Experiment no. 6

Aim: To Study Agile Methodology and Test case Management using JIRA Tool

Theory:

1. Introduction to Agile Methodology

Agile methodology is a modern software development approach that emphasizes flexibility, collaboration, customer feedback, and rapid iteration. Unlike the traditional waterfall model, where each phase is completed before moving to the next, Agile promotes continuous delivery and responsiveness to change.

At its core, Agile breaks down the software development process into small, manageable units called iterations or sprints, usually lasting 1 to 4 weeks. During each sprint, a functional piece of the product is developed, tested, and demonstrated.

2. Principles of Agile (Based on the Agile Manifesto)

The Agile Manifesto, created in 2001, outlines values and principles that guide Agile practices:

Core Values:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

Agile Principles Include:

- Deliver working software frequently
- Welcome changing requirements, even late in development
- Business people and developers must work together daily
- Simplicity—the art of maximizing work not done—is essential

3. Agile Frameworks and Terminologies

Agile is a methodology umbrella that includes various frameworks and practices like Scrum, Kanban, and XP (Extreme Programming).

Scrum (most popular):

Roles:

- Product Owner: Manages product backlog and prioritization
- Scrum Master: Ensures the team adheres to Agile principles

- Development Team: Executes the work

Events:

- Sprint Planning, Daily Stand-ups, Sprint Review, and Sprint Retrospective

Artifacts:

- Product Backlog, Sprint Backlog, Increment

Kanban:

- Visual representation of workflow using a Kanban board
- Focuses on limiting Work in Progress (WIP) and continuous delivery

4. Introduction to JIRA Tool

JIRA, developed by Atlassian, is a widely used project management and issue tracking tool that supports Agile methodology. It allows teams to plan, track, and manage software development projects efficiently.

Why JIRA?

- Supports Scrum, Kanban, and hybrid models
- Enables sprint planning, backlog grooming, and velocity tracking
- Offers customizable workflows, dashboards, and reporting tools
- Integrates seamlessly with tools like Confluence, Bitbucket, and Jenkins

5. Test Case Management in JIRA

While JIRA doesn't have built-in test management features, it can be extended using plugins like Zephyr, TestRail, or Xray for comprehensive test case handling.

Using Zephyr for Test Management:

- Test Case Creation: Create test cases as issue types in JIRA
- Test Cycles: Group tests into cycles based on release or sprint
- Execution: Log pass/fail results for each test step
- Traceability: Link test cases to requirements and defects

Key Test Artifacts in JIRA:

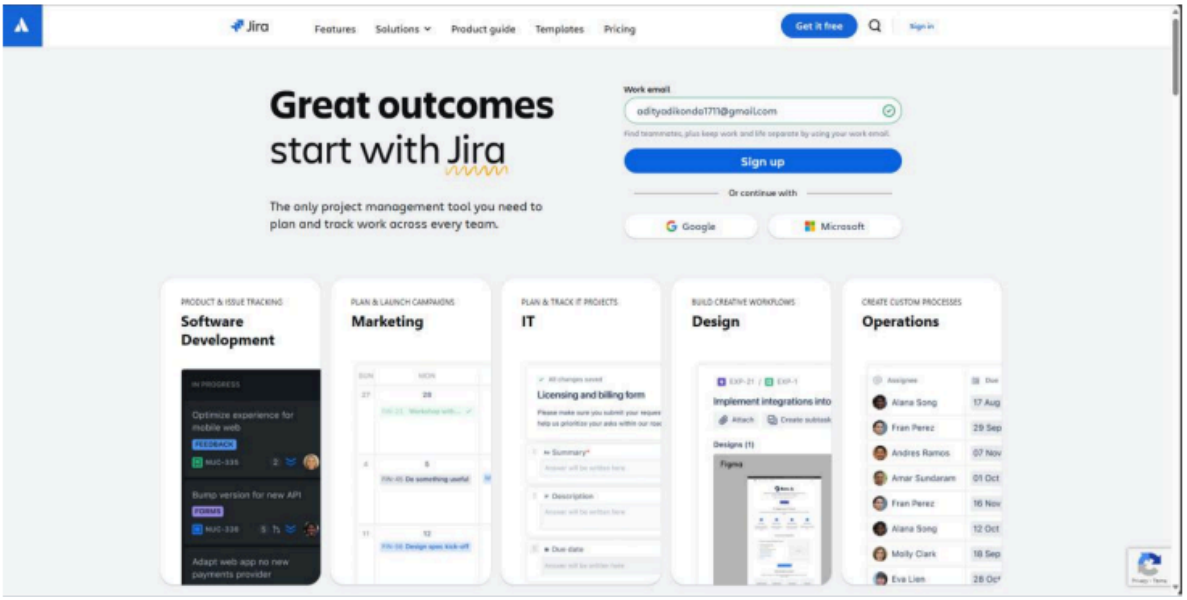
- Test Cases (What to test)
- Test Plans (Which tests to run and when)
- Test Executions (Run-time tracking of test outcomes)
- Defects (Logged bugs linked to failed test cases)

