

Experiment No 6

Aim: To study Agile methodology and Test case Management using Jira Tool.

Theory:

Overview of Jira

Jira is a comprehensive project management and issue tracking tool developed by **Atlassian**. It is widely used across various industries, but it is especially prominent in software development teams and Agile environments. Jira provides a flexible platform for tracking tasks, bugs, user stories, and other issues throughout the lifecycle of a project, from inception to completion. With its powerful capabilities and broad customization options, Jira is designed to help teams collaborate efficiently, maintain workflow consistency, and achieve their project goals.

1. The Purpose of Jira

The primary purpose of Jira is to **track and manage work**. It provides a structured approach to managing tasks and issues, whether they are software bugs, user stories, features, or any other work items. Jira helps teams monitor the progress of these items, assign responsibilities, set priorities, and resolve issues in a timely manner. It ensures that all aspects of the project are properly documented, which promotes transparency and improves overall communication across teams.

Jira is most effective in Agile project management, supporting frameworks like **Scrum** and **Kanban**. However, it can also be adapted to fit traditional project management methodologies, making it a versatile tool for teams with different operational needs.

2. Key Features of Jira

Jira provides a wide range of features that make it an indispensable tool for project management:

- **Issue Tracking:** The core feature of Jira is its ability to track issues, which can include tasks, bugs, user stories, and other work items. Issues are organized into projects and can be assigned to specific team members. These issues can include detailed information such as priorities, deadlines, descriptions, and attachments.
- **Customizable Workflows:** One of the standout features of Jira is its customizable workflows. A workflow defines the various stages through which an issue passes (e.g., To Do, In Progress, Done) and the actions that can be taken at each stage. Workflows are highly flexible, enabling teams to tailor them to suit their specific processes.
- **Agile Boards:** Jira supports **Scrum** and **Kanban boards**, which are used for visualizing the work process. Scrum boards help teams plan sprints, track progress during the sprint, and ensure that goals are met. Kanban boards provide a continuous flow of work, helping teams manage and prioritize tasks as they arise.

- **Backlog Management:** Jira offers an intuitive backlog management feature where all tasks are stored before they are worked on. The backlog serves as a queue of items that need attention and can be prioritized based on importance or urgency. The **Product Backlog** in Scrum helps product owners organize and prioritize tasks for upcoming sprints.
- **Epics, Stories, and Tasks:** Jira supports hierarchical structures that enable large projects to be broken down into manageable parts. At the top of this hierarchy are **Epics**, which represent large bodies of work. These are broken down into **Stories** (user stories or feature requests), and further broken down into **Tasks** (individual actions or steps).
- **Reporting and Dashboards:** Jira provides built-in reporting tools, such as burndown charts, sprint reports, and velocity charts, which help teams analyze performance and predict future progress. Customizable dashboards provide a comprehensive view of ongoing projects, allowing users to monitor various metrics and project health indicators.
- **Permissions and Security:** Jira allows for detailed permission settings, ensuring that only authorized users can access specific projects, issues, or actions. This level of control helps protect sensitive information and ensures that teams operate within defined boundaries.
- **Integration with Other Tools:** Jira integrates seamlessly with other **Atlassian** tools, such as **Confluence** for documentation, **Bitbucket** for source code management, and **Trello** for simple task management. It also supports third-party integrations, such as GitHub, Slack, and various Continuous Integration (CI) and Continuous Delivery (CD) tools.

3. Jira in Agile Methodology

Jira is specifically built to support **Agile methodologies**, such as Scrum and Kanban, which are widely used in software development.

- **Scrum in Jira:** Jira's Scrum features are designed to help teams organize work into **Sprints**—timeboxed periods during which a specific set of work is completed. Teams plan their sprint by selecting items from the product backlog, which are then moved to the **Sprint Backlog**. During the sprint, progress is tracked on a Scrum board. Jira also offers **burndown charts**, which show how much work remains in a sprint, helping teams ensure that they are on track to meet their goals.
- **Kanban in Jira:** Kanban is a continuous flow system, ideal for teams with an ongoing stream of work rather than timeboxed sprints. Jira's Kanban boards allow teams to manage their workflow visually, optimizing the flow of work from one stage to the next. Kanban focuses on **work in progress (WIP)** limits to ensure that teams don't overcommit to tasks at any given time.

4. Customizability and Flexibility

Jira's customizability is one of its key strengths. Teams can create custom **issue types**, **fields**, and **screens**, adapting the tool to fit their specific needs. For example, software development

teams may use different issue types, such as **bugs**, **user stories**, or **feature requests**, each with unique fields and workflows. Non-technical teams, such as marketing or HR, can also use Jira by creating custom templates that suit their specific use cases.

Additionally, Jira supports custom **notifications**, ensuring that stakeholders are kept in the loop whenever relevant changes occur.

