**System PRD Document**

**1. Purpose**

The Training Management System is designed to streamline the organization, delivery, tracking, and evaluation of training programs within an organization. It allows administrators to manage users, rooms, training sessions, courses, enrollments, attendance, materials, feedback, and certificates with optimized performance and automated data integrity through triggers.

**2. Scope**

The system will provide:

* Role-based access and user management
* Creation and management of trainings, courses, and sessions
* Enrollment handling with automatic capacity checks
* Real-time status tracking for trainings and sessions
* Material uploads and feedback collection
* Attendance tracking and certificate issuance

**3. Stakeholders**

* System Admins – Manage users, rooms, trainings, and system configurations
* Trainers – Conduct sessions, manage course content and materials
* Trainees – Enroll in trainings, attend sessions, and provide feedback

### **4. Functional Requirements**

| Feature | Description |
| --- | --- |
| **User Management** | CRUD operations for users with roles (Admin, Trainer, Trainee). |
| **Room Management** | Create and manage rooms with capacity and availability status. |
| **Training Management** | Create trainings, assign rooms, set dates and statuses. |
| **Course Management** | Trainers can create courses and link them to trainings. |
| **Training-Course Mapping** | Define number of sessions, current/completed/canceled sessions, auto-status updates. |
| **Session Management** | Manage daily sessions per training course, with date/time and status validation. |
| **Material Uploads** | Trainers can upload PDF or DOC files per session. |
| **Enrollment Management** | Trainees can enroll in available trainings, auto-check for capacity limit. |
| **Feedback Collection** | Trainees submit session feedback z(one per session). |
| **Attendance Tracking** | Track attendance status (Present, Absent, Late) per session. |
| **Certificate Issuance** | Generate and store **Issuance** |

### **5. Non-Functional Requirements**

| Category | Description |
| --- | --- |
| **Performance** | Indexed queries for high-performance filtering and joins. |
| **Security** | Passwords stored securely, role-based access enforcement. |
| **Scalability** | Supports hundreds of trainings and thousands of enrollments. |
| **Availability** | Training availability updated dynamically via triggers. |
| **Maintainability** | Optimized database structure with constraints and clear naming conventions. |

### **6. Database Structure Overview**

#### 6.1 Core Tables

* **Users** – User info with role, photo, gender, and indexing for name/role lookups.
* **Rooms** – Rooms with capacity and availability for training scheduling.
* **Trainings** – Training events mapped to rooms and dates.
* **Courses** – Content units created by trainers.
* **Training\_Courses** – Maps training with courses and manages session count/status.
* **Sessions** – Each course session with date/time and dynamic status.
* **Materials** – Training documents (PDF, DOC) attached to sessions.
* **Enrollments** – Tracks which trainees joined which training.
* **Feedbacks** – Trainee ratings and comments per session.
* **Certificates** – Issued for completed trainings.
* **Attendance** – Tracks trainee presence/absence/late per session.

#### 6.2 Triggers

* **Enrollment Capacity Trigger** – Automatically updates training status to "UNAVAILABLE" when max capacity is reached.
* **Training Course Session Trigger** – Updates training course status (COMING, LIVE, COMPLETED, CANCELLED) based on session counts.
* **Session Status Trigger** (partial in input) – Intended to update training course progress based on individual session completion.
* **8. User Roles and Permissions**

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| --- | --- |
| | **Role** | **Capabilities** | | --- | --- | | **Admin** | Full access to manage users, rooms, trainings, and view analytics. | | **Trainer** | Create/manage courses, sessions, materials, and mark attendance. | | **Trainee** | View trainings, enroll, attend sessions, give feedback, and download certificates. | | | **Role** | **Capabilities** | | --- | --- | | **Admin** | Full access to manage users, rooms, trainings, and view analytics. | | **Trainer** | Create/manage courses, sessions, materials, and mark attendance. | | Trainee | View trainings, enroll, attend sessions, give feedback, and download certificates. | |

### ****9. Constraints****

* Cannot enroll trainees in full-capacity trainings.
* Completed and cancelled sessions must not exceed total sessions.
* Deleted or cancelled trainings/sessions should cascade related entities appropriately.
* All date and time fields must comply with logical validation (e.g., end > start).

### ****10. Future Enhancements (Optional)****

* Notification system for upcoming sessions.
* Trainer performance analytics based on feedback.
* Integration with external LMS or calendar systems.
* Mobile app interface for trainees.