

## **EXPERIMENT 6**

### **STUDYING AGILE METHODOLOGY AND TEST CASE MANAGEMENT USING JIRA TOOL**

Theory:

#### **1. Introduction to Agile Methodology**

Agile methodology is an iterative approach to software development and project management that emphasizes flexibility, collaboration, and customer feedback. It helps teams deliver high-quality software in incremental steps rather than following a rigid plan.

##### **1.1 Agile Manifesto**

Agile is based on four core values:

1. Individuals and interactions over processes and tools.
2. Working software over comprehensive documentation.
3. Customer collaboration over contract negotiation.
4. Responding to change over following a plan.

##### **1.2 Agile Principles**

Agile follows 12 principles, including:

- Customer satisfaction through early and continuous delivery.
- Embracing changing requirements for the customer's competitive advantage.
- Delivering working software frequently.
- Close collaboration between business and development teams.
- Motivated individuals and self-organizing teams.
- Continuous attention to technical excellence.

#### **2. Agile Frameworks**

Several frameworks exist under Agile, including:

1. Scrum – A framework for iterative and incremental product development.
2. Kanban – A visual workflow management system.
3. Extreme Programming (XP) – Focuses on engineering practices.
4. Lean Software Development – Focuses on minimizing waste and maximizing value.

## 2.1 Scrum Framework

Scrum is one of the most popular Agile frameworks. It consists of:

- Scrum Team: Product Owner, Scrum Master, Development Team.
  - Scrum Artifacts: Product Backlog, Sprint Backlog, Increment.
  - Scrum Events: Sprint Planning, Daily Stand-ups, Sprint Review, Sprint Retrospective. 📅
- Sprint Cycle: A time-boxed period (usually 2-4 weeks) where a team completes selected backlog items.

## 3. Introduction to Jira

Jira is a popular tool developed by Atlassian for Agile project management, issue tracking, and test case management. It helps teams plan, track, and manage software development projects efficiently.

### 3.1 Features of Jira

- Customizable dashboards for tracking project progress.
- Issue tracking for creating, assigning, and monitoring tasks.
- Workflow automation to improve efficiency.
- Integration with various development and testing tools.

## 4. Test Case Management Using Jira

Jira can be used to manage test cases effectively by integrating with testing plugins like Zephyr and Xray.

### 4.1 Steps to Manage Test Cases in Jira

#### 1. Creating a Test Case:

- Navigate to the Jira project.
- Click on Create Issue and select Test Case (if using Zephyr/Xray).
- Define the test case with details such as Test Summary, Preconditions, Test Steps, and Expected Results.
- Click Create to save the test case.

#### 2. Executing a Test Case:

- Open the created test case.
- Click Execute and select the test cycle.
- Update the test execution status (Pass, Fail, In Progress, Blocked).

#### 3. Tracking Test Results:

- Use Jira dashboards to generate reports on test execution progress.
- Analyze defects by linking test cases to bug reports.