5. Benefits of Using Jira

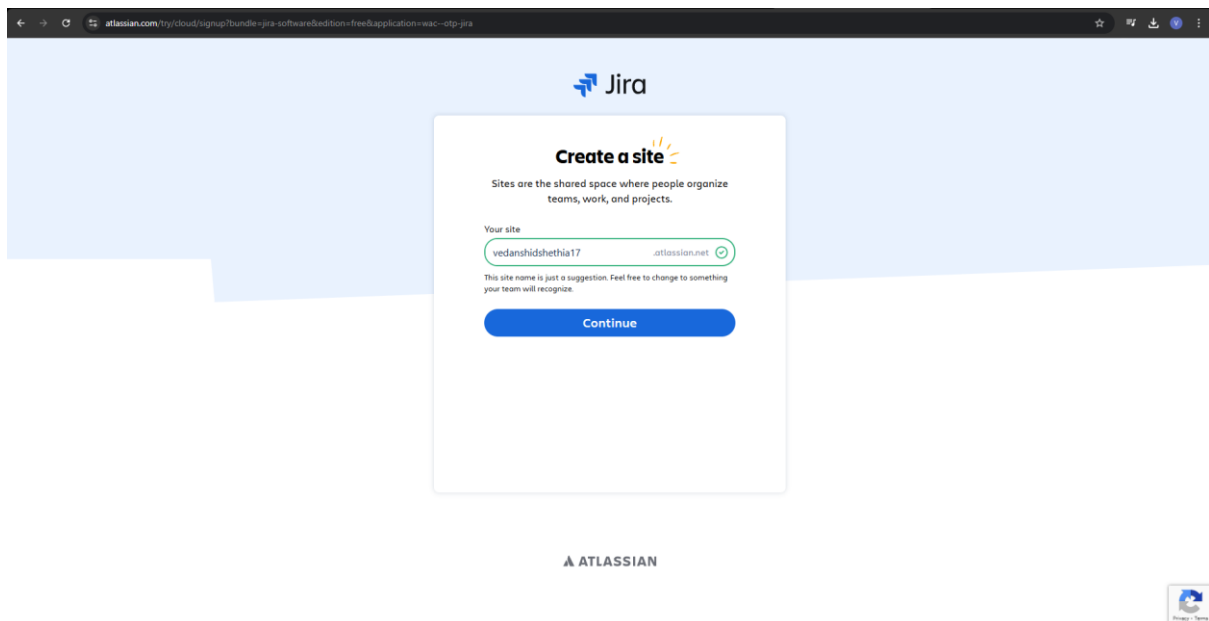
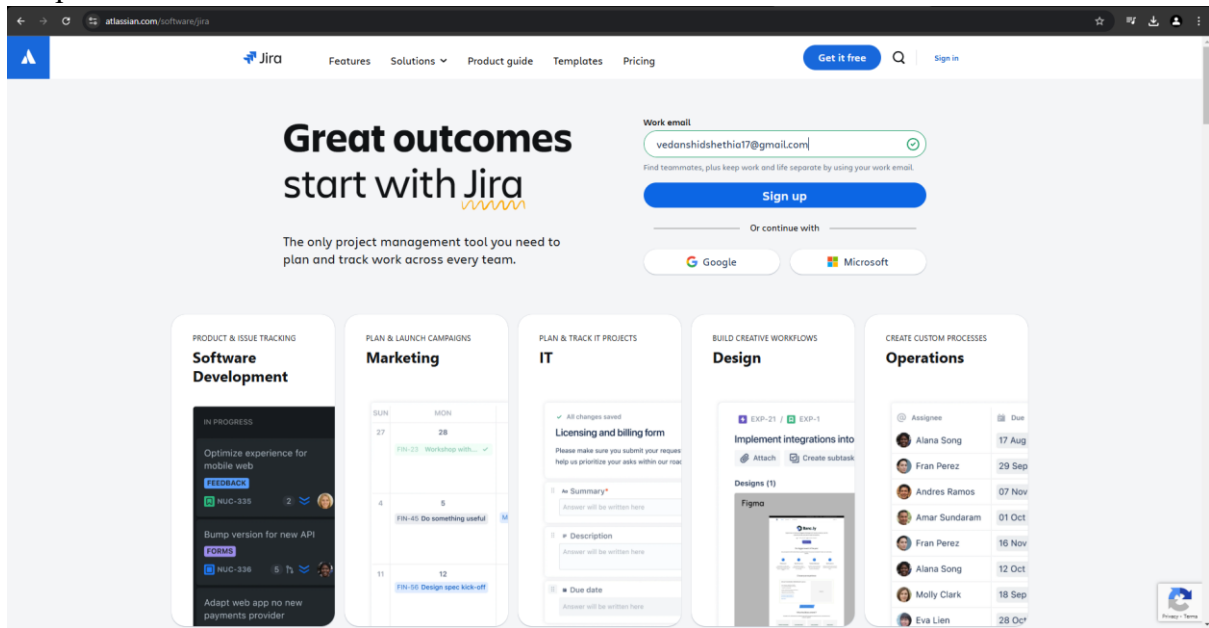
- **Improved Collaboration:** Jira enables real-time collaboration among team members by providing a centralized platform to track work, share progress, and communicate. It breaks down silos and helps teams stay aligned with project goals.
- **Increased Transparency:** Jira offers visibility into project progress, task assignments, and bottlenecks. Stakeholders, including team members, managers, and clients, can access up-to-date information, which fosters transparency and trust.
- **Better Project Management:** Jira's tools for backlog management, sprint planning, and issue prioritization allow project managers to efficiently plan and execute work. The ability to create and track milestones ensures that projects stay on track and deadlines are met.
- **Enhanced Productivity:** With its well-organized structure, Jira minimizes confusion and helps team members stay focused on their tasks. The integration of development tools, such as code repositories and testing systems, also ensures that developers can work efficiently within a unified platform.
- **Scalability:** Jira scales well for small teams as well as large organizations. Whether a team is managing a handful of tasks or handling complex, multi-team projects, Jira can adapt and grow with the organization's needs.