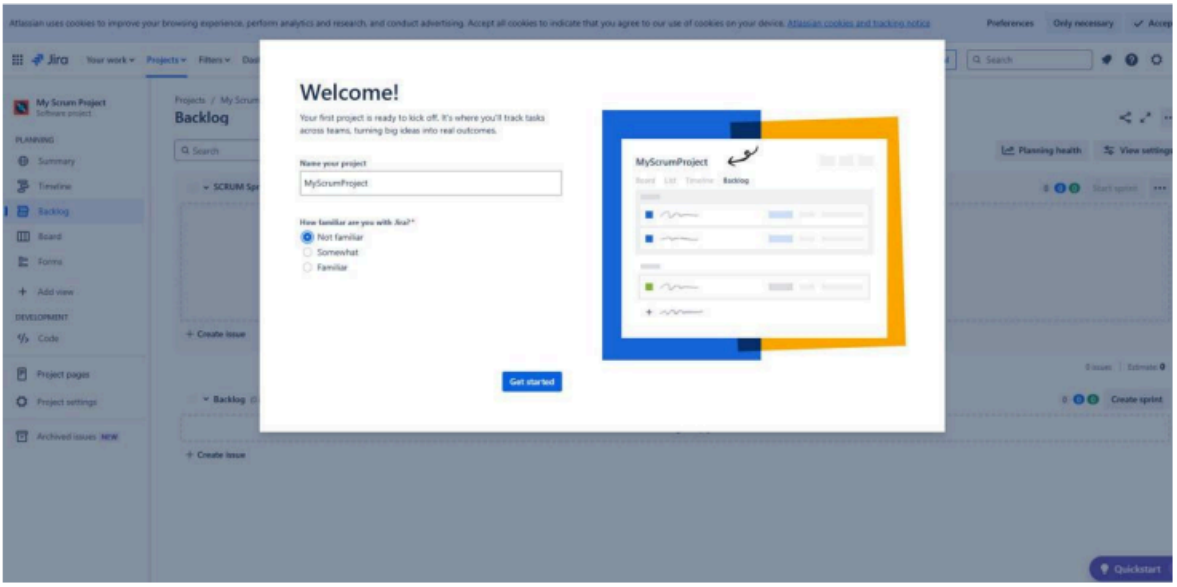
6. Creating and Managing Agile Sprints in JIRA

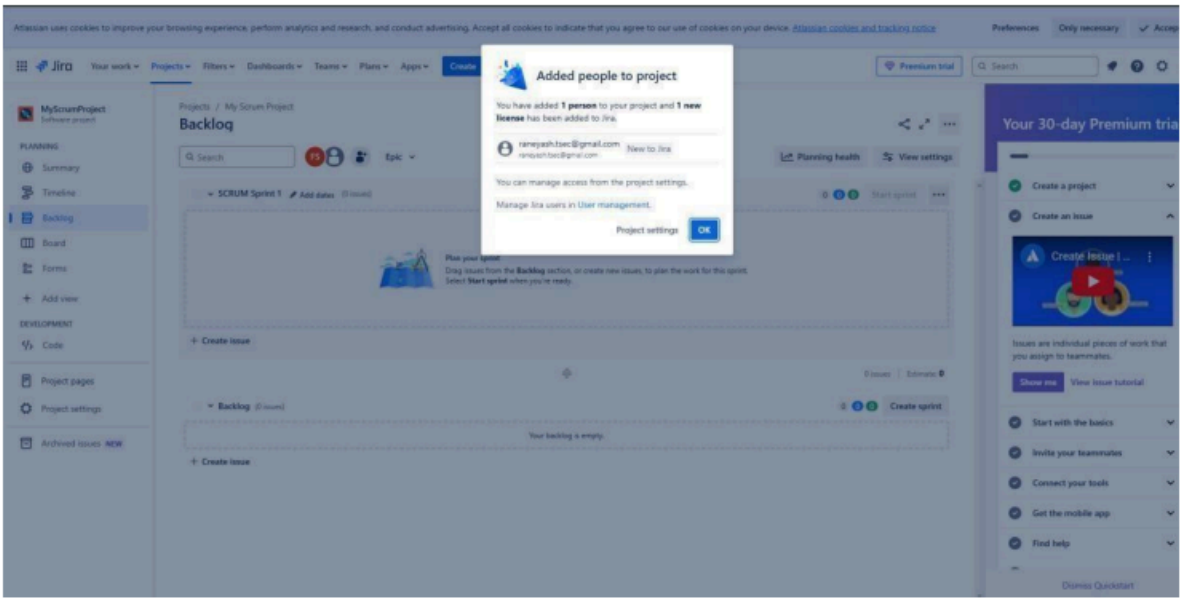
To manage Agile sprints within JIRA:

