

# Sprint Planning



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# Introduction

- Sprint planning involves calculating team capacity, velocity, and workload distribution to ensure achievable goals within the sprint duration.
- Let's go step by step with calculations.

# Step 1: Define Sprint Parameters

- Sprint Duration: 2 weeks (10 working days)
- Team Size: 4 members (3 Developers, 1 QA Engineer)
- Work Hours per Day per Member: 6 hours (excluding meetings)
- Total Work Capacity:  $((4 \text{ members} \times 6 \text{ hours})/\text{day}) \times 10 \text{ days} = 240 \text{ hours}$

# Step 2: Team Velocity Calculation

- Velocity is the average number of story points completed per sprint.
- Previous sprint velocity: 20, 22, 25 story points
- Average Velocity:  $(20+22+25)/3=22.3\approx22$  story points

# Step 3: Selecting Backlog Items for the Sprint

- Here is the **product backlog** with priority and estimated story points.

User Story ID	Description	Priority	Story Points	Estimated Hours
US-101	User sign-up with email & password	High	3	12
US-102	Login with authentication	High	3	12
US-103	Browse available courses	High	5	20
US-104	Enroll in a course	High	8	32
US-105	View enrolled courses	Medium	5	20
US-106	Receive course recommendations	Medium	5	20

# Step 3: Selecting Backlog Items for the Sprint

- Sprint Selection Based on Velocity (22-25 SP)

- ✓ US-101 (3 SP, 12 hrs)
- ✓ US-102 (3 SP, 12 hrs)
- ✓ US-103 (5 SP, 20 hrs)
- ✓ US-104 (8 SP, 32 hrs)
- ✓ US-105 (3 SP, 12 hrs)

 Total Story Points: 22

 Total Estimated Hours: 88 hours (within 240-hour capacity)

# Step 4: Breaking Down Tasks for a User Story

- Example: US-104 (Enroll in a Course - 8 SP, 32 hours)

Task	Assigned To	Estimated Hours
Backend API for enrollment	Developer 1	10
Frontend UI for course enrollment	Developer 2	8
Database update for enrolled users	Developer 3	6
Unit Testing	Developer 1	4
QA Testing	QA Engineer	4

# Let's Start

- Scenario: Developing an Online Learning Platform
- Your **Scrum Team** consists of **5 members** (3 Developers, 1 QA Engineer).
- You are planning a **two-week sprint (10 working days)** with a velocity of **25-30 story points per sprint.**

# Sample Product Backlog

User Story ID	Description	Priority	Story Points	Status
US-101	As a user, I want to sign up with my email and password.	High	3	Ready for Sprint
US-102	As a user, I want to log in securely.	High	3	Ready for Sprint
US-103	As a user, I want to browse available courses.	High	5	Ready for Sprint
US-104	As a user, I want to enroll in a course.	High	8	Ready for Sprint
US-105	As a user, I want to view my enrolled courses.	Medium	5	Ready for Sprint
US-106	As a user, I want to complete a lesson and track progress.	Medium	5	Backlog
US-107	As an admin, I want to add new courses.	Low	8	Backlog
US-108	As a user, I want to receive course recommendations.	Low	5	Backlog

# Capacity Planning

- Team size: 4 members
- Sprint duration: 2 weeks (10 working days)
- Past velocity: 25-30 story points per sprint
- Sprint Goal: Focus on core functionality like authentication and course browsing

# Selecting Backlog Items for the Sprint

- To fit within the sprint's velocity, we prioritize **high-priority items first**, keeping the team's workload in mind.
- **Total Story Points Selected: 24** (aligned with team velocity).

Selected User Story	Story Points
US-101 (Sign-up)	3
US-102 (Login)	3
US-103 (Browse Courses)	5
US-104 (Enroll in Course)	8
US-105 (View Enrolled Courses)	5

# Breakdown of Tasks

Example for US-104 (Enroll in Course - 8 Story Points)

- Create enrollment API endpoint
- Implement frontend UI for enrollment
- Connect frontend with backend API
- Add unit tests for enrollment feature
- Perform integration testing
- Update user interface for better experience
- Manual test planning and execution

# Monitoring Sprint Progress

- Sprint Board: Tasks move from To Do → In Progress → Code Review → Testing → Done.
- Daily Stand-ups: Identify blockers and reallocate tasks if needed.
- Burndown Chart: Tracks progress daily to ensure on-time completion.

# Question 01

- Team size: 5 members (3 Developers, 1 QA Engineer)
- Sprint duration: 2 weeks (10 working days)

User Story ID	Description	Priority	Story Points	Status
US-201	As a patient, I want to enter my personal details (name, DOB, contact) during registration.	High	3	Ready for Sprint
US-202	As a patient, I want to upload my medical history documents during registration.	High	5	Ready for Sprint
US-203	As a patient, I want to receive an OTP verification after entering my phone number.	High	5	Ready for Sprint
US-204	As a receptionist, I want to verify and approve patient registrations.	Medium	8	Ready for Sprint
US-205	As a patient, I want to get a confirmation email after successful registration.	Medium	3	Ready for Sprint
US-206	As a doctor, I want to access registered patient details from the system.	Medium	8	Backlog
US-207	As an admin, I want to generate reports on patient registrations.	Low	5	Backlog

# Question 02

- Your team velocity is 25-30 story points per sprint. Below is the product backlog. Given the team's velocity and priority levels, which backlog items should be selected for the sprint?

User Story ID	Description	Priority	Story Points
US-101	User sign-up with email & password	High	3
US-102	Login with authentication	High	3
US-103	Browse available courses	High	5
US-104	Enroll in a course	High	8
US-105	View enrolled courses	Medium	5
US-106	Receive course recommendations	Medium	5
US-107	Admin can add new courses	Low	8