Lab 4
Title: 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 conducted through the following steps:
Step 1: Understanding Story Points
- Story points were discussed as a **unitless measure** of effort and complexity.
- Stories were **compared relatively** (e.g., if Task A is twice as hard as Task B, it gets double the points).

Step 2: Estimation with Planning Poker
- Teams of 4–6 members were formed.
- Each team received a **product backlog** containing multiple user stories.
- **Planning Poker** was used to estimate the size of each story collaboratively.
- Estimates were discussed, and **consensus was reached**.

Step 3: Calculating Team Velocity
- Estimated story points from **two hypothetical sprints** were used:
  - **Sprint 1:** 20 story points
  - **Sprint 2:** 23 story points
- **Average Team Velocity** was calculated as:
Velocity=20+232=21.5 story points per sprint\text{Velocity} = \frac{20 + 23}{2} = 21.5\text{ story points per sprint}Velocity=220+23=21.5 story points per sprint

Step 4: Forecasting Future Work
- Given a backlog of **64 story points** and team velocity of **21.5**:
  - Estimated time to complete the backlog: 6421.5≈3 sprints\frac{64}{21.5} \approx 3 \text{ sprints}21.564≈3 sprints

Implementation

User Story Example

US-01: As a user, I want to reset my password so I can regain access to my account.

Planning Poker Estimation Table

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
Avg.	21.5

Results

- Developed accurate and **relative estimates** for different user stories.
- Practiced **team collaboration** and **consensus-building** using Planning Poker.
- Successfully calculated **team velocity** and used it to **forecast sprint capacity**.
- Gained understanding of **abstract estimation** over fixed time-based estimation, allowing better Agile flexibility.

Conclusion

This lab emphasized the importance of **collaboration**, **relative estimation**, and **consistent tracking** for improved project **predictability** and **adaptability**.