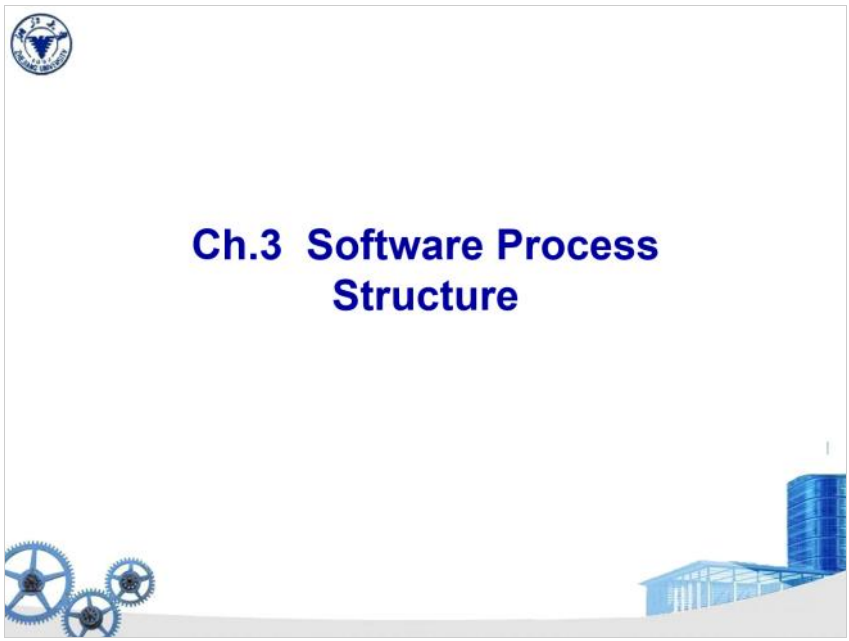
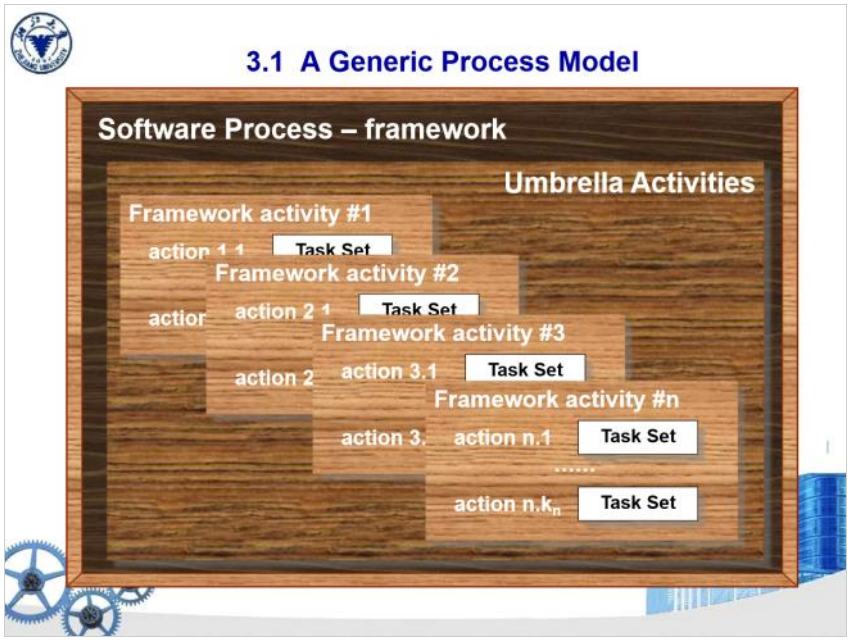
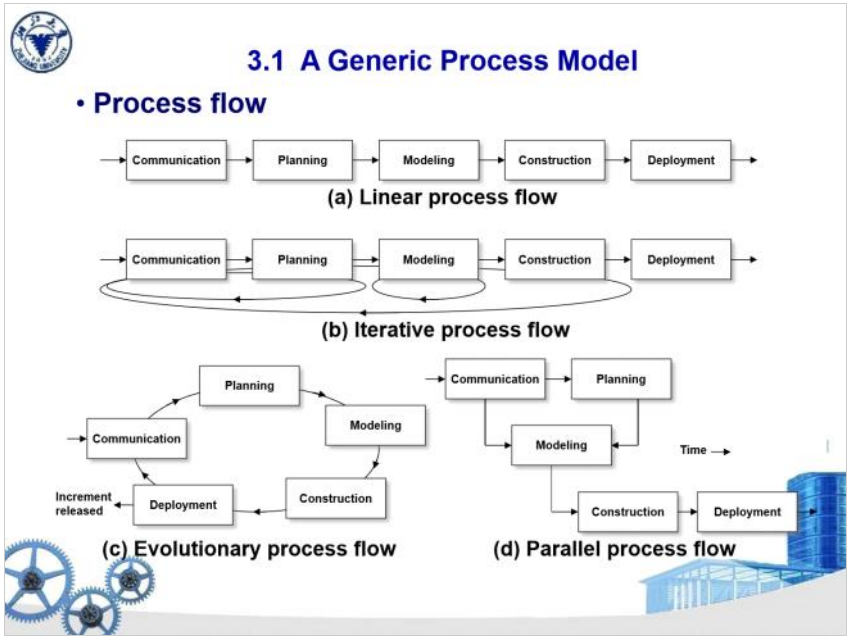
Lecture Note 3

