Project Planning Phase

Date: 02 November 2025

Team ID: NM2025TMID02609

Project Title: Optimizing User Group and Role Management with Access Control and Workflows
Maximum Marks: 5 marks

Project Planning

---

1. Objective of the Project Planning Phase

The project aims to design and implement an intelligent and efficient **User Group and Role Management System** that integrates **Access Control** and **Workflow Automation** to streamline user operations, enhance data security, and minimize administrative overhead. The planning phase focuses on defining clear goals, deliverables, sprints, timelines, and measurable outcomes for each stage of development.

---

2. Scope of Work

This system will:

- Simplify creation and management of users, groups, and roles.
- Automate workflow approvals for access requests and modifications.
- Implement role-based access control (RBAC) to prevent unauthorized operations.
- Provide audit trails and logging for transparency and compliance.
- Optimize administrative processes using efficient workflow logic.

---

3. Methodology

The project follows the **Agile Scrum methodology**, dividing development into sprints. Each sprint delivers a functional component that can be tested and reviewed before proceeding to the next. This ensures flexibility, iterative improvement, and efficient time management.

---

4. Sprint Planning and Deliverables

Sprint No.	Sprint Duration	Deliverables / Tasks	Outcome
Sprint 1	2days	Requirement gathering, system architecture design, database schema creation	Finalized requirements and ER diagram
Sprint 2	3 days	Module for User and Group Management	Functioning module to create, update, and delete users/groups
Sprint 3	2 days	Role-based Access Control (RBAC) module	Implementation of secure access control and permission hierarchy
Sprint 4	4 days	Workflow Automation for user/role requests	Automated workflows with approval and rejection logic
Sprint 5	3 days	Testing, Validation, and Debugging	Fully tested system with QA documentation
Sprint 6	1 day	Deployment & Documentation	Final version deployed and project report submitted

---

5. Resources Required

Hardware:

- Laptop/PC with minimum 8GB RAM, i5 processor, and stable internet connection.

Software and Tools:

- **Backend:** Python (Flask/Django)
- **Frontend:** React.js / HTML / CSS
- **Database:** MySQL / PostgreSQL
- **Version Control:** GitHub
- **Project Management:** Jira or Trello

---

6. Risk Analysis and Mitigation

Potential Risk	Impact	Mitigation Strategy
Delay in sprint completion	Medium	Strict sprint review and daily stand-ups
Integration issues between modules	High	Continuous integration and modular testing
Workflow errors or access violations	High	Implement audit logs and test cases early
Change in requirements	Medium	Agile adaptation and sprint re-prioritization

---

7. Expected Outcomes

- Optimized and secure management of user groups and roles.
- Streamlined workflow automation reducing manual overhead.
- Enhanced accountability through detailed access logs.
- A scalable system suitable for enterprise-level integration.

---

8. Performance Metrics

Success will be measured based on:

- **Accuracy** of role-based permissions (≥ 95%)
- **Workflow efficiency improvement** (≥ 40% faster approval cycles)
- **Error reduction** in manual role handling (≥ 70%)
- **User satisfaction** (via test feedback ≥ 4/5 average rating)

---

9. Conclusion

This planning phase provides a structured roadmap for implementing a robust and scalable system for **User Group and Role Management with Access Control and Workflows**. The sprint-based execution ensures continuous improvement, timely completion, and delivery of a secure, efficient solution aligned with the goals.