

# **GANDAKI COLLEGE OF ENGINEERING AND SCIENCE**

**Lamachaur, Pokhara**



## **LAB REPORT OF Agile Software Development**

### **LAB – 4**

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Roll No: 9

6<sup>th</sup> Semester

BE Software

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# Lab 4: Agile Estimation Metrics

## Objective

To understand and apply Agile estimation techniques and metrics such as story points, velocity, and planning poker. The goal is to evaluate how estimation improves predictability and planning in Agile projects.

## Tools Used

- **Trello / Jira / Excel** – for task tracking and sprint planning
- **Planning Poker app / cards** – for collaborative estimation
- **Whiteboard or Notepad** – for notetaking and backlog grooming
- **Agile Board or Spreadsheet** – to calculate team velocity and track metrics

## Methodology

- The lab was divided into the following activities:
- **Step 1: Understanding Story Points**
- Discussed story points as a unitless measure of effort and complexity.
- Compared with tasks by relative sizing (e.g., a task twice as hard as another = double the points).
- **Step 2: Estimation with Planning Poker**
- Formed teams of 4–6 members.
- Each team was given a product backlog with several user stories.
- Used Planning Poker to estimate each story collaboratively.
- Discussed differing estimates and reached consensus.
- **Step 3: Calculating Team Velocity**
- Used estimated story points from 2 hypothetical sprints:
- Sprint 1 completed: 20 story points
- Sprint 2 completed: 23 story points

- Calculated average team velocity:  
**Velocity = (20 + 23) / 2 = 21.5 story points per sprint**
- **Step 4: Forecasting Future Work**
- Given a backlog of 64 points and a velocity of 21.5:
- Estimated time to complete: **~3 sprints**

## Implementation

- User Story:  
As a user, I want to reset my password so I can regain access to my account.
- Planning Poker Results:

User Story ID	Member 1	Member 2	Member 3	Final Estimation
US-01	5	8	5	5
US-02	3	3	5	3
US-03	8	13	8	8

- Velocity Table:

Sprint	Story Points Completed
1	20
2	23
Any	21.5

## Results

- Developed accurate relative estimates for user stories.
- Practiced team collaboration and consensus-building through Planning Poker.
- Calculated team velocity and learned how to use it to forecast sprint capacity.

- Realized the benefit of abstract estimation over time-based estimation for Agile flexibility.

## **Conclusion**

Agile estimation metrics provide a lightweight yet effective way to plan and manage tasks in a sprint. Story points and velocity help teams forecast work realistically and accommodate change. The lab reinforced the value of team collaboration in estimation and highlighted how consistent tracking improves project predictability.