2024年3月8日 10:21





activity分为两个：framework和umbrella



软件工程的过程可以分为四类

1、线性

2、迭代：小的环节发生反复

3、演化：整个大循环

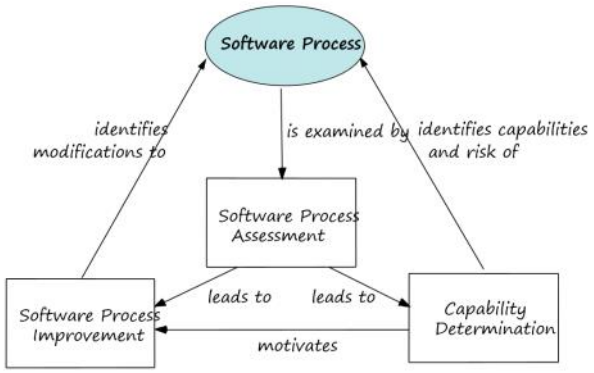
4、并行：特定功能可能已经确定，因此可以并行做

3.4 Process Patterns

- **Process patterns** define a set of activities, actions, work tasks, work products and/or related behaviors
- A **template** is used to define a pattern
- **Generic software pattern elements**
  - –Meaningful **pattern name**
  - –**Intent** (objective of pattern)
  - –**Type**
    - Task pattern (defines engineering action or work task)
    - Stage pattern (defines framework activity for the process)
    - Phase pattern (defines sequence or flow of framework activities that occur within process)
  - –**Initial context** (describes conditions that must be present prior to using pattern)
  - –**Solution** (describes how to implement pattern correctly)
  - –**Resulting context** (describes conditions that result when pattern has been implemented successfully)
  - –**Related patterns** (links to patterns directly related to this one)
  - –**Known uses/examples** (instances in which pattern is applicable)

过程模式：经验总结
找出过程中的公共部分
Pattern=template
包含以下内容：
1、名字
2、目标
3、类型
4、初始化条件
5、怎么用
6、终止条件
7、相关模式
8、例子

3.5 Process Assessment



- SCAMPI
- SPICE (ISO/IEC15504)
- CBA IPI
- ISO 9001:2000 for Software

过程评价

The Capability Maturity Model Integration

— by Software Engineering Institute (SEI) of Carnegie Mellon University (CMU)

- **Level 0: Incomplete** (process is not performed or does not achieve all goals defined for this level)
- **Level 1: Performed** (work tasks required to produce required work products are being conducted)
- **Level 2: Managed** (people doing work have access to adequate resources to get job done, stakeholders are actively involved, work tasks and products are monitored, reviewed, and evaluated for conformance to process description)
- **Level 3: Defined** (management and engineering processes documented, standardized, and integrated into organization-wide software process)
- **Level 4: Quantitatively Managed** (software process and products are quantitatively understood and controlled using detailed measures)
- **Level 5: Optimizing** (continuous process improvement is enabled by quantitative feedback from the process and testing innovative ideas)

CMMI标准（能力成熟度模型集成）：评价一个组织软件工程做的好不好
6个级别
KPI（关键过程域）：其实就是工作
0：啥也没有
1：可执行级
2：可管理级：流程基本全
3：可定义级：所有过程都被标准化，所有文档都可以自动化
4：量化管理：不仅可以自动化，也可以做过程分析（所有过程都有记录）
5：优化级：再加上过程评估，流程可以不断优化