Software Engineering - a layered Technology

Slide Set to accompany
Software Engineering: A Practitioner's Approach, 7/e
by Roger S. Pressman

These slides are designed to accompany *Software Engineering: A Practitioner's Approach, 7/e* (McGraw-Hill, 2009). Slides copyright 2009 by Roger Pressman.

Quick Recap

- Software and their characteristics
- Why Software Engineering?
- Crises Era of Software
- Legacy Software
- Software Engineering

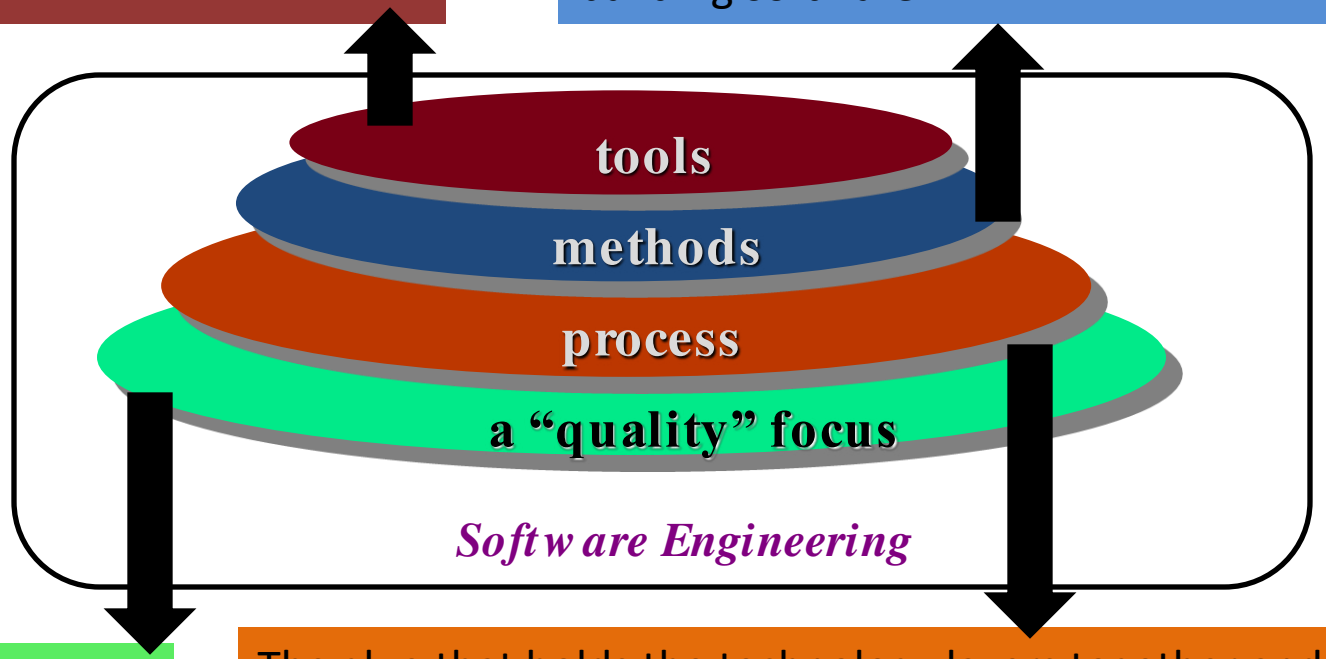
Today Agenda

- Software Engineering – a layered Technology
- Why a layered Technology?
- The Software Process
- Software Process Model vs Process Framework

Software Engineering - a Layered Technology

The *tools* provide automated or semi-automated support for the process and the methods
<<CASE tools>>

The methods provide the technical how-to's for building software.

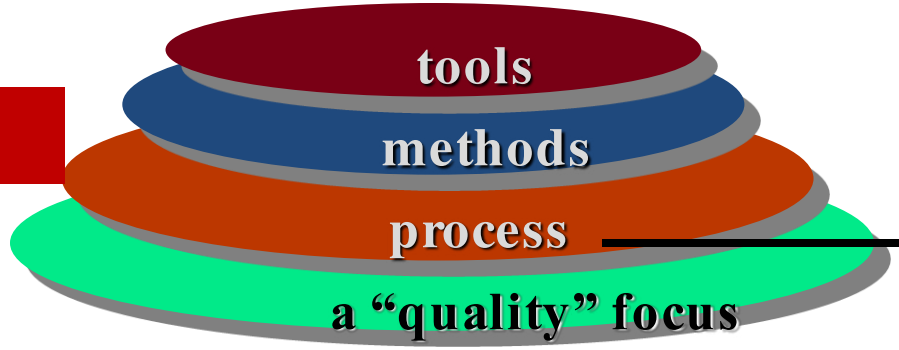


Quality Software Development

The glue that holds the technology layers together and enables rational and timely development of Quality computer software
<<Process defines a framework>>

Relationship between Process Model and Framework

The roadmap



Layered Technology

Process Model(s)

Different strategies

Process Framework

Details about raodmaps

The Software Process

- Communication
  - Project Initiation
  - Requirement gathering
- Planning
  - Estimating
  - Scheduling
  - Tracking
- Modeling
  - Analysis of requirements
  - Design
- Construction
  - Code generation
  - Testing
- Deployment
  - Delivery
  - Support
  - Feedback

Software Process Model

This strategy is often referred to as **a *process model***

A process model for software engineering is chosen based on:

-The nature of the project and application
-The methods and tools to be used
-The controls and deliverables that are required

All Process Models follow the same Software Process

- **Communication**
  - **Project Initiation**
  - **Requirement gathering**
- **Planning**
  - **Estimating**
  - **Scheduling**
  - **Tracking**
- **Modeling**
  - **Analysis of requirements**
  - **Design**
- **Construction**
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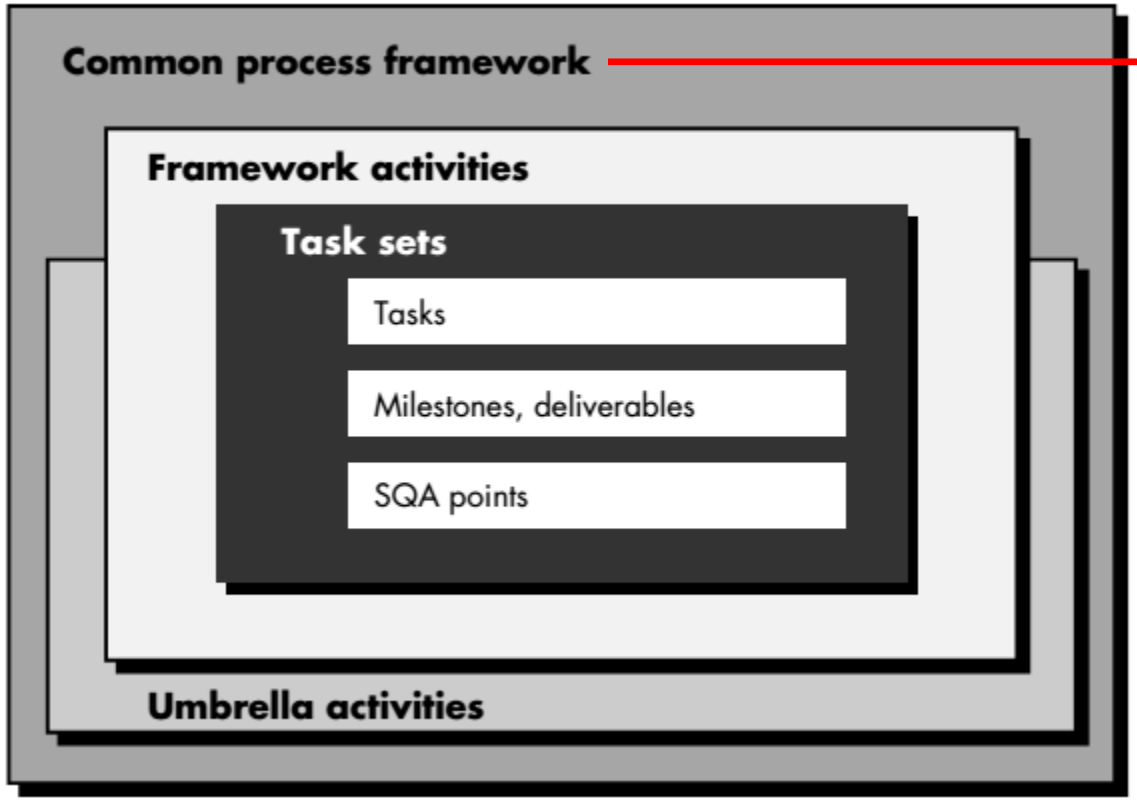
  - **Feedback**

The Software Framework

It provides details how all activities or stages specified in the process will be carried out in a systematic way



- **Communication**
  - **Project Initiation**
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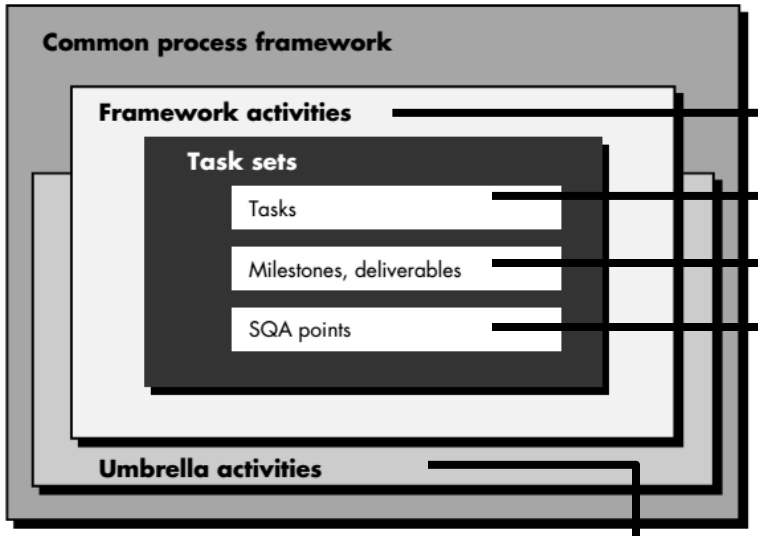
The Software Framework



- Construction
- Coding of Module-I
- Feb-28-2019, Fully Functional Module
- Reviewing the Code

- Software project tracking and control
- Formal technical reviews
- Software quality assurance
- Software configuration management
- Document preparation and production
- Reusability management
- Measurement
- Risk management

Summary

- Software Engineering – a layered Technology
- Why a layered Technology?
- A generic Software Process
- Software Process Model
- Process Framework
- These concept set basis to start studying this course