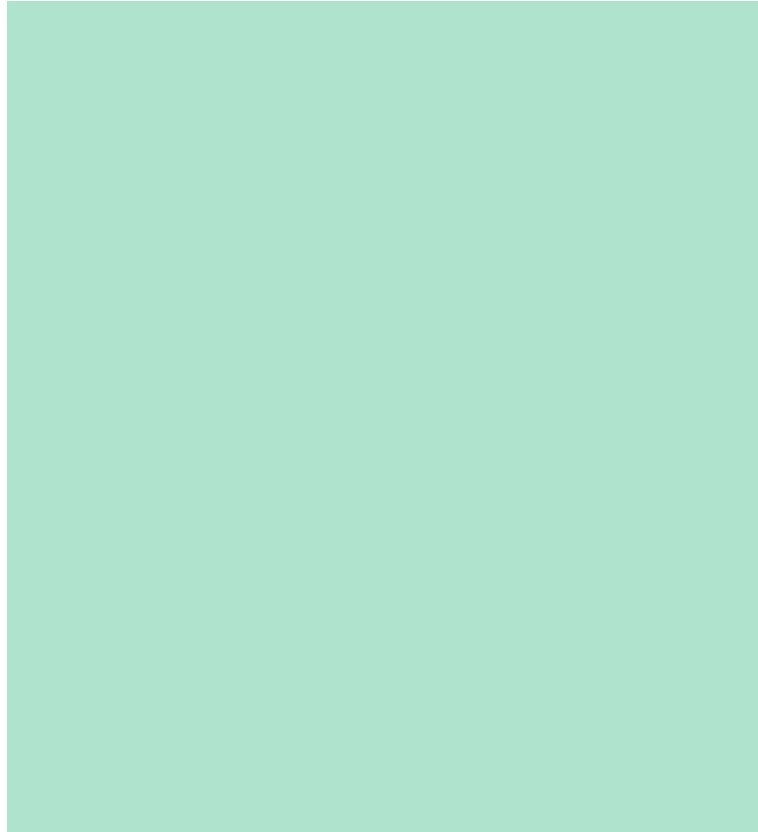
- The job has to be done
  - ☐ within the next 2 weeks
  - ☐ within the budget of \$1000
- How would you proceed? What are the issues?

TIME  
COST



# What do you expect afterwards?

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- Which one do you prefer?

QUALITY

# What if.....

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- you are doing it all yourself?
- you have a few mates capable of working with you?
- you do some calculations and discover it can't be done for \$1,000? If \$1,000 is really max, what would you do?
- it really **MUST** be done in 2 weeks, but after thinking it seems that it will take 3 weeks to do all the work?
- getting a professional in to help would let you finish in 2 weeks, but would take the cost over \$1,000?

# Roadmap

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## ■ Project Forces and Concerns

- ☐ Scope
- ☐ Time
- ☐ Cost
- ☐ Quality





# Project Forces

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- Think again about the bedroom renovation project:
- A certain set of **requirements** are specified
- The **time** allowed for their completion is given
- The maximum **cost** is given
- If you are sensible, you will specify the **quality** of work that is required

