

# **COURSE-SOFTWARE ENGINEERING**

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3<sup>rd</sup> Year 2<sup>nd</sup> Semester

Session:2020-2021

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## ☐ Different Agile Approaches and their comparative Analysis.

1. How it works?
2. Applicability?
3. Effectiveness in terms of costs?

### Answer:

Agile methodologies have revolutionized the way software development projects are managed. Here's a breakdown of different Agile approaches with their working principles, applicability, and cost-effectiveness for comparison:

#### 1. Scrum :

##### ☐ How it works :

Scrum is an iterative and incremental framework. Work is organized into fixed length sprints, with clearly defined roles and ceremonies and Sprint.

##### ☐ Applicability :

Best suited for product development, software projects, or teams where requirements evolve rapidly. Works well for

small to medium-sized teams,

### Effectiveness in terms of costs:

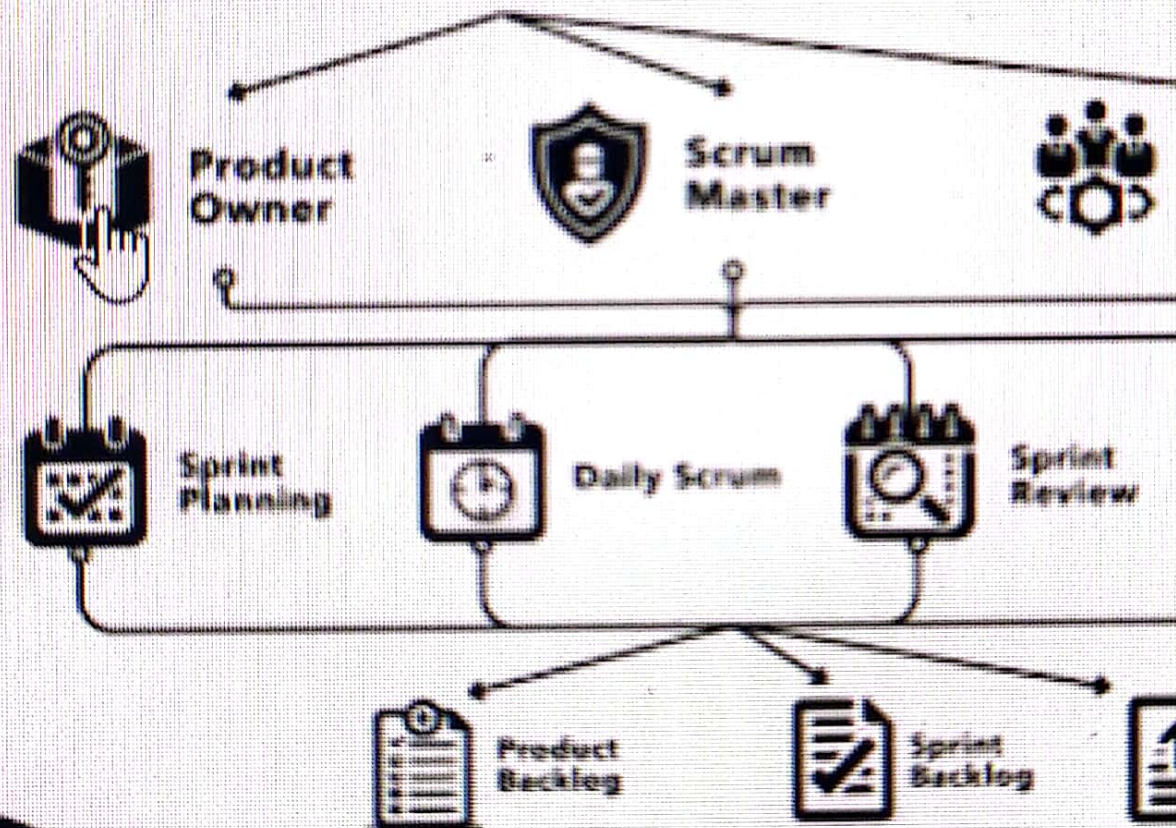
Cost effective in reducing delays and ensuring frequent delivery of value. However, it requires trained Scrum Master's, and overhead costs can increase with larger teams or excessive meetings.

### Example :-

A software development team uses scrum to build a new e-commerce website. They break down the project into sprints, each focused on delivering specific features. During each sprint, the team holds daily stand-ups to discuss progress and challenges. At the end of each sprint, they review the completed work with stakeholders and plan the next sprint.