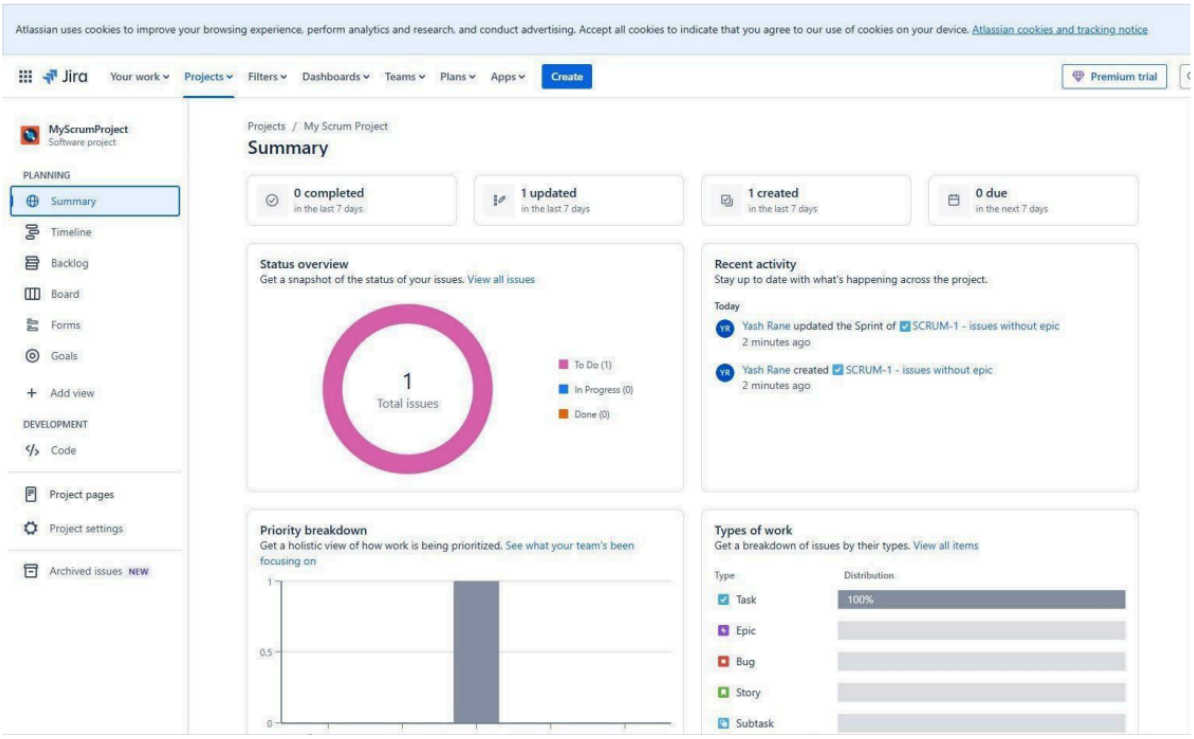
- Create a project with a Scrum template
- Create user stories or tasks and add them to the product backlog
- Start a sprint by moving backlog items into a sprint container
- Assign issues to team members and monitor using the Active Sprint board
- Conduct sprint reviews and retrospectives at the end of each cycle

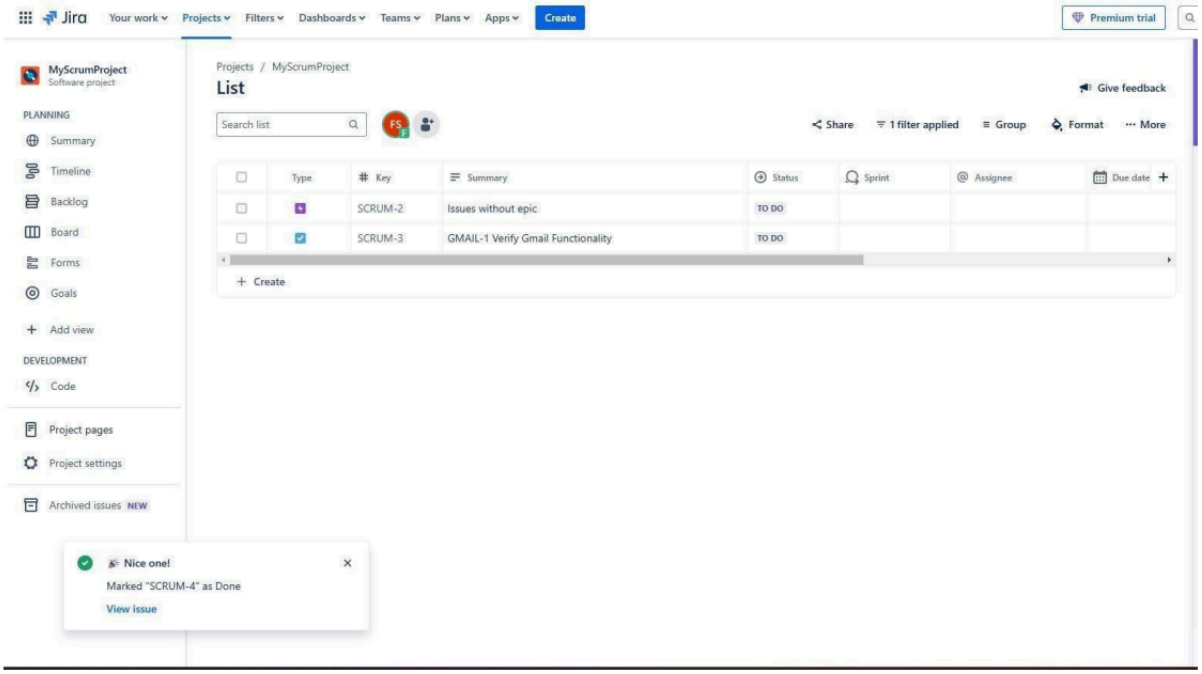
Implementation:

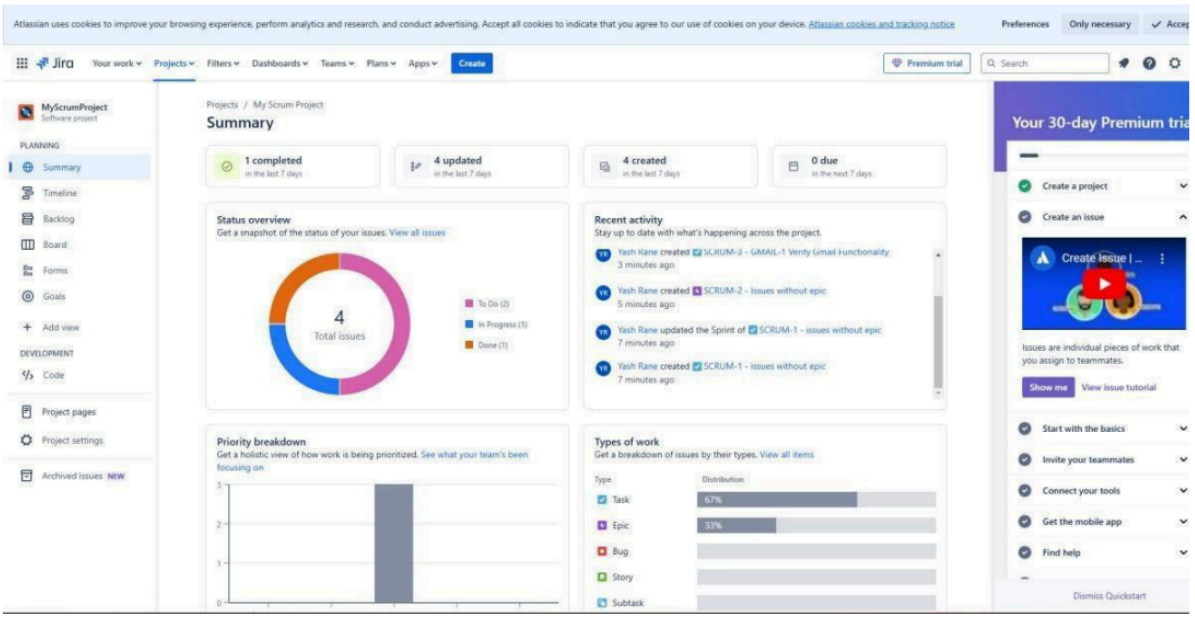


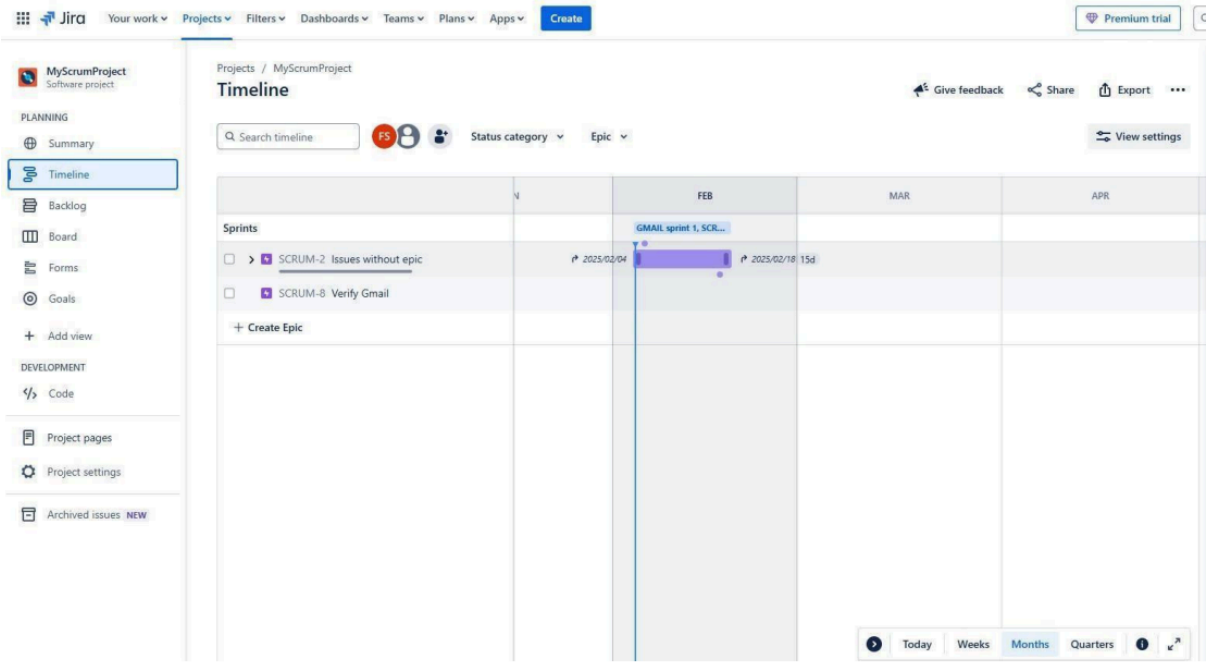

Welcome!
Your first project is ready to kick off. It's where you'll track tasks across teams, turning big ideas into real outcomes.
Name your project
MyScrumProject
How familiar are you with Jira?*
Not familiar
Somewhat
Familiar
Get started
MyScrumProject
Backlog