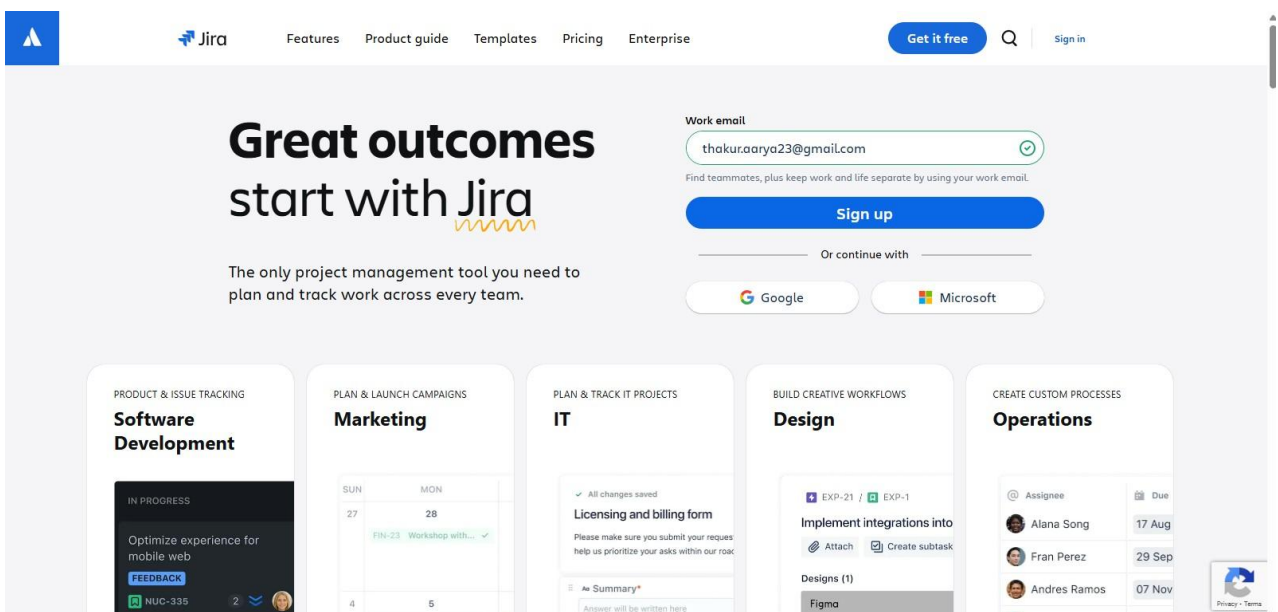
#### 4. Integrating Jira with CI/CD Pipelines:

- Jira can integrate with Jenkins, Bamboo, and other DevOps tools to automate testing workflows.

## 5. Benefits of Using Jira for Agile and Test Case Management

- **Centralized Tracking:** All tasks, sprints, and test cases are managed in one place. 🎬  
**Collaboration:** Teams can communicate and update task statuses in real-time.
- **Customization:** Jira can be tailored to fit any workflow.
- **Automation:** Reduces manual effort through workflow automation and integration with DevOps tools.

Output:



# 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

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How familiar are you with Jira? \*

- ☒ Not familiar  
☐ Somewhat  
☐ Familiar

Get started



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## CCS board

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RS Epic

GROUP BY

None

Insights

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### TO DO 1

(Sample) Develop Frontend Interface  
(SAMPLE) CHATBOT DEVELOPMENT  
✓ CCS-5

+ Create issue

### IN PROGRESS 2

(Sample) Implement NLP Engine  
(SAMPLE) CHATBOT DEVELOPMENT  
✓ CCS-3

(Sample) Design Chatbot Personality  
(SAMPLE) USER INTERACTION DESIGN  
✓ CCS-6

### DONE 1 ✓

(Sample) Create User Flow Diagram  
(SAMPLE) USER INTERACTION DESIGN  
✓ CCS-4

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PLANNING

- Summary
- Timeline**
- Board
- Calendar
- List
- Forms
- Issues
- + Add view

DEVELOPMENT

- Code

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### Timeline

Search timeline RS RS Status category Epic View settings

	FEB	MAR	APR	MAY
CCS-2 (Sample) User Interaction Design				
CCS-1 (Sample) Chatbot Development				
CCS-7 Schema Design				
CCS-8 DB Connection				
What needs to be done?				

Today Weeks Months Quarters 1

Jira

## Select a template to get started

You can always change this later. Selecting a template won't limit what you can do.

Other

**Scrum**  
Plan, prioritize, and schedule sprints using scrum framework

**Kanban**  
Visualize work and maximize efficiency with a kanban board

**Project management**  
Manage, track, and assign tasks to streamline project workflows

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### Conclusion:

This experiment provided an overview of Agile methodology and how Jira is used for project and test case management. Jira enhances Agile practices by improving workflow efficiency, collaboration, and test case execution tracking, making it a valuable tool in modern software development.