# the Scrum Framework attractgroup....



Scrum Framework with Sprints, Roles, and Artifacts



## 2. kanban

### How it works :

Kanban is a visual method for managing work. It uses a kanban board to visualize the workflow, and tasks are moved through different stages.

### Applicability :

Kanban is suitable for ongoing projects with a continuous flow of work. It's particularly effective for teams that prioritize continuous delivery.

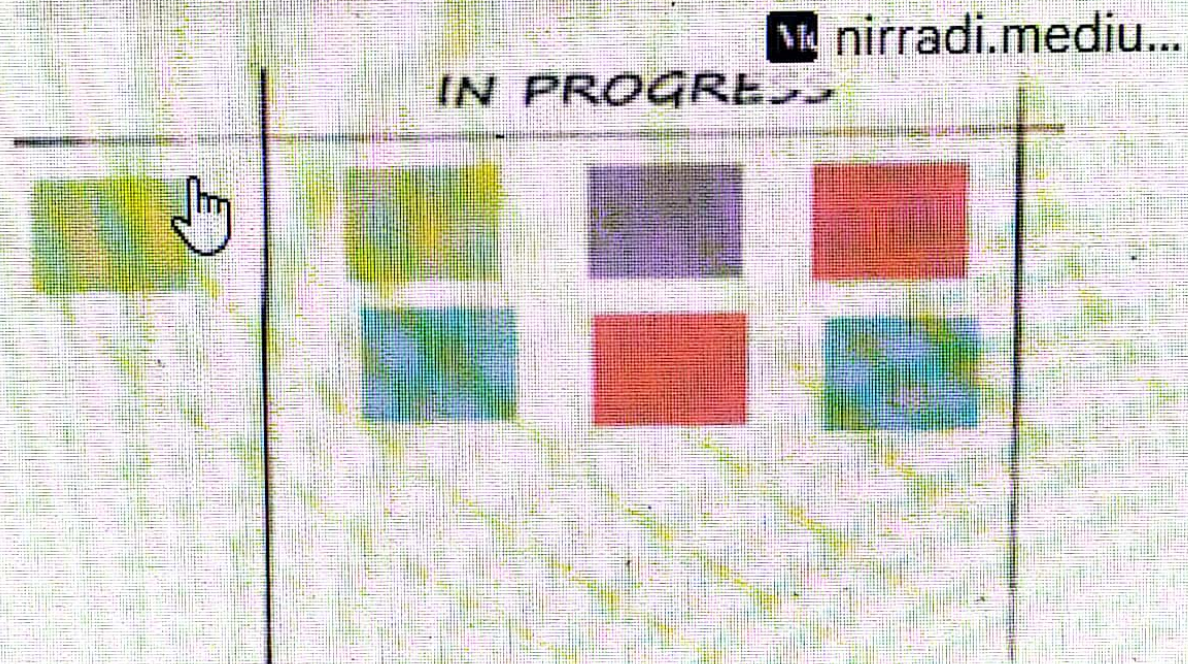
### Effectiveness in terms of costs :

Kanban can be cost-effective as it focuses on efficiency and avoids unnecessary overhead.

### Example :

A help desk team uses kanban to manage incoming support tickets. They create a kanban board with columns for "To Do", "In Progress", and "Done". They are worked on and resolved.





Kanban Board with columns: To Do, In Progress, Done



### 3. Extreme Programming (XP)

#### How it Works :

XP emphasizes simplicity, communication, feedback, courage, and respect. It involves practices like pair programming, test-driven development, and continuous integration.

#### Applicability :

XP is suitable for small, co-located teams working on complex projects.

#### Effectiveness in terms of costs :

XP can be cost-effective in the long run due to its focus on quality and reduced work. However, the initial investment in training and adopting XP practices can be significant.

#### 4. Lean Software Development :

##### How it works :

Lean software Development focuses on eliminating waste and maximizing value delivery. It involves practices like value stream mapping, just-in-time delivery and continuous improvement.

##### Applicability :

Lean is suitable for projects that prioritize efficiency and waste reduction. It can be applied to a wide range of software development projects.

##### Effectiveness in terms of costs :

Lean can be cost-effective as it focuses on eliminating waste and optimizing resource utilization.



## Comparative Analysis:-

Feature	Scrum	Kanban	Extreme programming
Focus	Time-boxed iterations	Visual workflow	Technical practices
Flexibility	High	High	High
Team collaboration	High	High	High
Customer Involvement	High	High	High
Risk Management	Moderate	Low	High