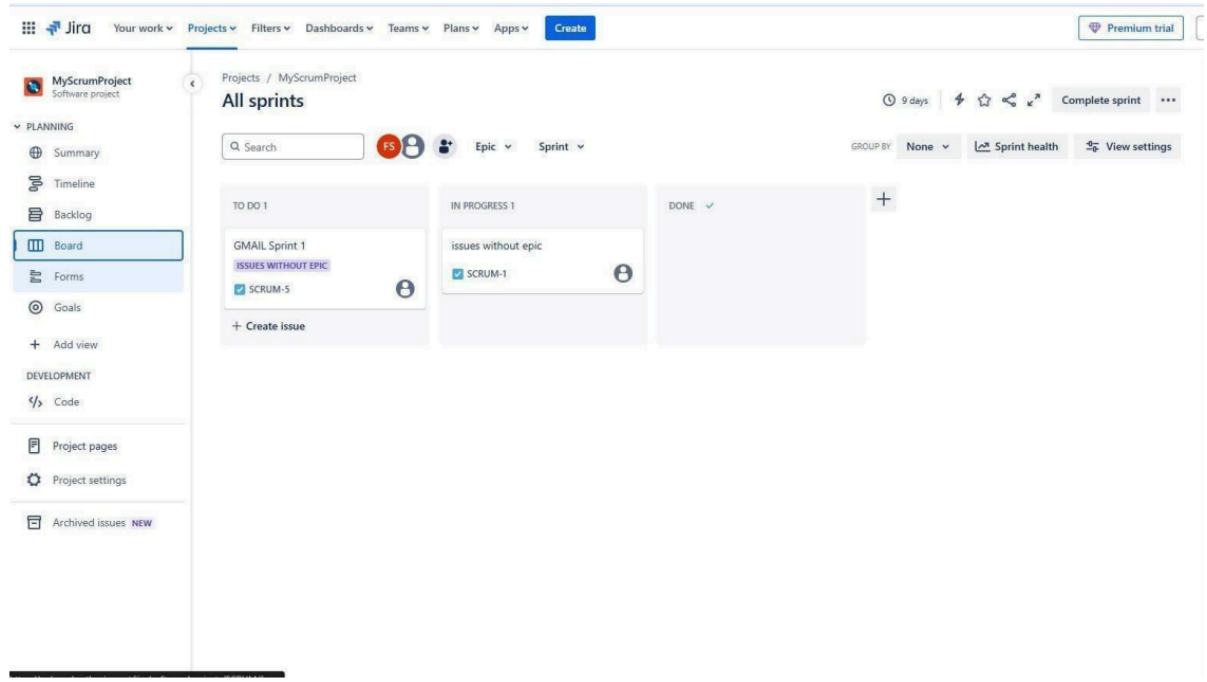

Added people to project
You have added 1 person to your project and 1 new license has been added to Jira.
raneyash.tsec@gmail.com
New to Jira
You can manage access from the project settings.
Manage Jira users in User management.
Project settings
OK
Backlog
Your 30-day Premium tria

