

Lab 5

Use of Kanban Board

Objective

To understand the application of the **Kanban Board** in Agile project management for visualizing work, limiting work-in-progress (WIP), and maximizing flow efficiency. This lab focuses on how Kanban promotes transparency, adaptability, and continuous delivery in software projects.

Tools Used

- Trello / Jira – for creating and managing the **Kanban board**
- Sticky Notes or Cards – to represent tasks (for physical boards)
- Markers and Labels – for categorizing tasks and defining swim lanes
- Web Browser and Internet – to access online Kanban tools like Trello

Methodology

The lab was performed in the following stages:

Step 1: Introduction to Kanban

- Learned the core principles of Kanban:
 - Visualize the workflow
 - Limit Work-In-Progress (WIP)
 - Manage flow
 - Make process policies explicit
 - Improve collaboratively

Step 2: Kanban Board Setup

- Created workflow columns:
 - To Do, In Progress, Testing, Done
- Added user stories as task cards
- Assigned team members and deadlines to tasks

Step 3: WIP Limit Application

- Applied a WIP limit of 2 on the In Progress column
- Ensured that no more than two tasks were being worked on at the same time
- Observed the effect of limiting WIP on team efficiency

Step 4: Task Movement Simulation

- Simulated a sprint by moving tasks through workflow stages:
 - “To Do” → “In Progress” → “Testing” → “Done”
- Logged issues such as bottlenecks and idle stages
- Reflected on ways to improve flow and balance team workload

Implementation

Kanban Board Snapshot

To Do	Work in Progress (Max 2)	Testing	Done
Task 1: Design landing page UI	Task 3: Implement login API	Task 6: Unit Test login logic	Task 8: Configure GitHub repo
Task 2: Write user story for cart	Task 4: Connect to PostgreSQL	Task 7: Setup database schema	Task 5: Validate input fields

Sample Task Card

Title: Implement Login API
Assignee: John
Due Date: June 24
Priority: High

Description:

- Create a secure API endpoint to authenticate users
- Validate email and password inputs
- Generate and return a session token on successful login
- Handle error responses for invalid credentials or missing data

Results

- Successfully visualized the development workflow using a Kanban board
- Experienced the impact of WIP limits on team efficiency and flow
- Understood how task movement highlights bottlenecks and areas needing improvement
- Observed how transparency and continuous feedback help streamline delivery in Agile

Conclusion

The Kanban Board is a powerful Agile tool that enhances workflow visibility, controls WIP, and boosts efficiency. Through this lab, we explored how limiting tasks, visual tracking, and continuous improvement contribute to smoother project execution. The practical simulation of task flow emphasized Kanban's role in achieving transparency and adaptability in Agile software development.