

## Software Process

*Software process can be defined as the structured set of activities that are required to develop the software system.*

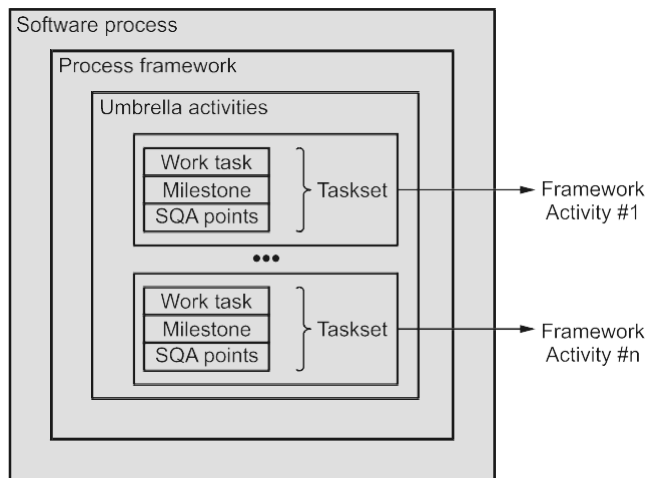
The fundamental activities are :

- Specification
- Design and implementation
- Validation
- Evolution

A software process model is an abstract representation of a process. It presents a description of a process from some particular perspective.

## Common Process Framework

The process framework is required for representing the common process activities.



**Software process framework**

As shown in the above figure, the software process is characterized by process framework activities, task sets and umbrella activities.

## Process framework activities

- Communication
  - By communicating customer requirement gathering is done.
- Planning - Establishes engineering work plan, describes technical risks, lists resource requirements, work products produced and defines work schedule.
- Modeling - The software model is prepared by :
  - Analysis of requirements
  - Design
- Construction - The software design is mapped into a code by :
  - Code generation
  - Testing
- Deployment - The software delivered for customer evaluation and feedback is obtained.

## Task sets

The task set defines the actual work done in order to achieve the software objective. The task set is used to adopt the framework activities and project team requirements using :

- Collection of software engineering work tasks
- Project milestones
- Software quality assurance points

## Umbrella activities

The umbrella activities occur **throughout the process**. They focus on project management, tracking and control. The umbrella activities are

1. **Software project tracking and control** - This is an activity in which software team can **assess progress** and take corrective action to **maintain schedule**.
2. **Risk management** - The **risks** that may affect project outcomes or quality can be **analyzed**.
3. **Software quality assurance** - These are activities required to **maintain** software **quality**.
4. **Formal technical reviews** - It is required to **assess engineering work products** to uncover and **remove errors** before they propagate to next activity.
5. **Software configuration management** - Managing of configuration process when any **change** in the software occurs.
6. **Work product preparation and production** - The activities to create models, documents, logs, forms and lists are carried out.

- 7. **Reusability management** - It defines criteria for work product reuse.
- 8. **Measurement** - In this activity, the process can be defined and collected. Also **project and product measures** are used to assist the software team in delivering the required software.