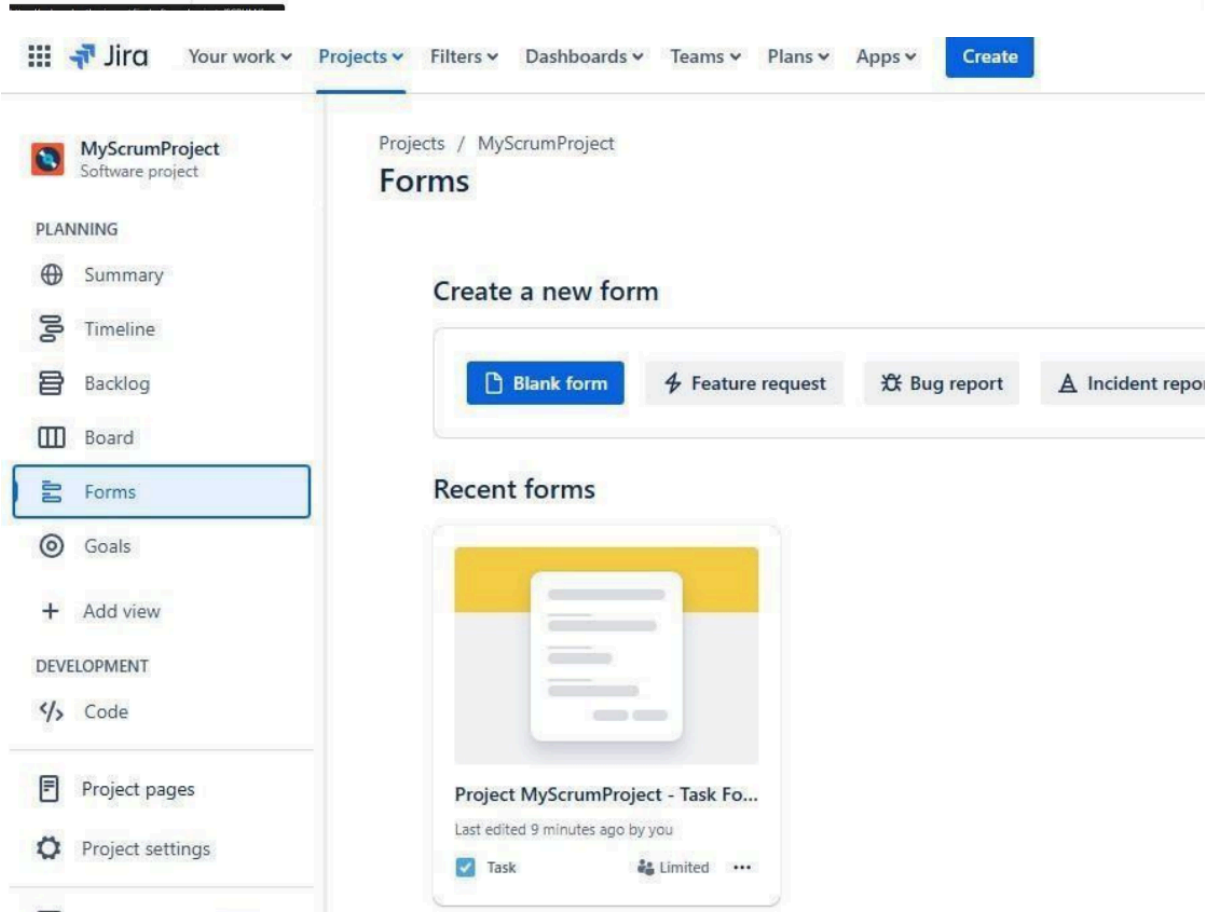

Atlassian uses cookies to improve your browsing experience, perform analytics and research, and conduct advertising. Accept all cookies to indicate that you agree to our use of cookies on your device. Atlassian cookies and tracking notice
Jira
Your work
Projects
Filters
Dashboards
Teams
Plans
Apps
Create
Premium trial
MyScrumProject
Software project
PLANNING
Summary
Timeline
Backlog
Board
Forms
Goals
Add view
DEVELOPMENT
Code
Project pages
Project settings
Archived issues NEW
Projects / My Scrum Project
Summary
0 completed
in the last 7 days
1 updated
in the last 7 days
1 created
in the last 7 days
0 due
in the next 7 days
Status overview
Get a snapshot of the status of your issues. View all issues
1
Total issues
To Do (1)
In Progress (0)
Done (0)
Recent activity
Stay up to date with what's happening across the project.
Today
Yash Rane updated the Sprint of SCRUM-1 - issues without epic
2 minutes ago
Yash Rane created SCRUM-1 - issues without epic
2 minutes ago
Priority breakdown
Get a holistic view of how work is being prioritized. See what your team's been focusing on
Types of work
Get a breakdown of issues by their types. View all items
Type
Distribution
Task
100%
Epic
Bug
Story
Subtask

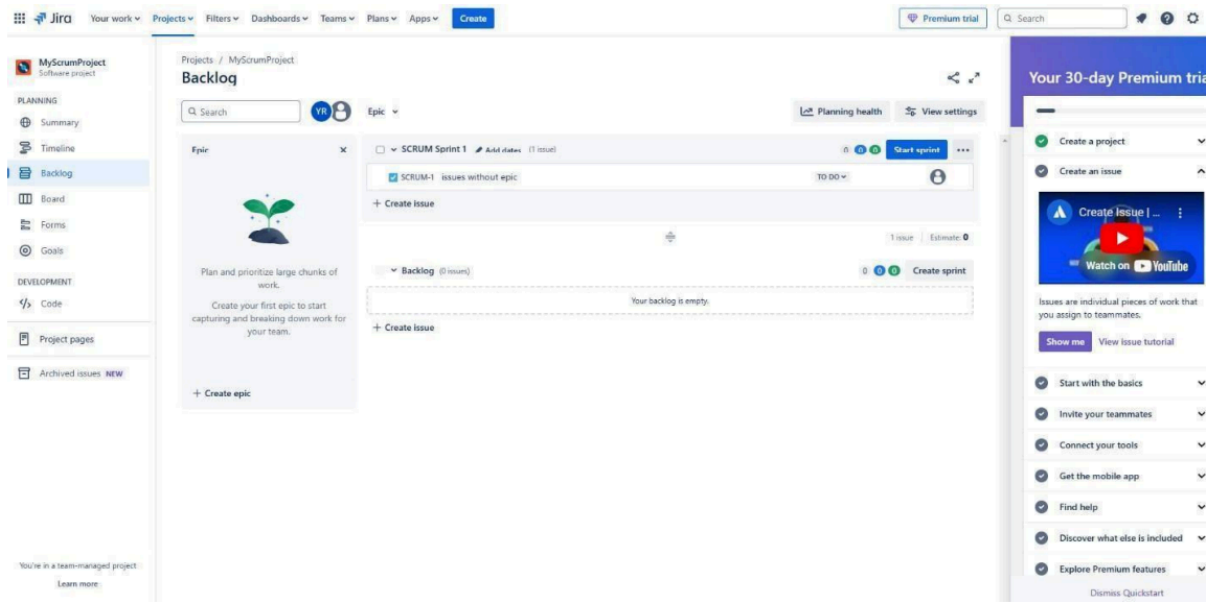

Jira
Your work
Projects
Filters
Dashboards
Teams
Plans
Apps
Create
Premium trial
MyScrumProject
Software project
PLANNING
Summary
Timeline
Backlog
Board
Forms
Goals
Add view
DEVELOPMENT
Code
Project pages
Project settings
Archived issues NEW
Projects / MyScrumProject
List
Give feedback
Search list
Share
1 filter applied
Group
Format
More
Type
Key
Summary
Status
Sprint
Assignee
Due date
SCRUM-2
Issues without epic
TO DO
SCRUM-3
GMAIL-1 Verify Gmail Functionality
TO DO
Create
Nice one!
Marked "SCRUM-4" as Done
View issue