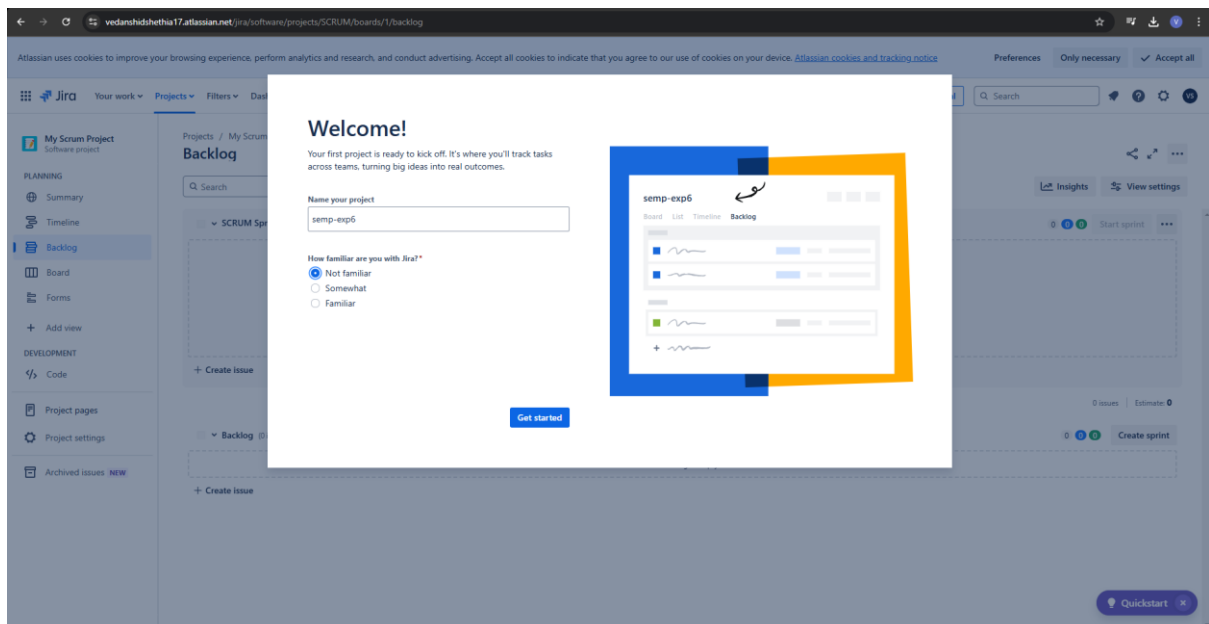
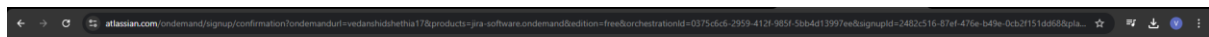
6. Common Use Cases for Jira

