**GANDAKI COLLEGE OF ENGINEERING AND SCIENCE**

**Lamachaur, Pokhara**



LAB REPORT OF   
**Agile Software Development**

**LAB – 5**

**SUBMITTED BY: SUBMITTED TO:**

Ansh Gurung Er. Rajendra Bdr. Thapa

Roll No: 9

6th Semester

BE Software

# Lab 5: Use of Kanban Board

## Objective

To understand the use of the **Kanban Board** in Agile project management for visualizing work, limiting work-in-progress (WIP), and maximizing flow efficiency. The objective is to learn how Kanban supports transparency, adaptability, and continuous delivery.

**Tools Used**

* **Trello / Jira –** for Kanban board implementation
* **Sticky Notes or Cards –** to represent tasks (for physical boards)
* **Markers and Labels –** for categorizing tasks and swim lanes
* **Web browser and internet –** to access online Kanban tools

## Methodology

The lab was carried out in the following stages:

**Step 1: Introduction to Kanban**

* Learned about Kanban principles:
  + Visualize the workflow
  + Limit WIP
  + Manage flow
  + Make process policies explicit
  + Improve collaboratively

**Step 2: Kanban Board Setup**

* Created columns for workflow stages:
  + **To Do**, **In Progress**, **Testing**, **Done**
* Added sample user stories as task cards
* Assigned team members and deadlines

**Step 3: WIP Limit Application**

* Applied WIP limit of 2 on the **In Progress** column
* Ensured that no more than 2 tasks were being worked on simultaneously
* Monitored flow to avoid bottlenecks

**Step 4: Task Movement Simulation**

* Simulated a development sprint:
  + Tasks moved from "To Do" → "In Progress" → "Testing" → "Done"
* Logged issues such as bottlenecks or idle stages
* Discussed improvements for balancing workload

## Implementation

* Kanban Board:

|  |  |  |  |
| --- | --- | --- | --- |
| **To Do** | **Work in Progress** | **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 flow of tasks using the Kanban board.
* Observed how limiting WIP improves task focus and flow efficiency.
* Understood the importance of continuously improving the process based on actual performance.

## Conclusion

The Kanban Board is a powerful Agile tool that enhances transparency, limits overload and streamlines task execution. This lab provided hands-on experience with managing flow and revealed how even small changes in WIP limits or task distribution can significantly affect project efficiency.