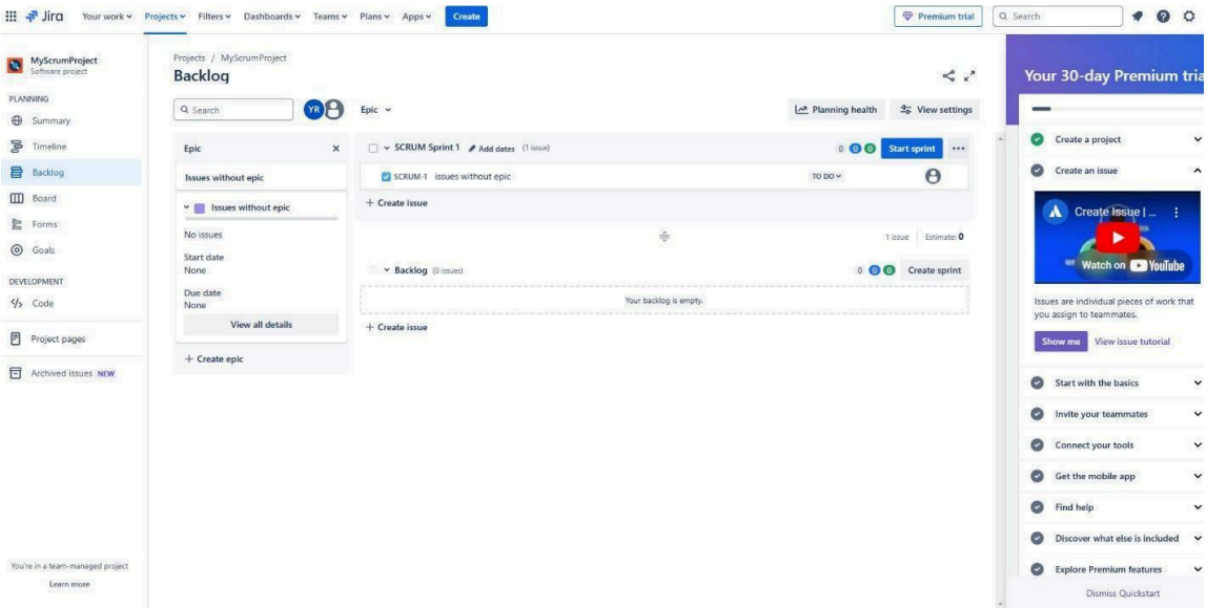

Jira
Your work
Projects
Filters
Dashboards
Teams
Plans
Apps
Create
Premium trial
MyScrumProject
Software project
PLANNING
Summary
Timeline
Backlog
Board
Forms
Goals
Add view
DEVELOPMENT
Code
Project pages
Project settings
Archived issues NEW
Projects / My Scrum Project
Summary
1 completed
in the last 7 days
4 updated
in the last 7 days
4 created
in the last 7 days
0 due
in the next 7 days
Status overview
Get a snapshot of the status of your issues. View all issues
4
Total issues
To Do (2)
In Progress (1)
Done (1)
Recent activity
Stay up to date with what's happening across the project.
Yash Rane created SCRUM-3 - GMAIL-1 Verify Gmail Functionality
3 minutes ago
Yash Rane created SCRUM-2 - Issues without epic
5 minutes ago
Yash Rane updated the Sprint of SCRUM-1 - issues without epic
7 minutes ago
Yash Rane created SCRUM-1 - issues without epic
7 minutes ago
Priority breakdown
Get a holistic view of how work is being prioritized. See what your team's been focusing on
Types of work
Get a breakdown of issues by their types. View all items
Type
Distribution
Task
67%
Epic
33%
Bug
Story
Subtask
Your 30-day Premium trial
Create a project
Create an issue
Create issue | ...
Issues are individual pieces of work that you assign to teammates.
Show me
View issue tutorial
Start with the basics
Invite your teammates
Connect your tools
Get the mobile app
Find help
Dismiss Quickstart