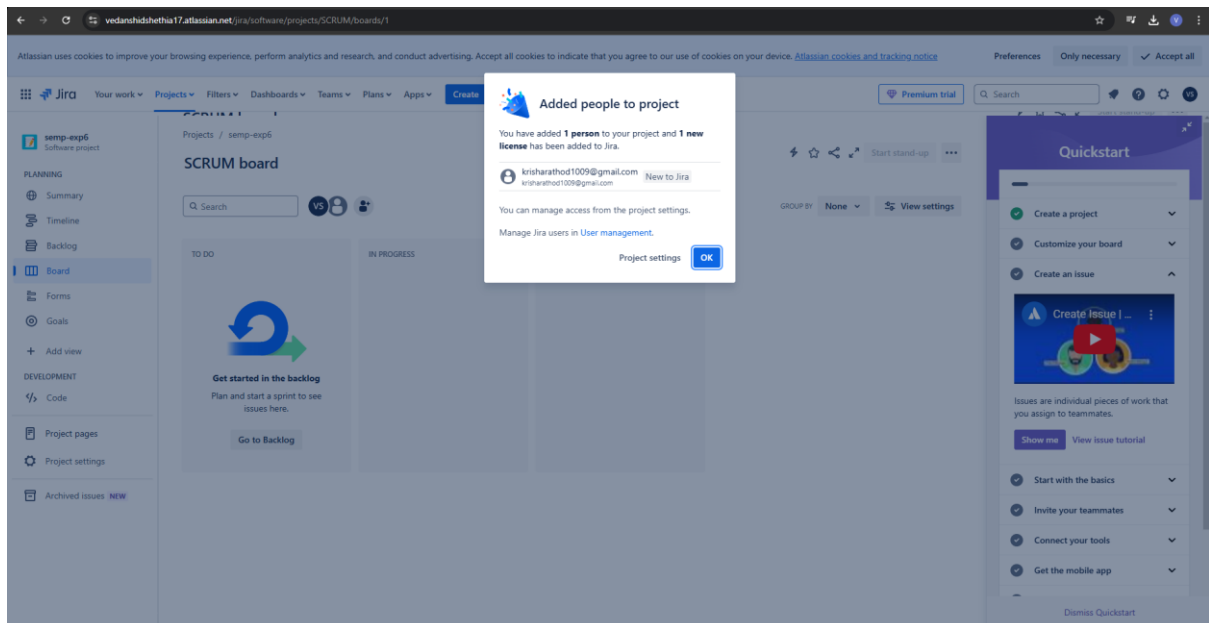
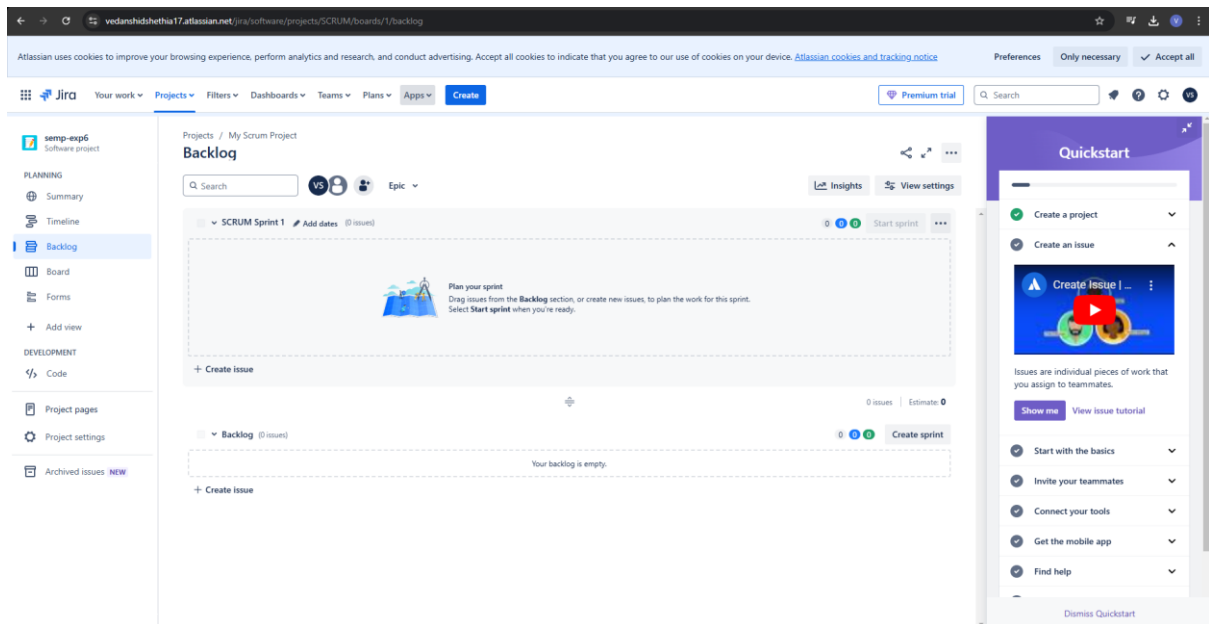
- **Software Development:** Jira is commonly used in software development for tracking bugs, managing user stories, planning sprints, and integrating with version control systems.
- **IT Helpdesk & Service Desk:** Jira Service Management is used by IT teams to handle service requests, incidents, and change requests, providing a systematic approach to handling internal or customer support tickets.
- **Project Management:** Non-technical teams use Jira to track tasks, manage workflows, and ensure that deadlines are met. Whether for marketing campaigns, HR processes, or operations management, Jira can be adapted to various industries.
- **Change Management:** Jira is ideal for managing change requests in complex projects or businesses, ensuring that all changes are tracked, reviewed, and implemented according to best practices.

