IDEATION PHASE

DATE	**27 JUNE 2025**
TEAM ID	**E605C7252BF47B7AAFF475068FD57085**
PROJECT NAME	**Optimizing User, Group, and Role Management with Access Control and Workflows**
MAXIMUM MARK	**4 Marks**

2. Identify Key Users & Roles

Alice: Project Manager (PM)

- **Access Designation:** Administrator / Owner
- **Primary Function:** Project oversight, planning, task creation, and final task approval.
- **Key Action:** Defines and approves the work.

Bob: Team Member (TM)

- **Access Designation:** Standard User / Contributor
- **Primary Function:** Task execution, status reporting, and logging time/notes.
- **Key Action:** Executes the work and updates its status.

3. Core Functional Requirements:

Area of Focus	Core System Capability (Functional Requirement)	Key Benefit
Accountability	Mandatory Task Assignment	Ensures every task has a clear owner (Alice or Bob).
Workflow	Defined Status Transitions	Standardizes the task lifecycle (e.g., To Do $\rightarrow$ In Review $\rightarrow$ Done).
Clarity	Role-Based Task Editing	Prevents Bob from modifying critical details (like Due Date) and focuses him on execution.

Tracking	Activity History & Reporting	Provides Alice with full traceability and real-time project visibility.
Control	PM Task Approval Gate	Requires Alice's final sign-off before a task is officially closed.

4. Data Model (Proposed Tables)

Column Name	Data Type	Description	Key / Constraint
UserID	Integer	Unique identifier for each user.	Primary Key
UserName	Text	Full name of the user (Alice/Bob).	Unique
UserRole	Text	The user's role: 'PM' (Project Manager) or 'TM' (Team Member).	Required

5. Automation Opportunities:

a) **Workflow and Status Enforcement**

- **Initial Status:** Automatically set all new tasks to the **"To Do"** status.
- **Time Tracking:** Automatically update the `LastUpdated` timestamp whenever a task status is changed.

b)Accountability and Notification

- **Assignment Notification**: Automatically send an alert/notification to the Assignee (Bob) upon task assignment with the Due Date.
- **Roadblock Escalation**: Immediately notify Alice (PM) when a task status is changed to "Blocked" by Bob.

c)Data Integrity and Access

- **Mandatory Fields:** Automatically enforce that **Assignee** and **Due Date** fields are populated before a task can be saved.
- **Access Control:** Automatically restrict **Bob (TM)** from editing sensitive fields like the Due Date or deleting a task.

6. Visualization Ideas:

- Kanban Board (Workflow Status)
- project Health Dashboard (Alice - PM View)
- Task Priority View (Bob - TM View)
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7. Access Control:

- Alice (PM) maintains Administrative Control over the system structure, core task fields (Due Date), and the final authority on deletion and approval.

- Bob (TM) maintains Contributor Control, allowing him to fully execute his assigned work (update status, comment, log time) but preventing him from altering the project's foundational data or workflow.

8. Possible Extensions:

a)Time Tracking Integration:

- Add a dedicated feature for Bob to log hours worked per task.
- Benefit: Enables Budget and Resource Utilization reporting (Planned vs. Actual Time).

b) Task Dependencies:

- Allow Alice to link tasks (e.g., Task B cannot start until Task A is Done).
- Benefit: Enables Critical Path Management and automated risk flagging for schedule delays.

9. Success Metrics:

- **On-Time Completion Rate:** The percentage of tasks finished by their Due Date. The target is 90% or higher to show accurate planning and execution.

- **Overdue Task Count:** The real-time number of tasks that are past their Due Date but still active. The target is to keep this count below or equal to 2 at all times.

- **Status Update Frequency:** The average number of days a task remains unchanged in a non-final status ('To Do,' 'In Progress'). The goal is 3 days or less to ensure data freshness and continuous activity.