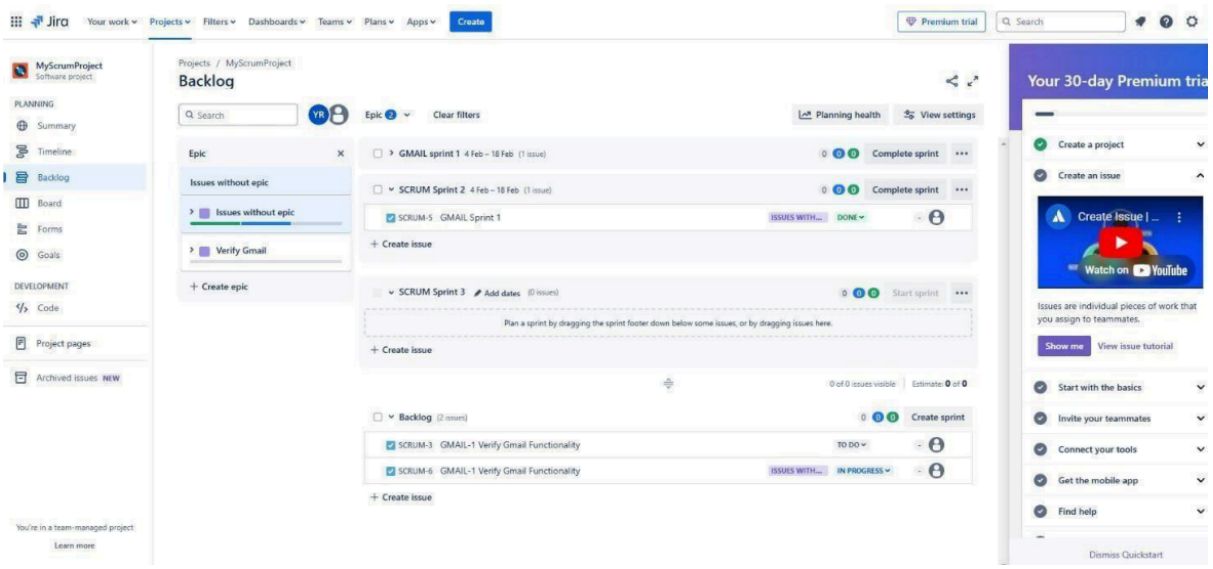

Jira
Your work
Projects
Filters
Dashboards
Teams
Plans
Apps
Create
Premium trial
MyScrumProject
Software project
PLANNING
Summary
Timeline
Backlog
Board
Forms
Goals
Add view
DEVELOPMENT
Code
Project pages
Project settings
Archived issues NEW
Projects / MyScrumProject
Timeline
Give feedback
Share
Export
Search timeline
Status category
Epic
View settings
FEB
MAR
APR
Sprints
GMAIL sprint 1, SCR...
SCRUM-2 Issues without epic
2025/02/04
2025/02/18
15d
SCRUM-8 Verify Gmail
Create Epic
Today
Weeks
Months
Quarters


Jira
Your work
Projects
Filters
Dashboards
Teams
Plans
Apps
Create
Premium trial
MyScrumProject
Software project
PLANNING
Summary
Timeline
Backlog
Board
Forms
Goals
Add view
DEVELOPMENT
Code
Project pages
Project settings
Archived issues NEW
Projects / MyScrumProject
All sprints
9 days
Complete sprint
Search
Epic
Sprint
GROUP BY
None
Sprint health
View settings
TO DO 1
IN PROGRESS 1
DONE
GMAIL Sprint 1
ISSUES WITHOUT EPIC
SCRUM-5
issues without epic
SCRUM-1
Create issue


Jira
Your work
Projects
Filters
Dashboards
Teams
Plans
Apps
Create
MyScrumProject
Software project
PLANNING
Summary
Timeline
Backlog
Board
Forms
Goals
Add view
DEVELOPMENT
Code
Project pages
Project settings
Projects / MyScrumProject
Forms
Create a new form
Blank form
Feature request
Bug report
Incident repo
Recent forms
Project MyScrumProject - Task Fo...
Last edited 9 minutes ago by you
Task
Limited


Jira
Your work
Projects
Filters
Dashboards
Teams
Plans
Apps
Create
Premium trial
Search
MyScrumProject
Software project
PLANNING
Summary
Timeline
Backlog
Board
Forms
Goals
DEVELOPMENT
Code
Project pages
Archived issues NEW
You're in a team-managed project
Learn more
Projects / MyScrumProject
Backlog
Search
YR
Epic
Planning health
View settings
Epic
Plan and prioritize large chunks of work.
Create your first epic to start capturing and breaking down work for your team.
Create epic
SCRUM Sprint 1
Add dates
(1 issue)
Start sprint
SCRUM-1 issues without epic
TO DO
Create issue
1 issue
Estimate: 0
Backlog
(0 issues)
Create sprint
Your backlog is empty.
Create issue
Your 30-day Premium tria
Create a project
Create an issue
Create Issue | ...
Watch on YouTube
Issues are individual pieces of work that you assign to teammates.
Show me
View issue tutorial
Start with the basics
Invite your teammates
Connect your tools
Get the mobile app
Find help
Discover what else is included
Explore Premium features
Dismiss Quickstart


Jira
Your work
Projects
Filters
Dashboards
Teams
Plans
Apps
Create
Premium trial
Search
MyScrumProject
Software project
PLANNING
Summary
Timeline
Backlog
Board
Forms
Goals
DEVELOPMENT
Code
Project pages
Archived issues NEW
You're in a team-managed project
Learn more
Projects / MyScrumProject
Backlog
Search
YR
Epic
Planning health
View settings
Epic
Issues without epic
Issues without epic
No issues
Start date
None
Due date
None
View all details
Create epic
SCRUM Sprint 1
Add dates
(1 issue)
Start sprint
SCRUM-1 issues without epic
TO DO
Create issue
1 issue
Estimate: 0
Backlog
(0 issues)
Create sprint
Your backlog is empty.
Create issue
Your 30-day Premium tria
Create a project
Create an issue
Create Issue | ...
Watch on YouTube
Issues are individual pieces of work that you assign to teammates.
Show me
View issue tutorial
Start with the basics
Invite your teammates
Connect your tools
Get the mobile app
Find help
Discover what else is included
Explore Premium features
Dismiss Quickstart



Conclusion: Hence we have successfully Studied Agile Methodology and Test case Management using JIRA Tool