SNS COLLEGE OF ENGINEERING

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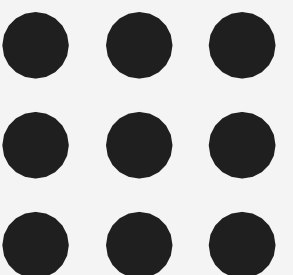**Approved by AICTE, Recognized by UGC & Affiliated to Anna University, Chennai**

Department of Artificial Intelligence and Data Science

23ITT203 Object Oriented Software Engineering

Software Project Management

What is Software Project Management?

- **Software Project Management (SPM)** is the process of **planning, organizing, leading, and controlling** software projects to achieve specific goals within time, cost, and quality constraints.

Objectives of Software Project Management

- Deliver software **on time**

- Stay **within budget**

- Meet the **requirements/specifications**

- Maintain **quality standards**

- Manage **team members, risks, and resources**

Core Activities in Software Project Management

Activity	Description
Project Planning	Define scope, schedule, budget, resources
Project Scheduling	Timeline for tasks (using Gantt, PERT charts)
Risk Management	Identify, assess, and mitigate project risks
Cost Estimation	Predicting the resources and effort needed
Quality Management	Ensuring the product meets required standards
Team Management	Assigning roles and responsibilities
Monitoring & Control	Tracking project progress and correcting deviations

Key Elements of Project Planning

- **Scope:** What is being delivered?

- **Time:** How long will it take?

- **Cost:** How much will it cost?

- **Resources:** Who and what are needed?

- **Risk:** What could go wrong?

Software Project Life Cycle

- **Initiation –** Idea is born, feasibility checked

- **Planning –** Resources, timeline, and cost are estimated

- **Execution –** Code is developed and tested

- **Monitoring –** Progress is tracked

- **Closure –** Final delivery, client handoff, feedback

Project Management Tools

Tool Name	Used For	Purpose	Simple Example
Gantt Chart	Project Scheduling	Show tasks on a timeline	Plan a project from design → development → testing
PERT Chart	Task Dependency & Planning	Show task relationships, critical path	Task A must finish before Task B starts
JIRA	Agile Project Management	Track sprints, bugs, user stories	Assign tasks to developers and track sprint progress
Trello	Task Management (Kanban)	Visual To-Do list	Move tasks from "To-Do" to "Doing" to "Done"
Slack	Team Communication	Chat and share updates	Notify team when a bug is fixed or code is pushed
GitHub	Version Control	Track code changes, collaborate	Developer pushes code to a shared repository
GitLab	DevOps & CI/CD	Automate testing & deployment	Run tests automatically after every commit
MS Project	Project Planning	Timeline, cost, and resource tracking	Plan who does what in which week for a software upgrade
Asana	Task Assignment	Assign and track individual tasks	Assign frontend work to Dev A, backend to Dev B
ClickUp	All-in-One PM	Manage tasks, docs, sprints, and reports	Create roadmap, documentation, and track bugs in one platform

Example for Better Understanding

- **Scenario**: You are developing a simple "Online Quiz Application".

- **Scope**: Create a login page, quiz interface, results page

- **Time**: 2 weeks total (1 for frontend, 1 for backend)

- **Team**: 1 frontend dev, 1 backend dev, 1 tester

- **Tools**: GitHub for version control, Trello for tasks

- **Monitoring**: Daily standup meetings

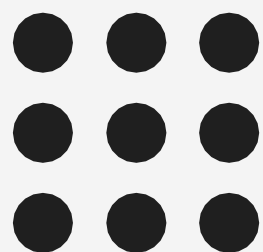- At the end of 2 weeks, your team delivers the product to the client on time.

Common Challenges in Software Project Management

- **Scope creep** (new features keep getting added)

- **Unrealistic deadlines**

- **Lack of clear communication**

- **Changing requirements**

- **Inadequate risk planning**

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