**Project Planning & Management**

**1. Project Proposal**

**Overview**

This project aims to develop an **Automated Testing Framework** for a web application to enhance testing efficiency, improve software quality, and reduce manual effort. The framework will provide a structured and reusable testing solution, ensuring comprehensive test coverage.

**Objectives**

* Develop a robust and scalable test automation framework.
* Increase testing efficiency and reduce manual testing time.
* Ensure high-quality software by identifying defects early.
* Enhance test reporting and execution tracking.

**Scope**

* Web application functional and regression testing.
* Integration with test management and CI/CD tools.
* Execution of automated test scripts across multiple browsers.
* Detailed test reporting and logging mechanisms.

**2. Project Plan**

**Timeline (Gantt Chart)**

| **Phase** | **Tasks** | **Duration** |
| --- | --- | --- |
| Planning | Requirement gathering, tool selection | 2 weeks |
| Framework Design | Define architecture, POM implementation | 1 week |
| Development | Script development, integration |  |
| Testing & Debugging | Validate test cases, debug framework | 2 weeks |
| Deployment | CI/CD integration, reporting setup | 1 week |
| Maintenance | Enhancements, bug fixes | Ongoing |

**Milestones & Deliverables**

* **Milestone 1:** Project Requirements & Tool Selection (2/24/2025)
* **Milestone 2:** Framework Architecture & Design (4/10/2025)
* **Milestone 3:** Core Test Scripts & Execution Setup (4/10/2025)
* **Milestone 4:** CI/CD Integration & Test Reporting (4/10/2025)
* **Milestone 5:** Final Testing & Documentation (4/11/2025)

**Resource Allocation**

* **Team member 1:** Oversees progress, risk management
* **Team member 3:** Develop and maintain scripts
* **Team member 2:** Provide application insights and support
* **Team member 4:** CI/CD integration
* **Team member 1:** Define requirements, report testing needs

**3. Task Assignment & Roles**

| **Team Member** | **Role & Responsibilities** |
| --- | --- |
| **Team member 3** | Define project goals, monitor progress, manage risks |
| **Team member 2** | Design, develop, and execute automated test scripts |
| **Team member 1** | Support test automation by providing necessary APIs, mock data |
| **Team member 4, 1** | CI/CD integration, test execution automation |
| **Team member 3, 2** | Gather requirements, ensure test coverage aligns with business needs |

**4. Risk Assessment & Mitigation Plan**

| **Risk Factor** | **Description** | **Mitigation Strategy** |
| --- | --- | --- |
| Tool Compatibility | Tools may not integrate well | Conduct PoC before tool selection |
| Flaky Tests | Tests may produce inconsistent results | Implement retry logic, use explicit waits |
| High Maintenance Cost | Frequent application updates break tests | Use modular & data-driven approach |
| CI/CD Failures | Automated tests may fail in pipeline | Implement test stability checks & alerts |
| Skill Gaps | Team may lack expertise in automation | Conduct training sessions, use documentation |

**5. KPIs (Key Performance Indicators)**

| **KPI** | **Description** |
| --- | --- |
| Test Execution Time | Time taken to run automated test suite |
| Test Coverage | Percentage of test cases automated |
| Defect Detection Rate | Number of defects identified by automation |
| System Uptime | Availability of the test framework |
| CI/CD Integration Success Rate | Number of successful test executions in the pipeline |
| User Adoption Rate | Frequency of framework use by the team |

This project plan ensures a structured and systematic approach to building a robust **Automated Testing Framework for a Web Application** with a focus on efficiency, quality, and scalability.