# Project Forces (cont)

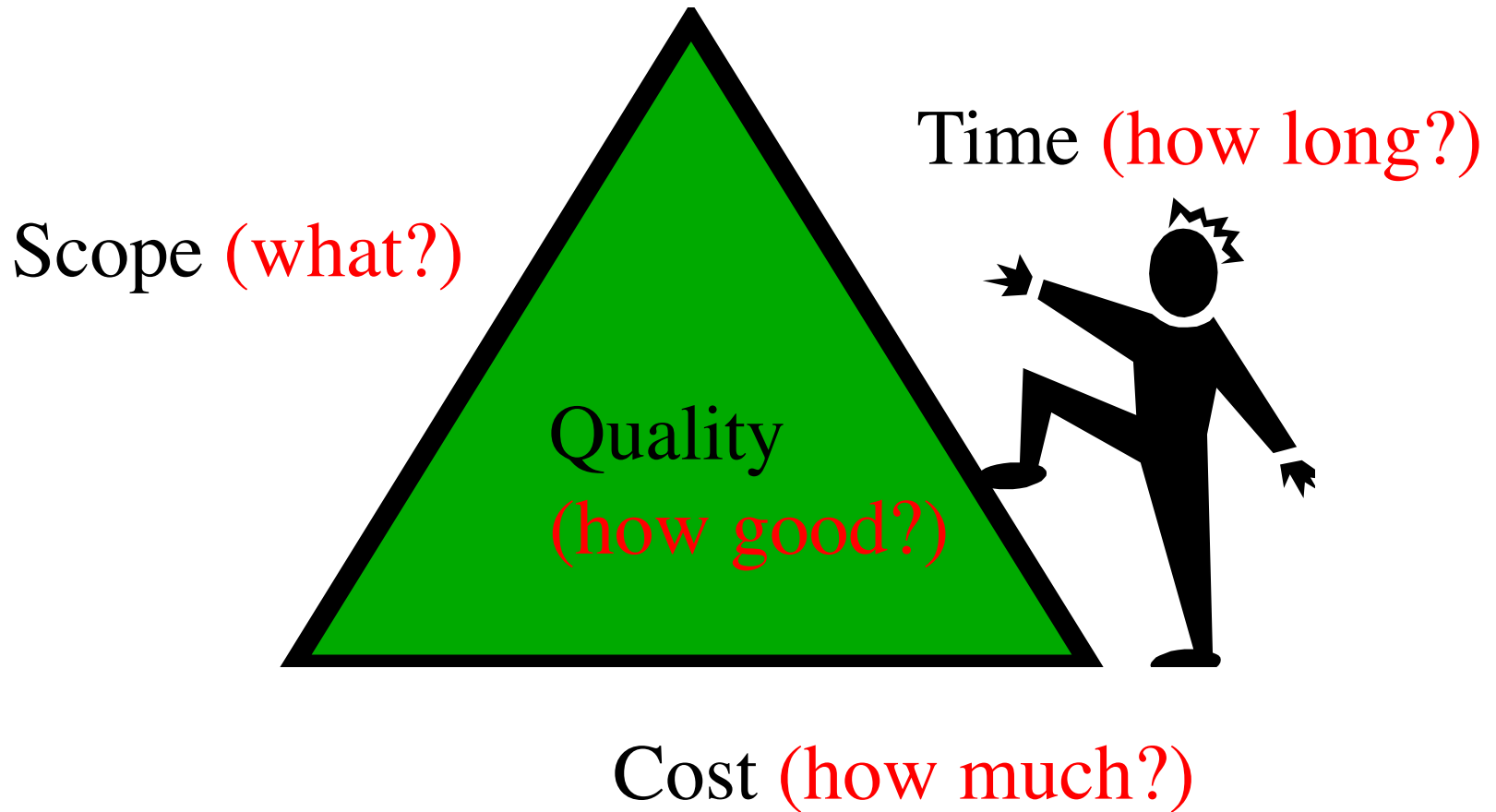
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Project Concerns =  
*Deliver the **right stuff***  
*to the **desired quality***  
***on time** and*  
***within budget***

# Project Forces (cont)

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# Project Forces (cont)

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*“The way the software development game is played is that stakeholders can pick the values of three of the four forces. The fourth value is a consequence of the choice of the other three values.”*

Kent Beck,  
eXtreme Programming Explained, 2000.





# Scope and Objectives

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In order to start a project, you must set clear *scope* and *objectives*

- Scope: *primary functions* software is to accomplish, bounded in a quantitative manner. It also includes the range of things that the project is to consider.
- Objectives: *general goals* of the project, not how they will be achieved

Goals must be *S.M.A.R.T.*

- Constraints, performance, reliability must be explicitly stated
- Customer must set *priorities*

# Scope: From wikipedia

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- **Scope statements** may take many forms depending on the type of project being implemented and the nature of the organization.
- The scope statement details the project deliverables and describes the major objectives. The objectives should include measurable success criteria for the project.

As a baseline, scope statements should contain:

- project name; project charter; project owner, sponsors, and stakeholders; problem statement; project goals and objectives; project requirements; project deliverables; project non-goals (what is out of scope); milestones; cost estimates; approved change requests; project assumptions and risks; project acceptance criteria



# Example: Peer Review System – Context

You are given the task to develop an electronic system to facilitate the submission and subsequent analysis of peer-reviews for a project-based university unit with multiple teams.

The system must enforce authentication of all users, validate all peer review submissions based on predefined validation rules, and allow for a semi-automatic analysis of all peer reviews.



Each student has to submit an evaluation of every member in his/her team (including self). A rating from 1 to 5 is required on several aspects of teamwork, together with a paragraph of text that gives a holistic description of the individual's contribution.

# Example: Peer Review System – Present Situation

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- Students to fill out the peer review forms and submit it via email
- Convenor to collect and analyze the review
  - ☐ Manual process
  - ☐ Time consuming
  - ☐ Error prone
- Electronic submission and analysis can help convenor to solve these issues
- An example of Peer Review Form





# Example: Peer Review System - Scope

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Think about the scope and objectives of the peer review system

# Recommended Reading

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- Bob Hughes and Mike Cotterell, *Software Project Management* (5<sup>th</sup> Edition), McGraw-Hill, 2009, Chapter 1.
- Ian Sommerville, *Software Engineering* (8<sup>th</sup> Edition), Addison-Wesley, 2007, Chapter 5