SOFTWARE ENGINEERING-I

BY

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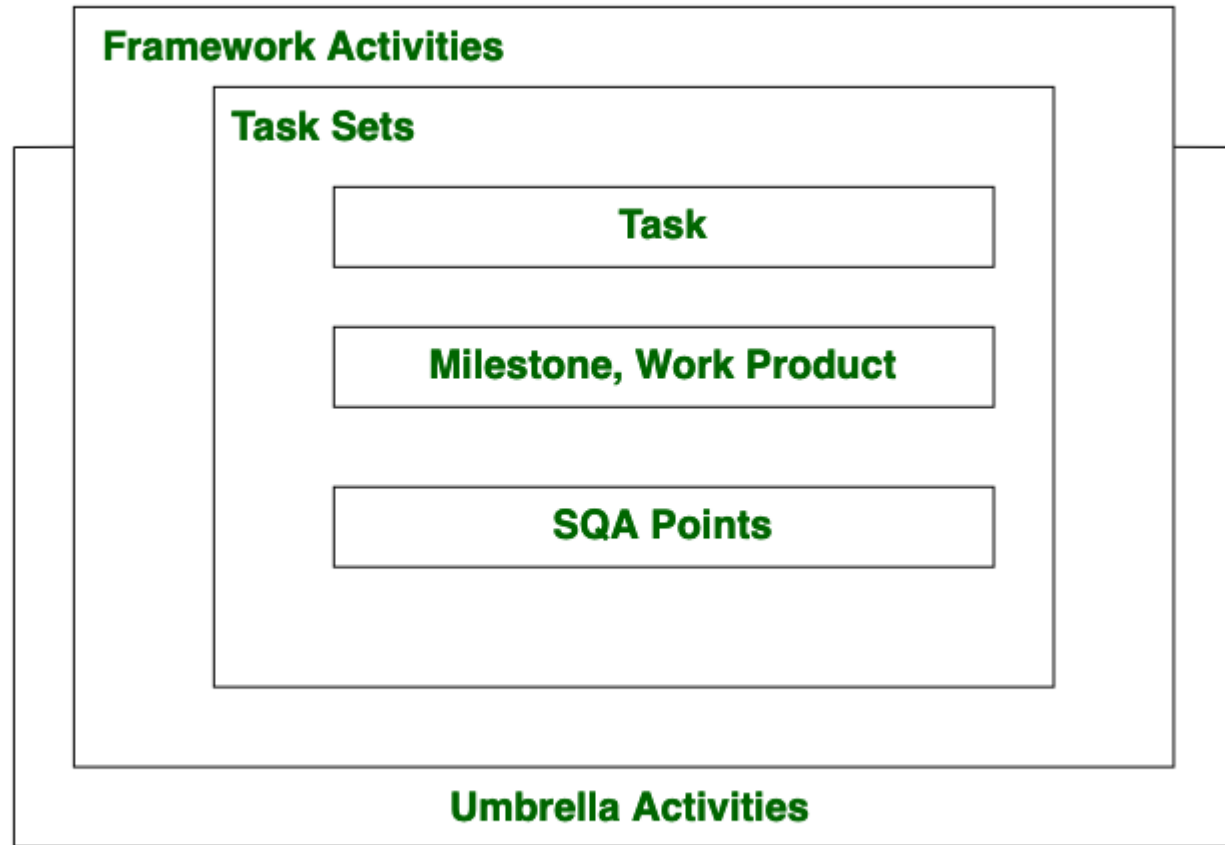# Week 2: Software Process Framework

✓Software Process Framework.

✓Software Development.

✓Generic Process Model.

Software framework

- **Framework** is a Standard way to build and deploy applications.
- **Software Process Framework** is a foundation of complete software engineering process.
- Software process framework includes all set of umbrella activities. It also includes number of framework activities that are applicable to all software projects.

Process Framework

Framework Activities

Task Sets

Task

Milestone, Work Product

SQA Points

Umbrella Activities

Software Process Framework

Continue…

- A generic process framework encompasses five activities which are given below one by one:

- **Communication:**
In this activity, heavy communication with customers and other stakeholders, requirement gathering is done.

- **Planning:**
In this activity, we discuss the technical related tasks, work schedule, risks, required resources etc.

- **Modeling:**
Modeling is about building representations of things in the 'real world'. In modeling activity, a product's model is created in order to better understanding and requirements.

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- **Construction:**
  In software engineering, construction is the application of set of procedures that are needed to assemble the product. In this activity, we generate the code and test the product in order to make better product.

- **Deployment:**
  In this activity, a complete or non-complete products or software are represented to the customers to evaluate and give feedback. on the basis of their feedback we modify the products for supply better product.

Umbrella activities include:

- **Software project tracking and control**
- Risk management
- Software quality assurance(SQA)
- Software configuration management(SCM)
- **Formal Technical Reviews (FTR)**
- Measurement
- **Reusability management**

Software project tracking and control

- In this activity, the developing team accesses project plan and compares it with the predefined schedule.

- If these project plans do not match with the predefined schedule, then the required actions are taken to maintain the schedule.

What Is Risk management In Software Engineering?

- Very simply, a risk is a *potential* problem. It's an activity or event that may compromise the success of a software development project. Risk is the possibility of suffering loss, and total risk exposure to a specific project will account for both the *probability* and the *size* of the potential loss.

Software quality assurance(SQA)

- **Software Quality Assurance (SQA)** is simply a way to assure quality in the software. It is the set of activities which ensure processes, procedures as well as standards suitable for the project and implemented correctly.

Software configuration management(SCM)

- In Software Engineering, Software Configuration Management(SCM) is a **process to systematically manage, organize, and control** the changes in the documents, codes, and other entities during the Software Development Life Cycle.

Formal Technical Reviews (FTR)

- FTR is a meeting conducted by the technical staff.
- The motive of the meeting is to detect quality problems and suggest improvements.
- The technical person focuses on the quality of the software from the customer point of view.

Measurement

- Measurement consists of the effort required to measure the software.

- The software cannot be measured directly. It is measured by direct and indirect measures.

- Direct measures like cost, lines of code, size of software etc.

- Indirect measures such as quality of software which is measured by some other factor. Hence, it is an indirect measure of software.

Reusability management

- It defines the criteria for reuse the product.

- The quality of software is good when the components of the software are developed for certain application and are useful for developing other applications.