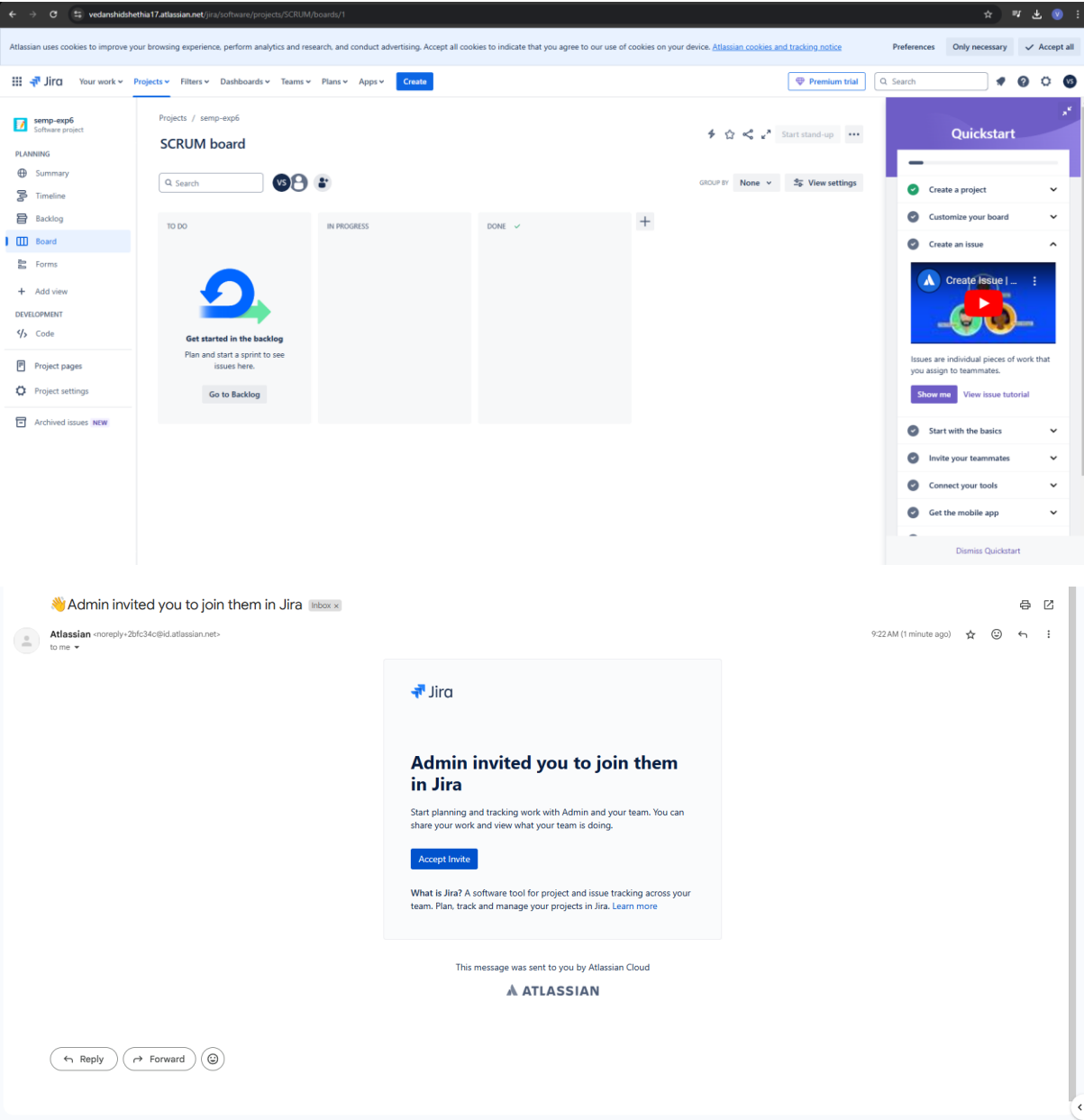
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Output:









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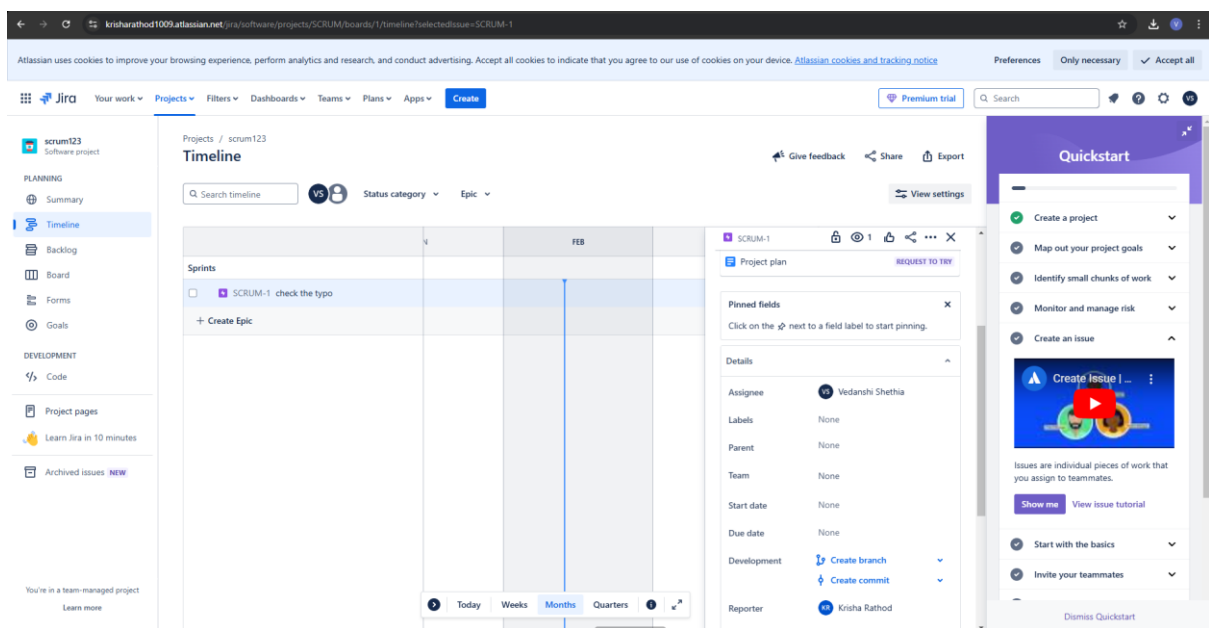
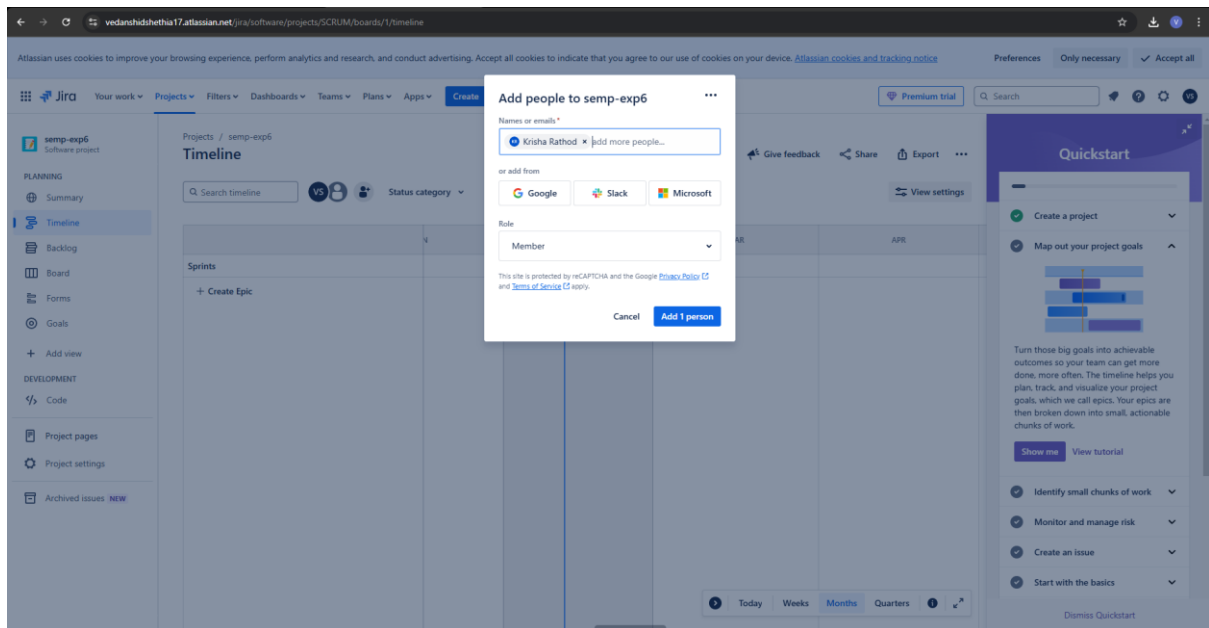
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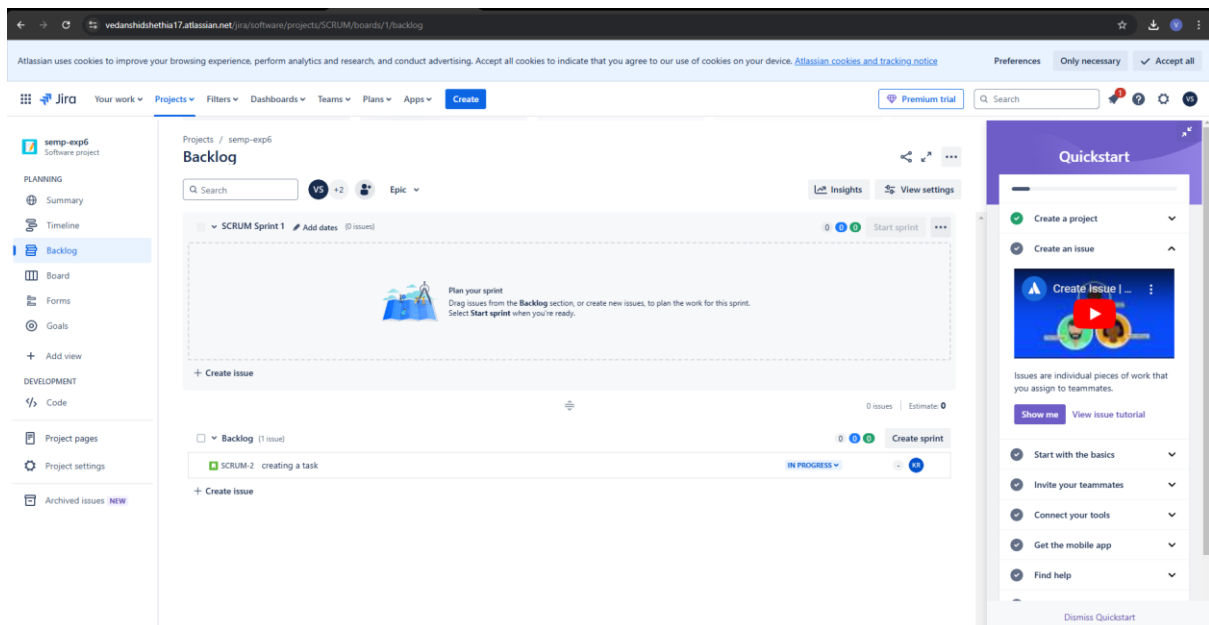
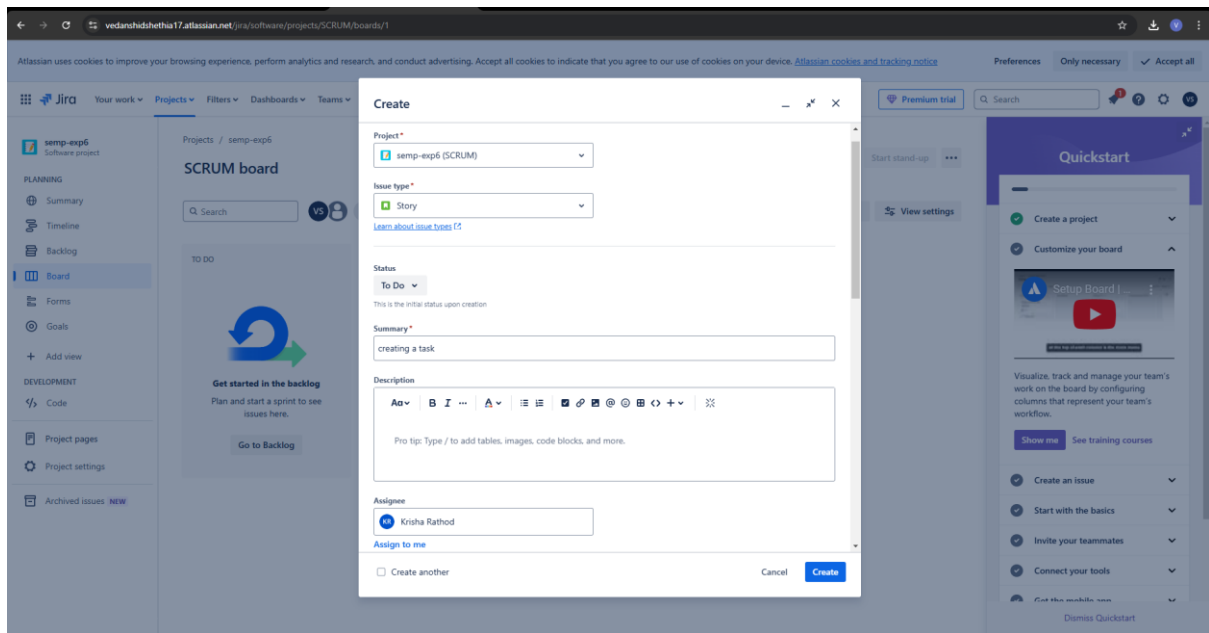
This screenshot shows the Jira interface for a project named 'scrum123'. The main view is the 'SCRUM board', which displays a Kanban-style workflow with three columns: 'TO DO', 'IN PROGRESS', and 'DONE'. The 'TO DO' column contains a card with a circular arrow icon and the text 'Get started in the backlog'. The 'IN PROGRESS' and 'DONE' columns are currently empty. On the right side, there is a 'Quickstart' sidebar with a list of tasks to complete, including 'Create a project', 'Create an issue', 'Start with the basics', 'Invite your teammates', 'Connect your tools', 'Get the mobile app', 'Find help', 'Discover what else is included', and 'Explore Premium features'. The top navigation bar includes links for 'Your work', 'Projects', 'Filters', 'Dashboards', 'Teams', 'Plans', 'Apps', and a 'Create' button. The left sidebar shows the project's navigation menu, including 'Summary', 'Timeline', 'Backlog', 'Board', 'Forms', 'Goals', 'Code', 'Project pages', and 'Archived issues'.

