

## **SNS COLLEGE OF ENGINEERING**

Kurumbapalayam(Po), Coimbatore – 641 107 Accredited by NAAC-UGC with 'A' Grade Approved by AICTE, Recognized by UGC & Affiliated to Anna University, Chennai

### Department of Artificial Intelligence and Data Science

SOWMIYA R/AP/AI&DS/SNSCE/23ITT203 OBJECT ORIENTED SOFTWARE ENGINEERING







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- A **process** is a collection of activities, actions, and tasks that are performed when some work product is to be created.
- An activity strives to achieve a broad objective (e.g., communication with stakeholders) and is applied regardless of the application domain, size of the project, complexity of the effort, or degree of rigor with which software engineering is to be applied.
- An action (e.g., architectural design) encompasses a set of tasks that produce a major work product (e.g., an architectural design model). A task focuses on a small, but well-defined objective (e.g., conducting a unit test) that produces a tangible outcome.





- In the context of software engineering, a process is *not* a rigid prescription for how to build computer software. Rather, it is an adaptable approach that enables the people doing the work (the software team) to pick and choose the appropriate set of work actions and tasks. The intent is always to deliver software in a timely manner and with sufficient quality to satisfy those who have sponsored its creation and those who will use it.
- A **process framework** establishes the foundation for a complete software engineering process by identifying a small number of **framework activities** that are applicable to all software projects, regardless of their size or complexity.







A generic process framework for software engineering encompasses five activities:

**Communication:**  ${\color{black}\bullet}$ 

Before any technical work can commence, it is critically important to communicate and collaborate with the customer. The intent is to understand stakeholders' objectives for the project and to gather requirements that help define software features and functions.

### **Planning:** $\bullet$

software project plan—defines the software engineering work by describing the technical tasks to be conducted, the risks that are likely, the resources that will be required, the work products to be produced, and a work schedule.

Modeling: 

Software engineers will create models to better understand software requirements and the design

that will achieve those requirements. SOWMIYA R/AP/AI&DS/SNSCE/23ITT203 OBJECT ORIENTED 2/10/2025 SOFTWARE ENGINEERING





### **Construction:**

This activity combines code generation and the testing that is required uncovering errors in the code.

### **Deployment:**

The software is delivered to the customer who evaluates the delivered product and provides feedback based on the evaluation.

These five generic framework activities can be used during the development of small, simple programs, the creation of large Web applications, and for the engineering of large, complex computer-based systems.

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### **Umbrella activities:**

Umbrella activities are applied throughout a software project and help a software team manage and control progress, quality, change, and risk.

### **Typical umbrella activities include:**

- **Software project tracking and control**—allows the software team to assess progress against the  $\bullet$ project plan and take any necessary action to maintain the schedule.
- **Risk management**—assesses risks that may affect the outcome of the project or the quality of  ${\color{black}\bullet}$ the product.
- **Software quality assurance**—defines and conducts the activities required to ensure software ulletquality.
- A technical review—assesses software engineering work products in an effort to uncover and ulletremove errors before they are propagated to the next activity.
- **Measurement**—defines and collects process, project, and product measures that assist the lacksquareteam in delivering software that meets stakeholders' needs.

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- **Software configuration management**—manages the effects of change throughout the softwa process.
- **Reusability management**—defines criteria for work product reuse (including software lacksquarecomponents) and establishes mechanisms to achieve reusable components.
- Work product preparation and production—encompasses the activities required to create work  $\bullet$ products such as models, documents, logs, forms, and lists.







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