

## TOPICS

**Overview**

**Metrics**

**Estimation**

**Planning**

## Overview

To successfully manage software development, the project leader must determine:

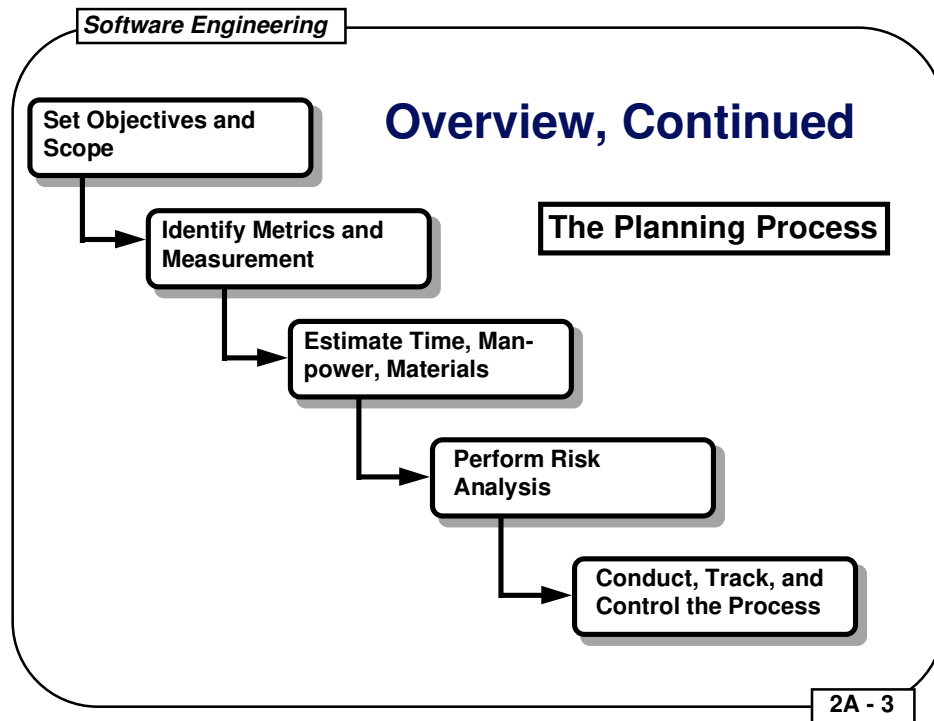
1. *Scope* of work to be done
2. *Risks* to be incurred
3. *Resources* that will be required
4. *Tasks* to be accomplished
5. *Effort* (cost) that will be expended
6. *Schedule* to be followed

Software project management begins before the technical work starts.

Software project management ends when the software is retired.

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- Many factors, such as **risks**, **resources**, **effort (cost)**, and **schedule** are difficult to determine in advance without information from previous projects.
- In this vein, there is an emphasis on collecting **software metrics** and then using those metrics to make **estimates** which are reasonably close.
- Industry has traditionally not been good at collecting software metrics on its projects because:
  - Collecting metrics costs money and takes time, both of which have a direct impact on a project, particularly if they were not planned for in advance
  - Collecting metrics can be tedious work -- something that many software practitioners tend to avoid



- Software in industry is usually developed under the following situations:
  - As part of a product
  - In support of a product
  - As an activity of research and development
- In the first two cases, budgets are allocated based on the cost estimates. If software is developed for a customer, the award of a contract may be on a firm, fixed-price basis or on a cost-plus or cost-reimbursable basis.