This screenshot shows the Jira interface for the same project 'scrum123', but with the 'Timeline' view selected. The main view displays a timeline for the month of February. A single issue, 'SCRUM-1 check the typo', is shown in the 'DONE' status. The 'Quickstart' sidebar on the right is updated with new tasks, including 'Map out your project goals', 'Identify small chunks of work', 'Monitor and manage risk', and 'Create an issue'. The top navigation bar and left sidebar remain the same as in the previous screenshot. The bottom of the screen shows a date picker with 'Today', 'Weeks', 'Months', and 'Quarters' options.

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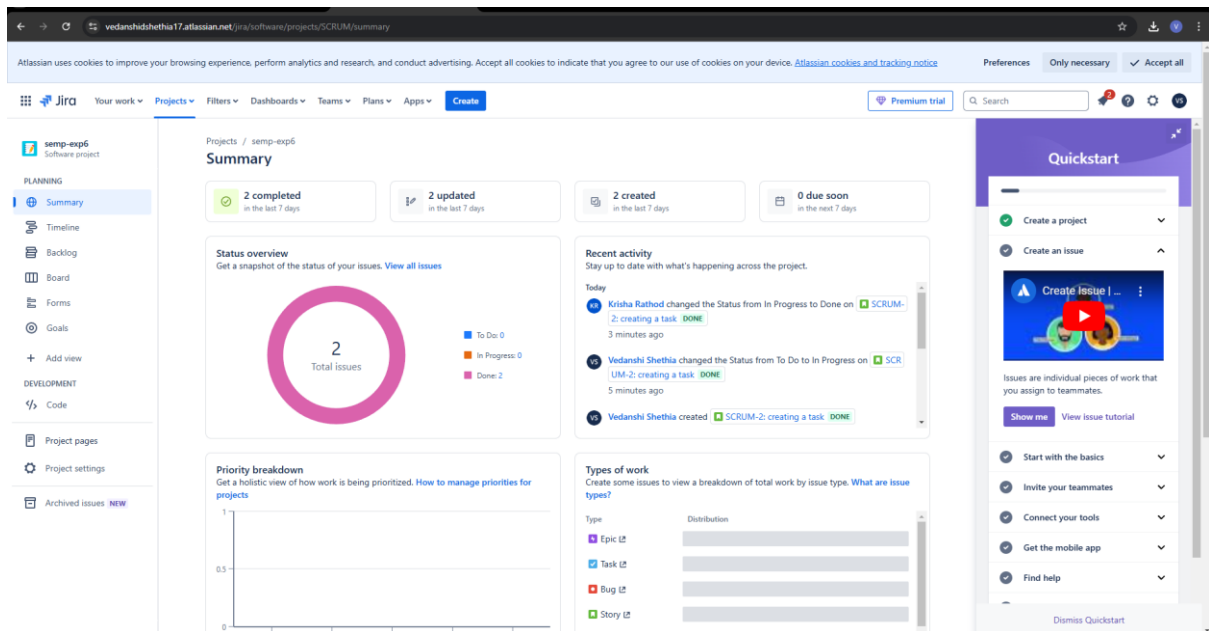
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This screenshot shows the Jira Backlog for project 'semp-exp6'. The left sidebar contains navigation options: Planning (Summary, Timeline, Backlog), Development (Board, Forms, Goals, Code), and Project pages (Project pages, Archived issues). The main content area is titled 'Backlog' and shows a 'SCRUM Sprint 1' with a 'Plan your sprint' instruction. Below the sprint, there is a 'Backlog (1 issue)' section with one issue: 'SCRUM-2 creating a task'. A 'Create issue' button is visible at the bottom. On the right, a 'creating a task' sidebar is open, showing options to 'Add epic', 'Add issue', and 'Improve issue'. It also includes a 'Description' field, 'Confluence content' options, and a 'Pinned fields' section.

This screenshot shows the Jira Summary view for project 'scrum123'. The left sidebar is identical to the previous view. The main content area is titled 'Summary' and features several widgets: '2 completed in the last 7 days', '2 updated in the last 7 days', '2 created in the last 7 days', and '0 due soon in the next 7 days'. Below these is a 'Status overview' widget with a donut chart showing '2 Total Issues' (To Do: 0, In Progress: 0, Done: 2). The 'Recent activity' widget lists recent changes: 'Krishna Rathod changed the Status from To Do to Done on SCRUM-2: se pm project DONE 3 minutes ago', 'Krishna Rathod created SCRUM-2: sepm project DONE 8 minutes ago', and 'Vedanshi Shethia changed the Status from To Do to Done on SCRUM-1: check the type DONE'. The 'Priority breakdown' widget shows a line graph. The 'Types of work' widget displays a table with columns for 'Type' (Epic, Task, Bug, Story) and 'Distribution'. On the right, a 'Quickstart' sidebar is open, showing steps like 'Create a project', 'Create an issue', 'Start with the basics', 'Invite your teammates', 'Connect your tools', 'Get the mobile app', and 'Find help'.



Conclusion

Jira is a powerful, flexible, and highly customizable project management tool that has become the go-to solution for Agile teams, particularly in software development. With its support for Scrum, Kanban, and other methodologies, Jira enables teams to organize, prioritize, and track work efficiently. Through its rich set of features, customizable workflows, and seamless integrations with other tools, Jira helps teams improve collaboration, streamline processes, and deliver high-quality projects on time.