**Project Title:** DATABASE CREATION

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CREATE DATABASE usermanagment;

User usermanagment;

CREATE TABLE User (

UserID INT PRIMARY KEY AUTO\_INCREMENT,

Username VARCHAR(50) UNIQUE NOT NULL,

PasswordHash VARCHAR(255) NOT NULL,

Role ENUM('SuperAdmin', 'Admin', 'Coordinator', 'Evaluator', 'Viewer') NOT NULL,

Email VARCHAR(100) UNIQUE NOT NULL,

CreatedAt TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

INDEX idx\_username (Username),

INDEX idx\_email (Email),

INDEX idx\_role (Role)

);

-- EntityA: Student Management

CREATE TABLE EntityA (

EntityAID INT PRIMARY KEY AUTO\_INCREMENT,

Name VARCHAR(100) NOT NULL,

Description TEXT,

Attribute1 VARCHAR(100) NOT NULL,

Attribute2 VARCHAR(50),

CreatedAt TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

CreatedBy INT,

FOREIGN KEY (CreatedBy) REFERENCES User(UserID) ON UPDATE CASCADE ON DELETE SET NULL,

INDEX idx\_name (Name),

INDEX idx\_attribute1 (Attribute1)

);

-- EntityC: Scholarship Programs (Created before EntityB due to foreign key dependency)

CREATE TABLE EntityC (

EntityCID INT PRIMARY KEY AUTO\_INCREMENT,

Name VARCHAR(100) NOT NULL,

Type ENUM('Merit-based', 'Need-based', 'Research', 'Athletic', 'Special', 'External') NOT NULL,

StartDate DATE NOT NULL,

EndDate DATE NOT NULL,

Status ENUM('Active', 'Inactive', 'Closed', 'Suspended', 'Draft') DEFAULT 'Draft',

CreatedBy INT,

FOREIGN KEY (CreatedBy) REFERENCES User(UserID) ON UPDATE CASCADE ON DELETE SET NULL,

CONSTRAINT chk\_date\_order CHECK (EndDate >= StartDate),

INDEX idx\_name (Name),

INDEX idx\_status (Status),

INDEX idx\_dates (StartDate, EndDate)

);

-- EntityB: Application Management

CREATE TABLE EntityB (

EntityBID INT PRIMARY KEY AUTO\_INCREMENT,

EntityAID INT NOT NULL,

EntityCID INT NOT NULL,

Title VARCHAR(150) NOT NULL,

Date DATE NOT NULL,

Status ENUM('Draft', 'Submitted', 'Under Review', 'Approved', 'Rejected', 'Withdrawn') DEFAULT 'Draft',

Value DECIMAL(10,2),

Notes TEXT,

ProcessedBy INT,

FOREIGN KEY (EntityAID) REFERENCES EntityA(EntityAID) ON UPDATE CASCADE ON DELETE RESTRICT,

FOREIGN KEY (EntityCID) REFERENCES EntityC(EntityCID) ON UPDATE CASCADE ON DELETE RESTRICT,

FOREIGN KEY (ProcessedBy) REFERENCES User(UserID) ON UPDATE CASCADE ON DELETE SET NULL,

UNIQUE KEY unique\_student\_scholarship (EntityAID, EntityCID),

INDEX idx\_status (Status),

INDEX idx\_date (Date)

);

-- EntityD: Financial Transactions

CREATE TABLE EntityD (

EntityDID INT PRIMARY KEY AUTO\_INCREMENT,

EntityBID INT NOT NULL,

ReferenceNo VARCHAR(30) UNIQUE NOT NULL,

Amount DECIMAL(10,2) NOT NULL CHECK (Amount > 0),

Date DATE NOT NULL,

Method ENUM('Direct Deposit', 'Check', 'Wire Transfer', 'Cash', 'University Account') NOT NULL,

Status ENUM('Pending', 'Processing', 'Completed', 'Failed', 'Cancelled', 'Refunded') DEFAULT 'Pending',

AuthorizedBy INT,

FOREIGN KEY (EntityBID) REFERENCES EntityB(EntityBID) ON UPDATE CASCADE ON DELETE RESTRICT,

FOREIGN KEY (AuthorizedBy) REFERENCES User(UserID) ON UPDATE CASCADE ON DELETE SET NULL,

INDEX idx\_reference (ReferenceNo),

INDEX idx\_status (Status),

INDEX idx\_date (Date)

);

-- EntityE: Resource Management

CREATE TABLE EntityE (

EntityEID INT PRIMARY KEY AUTO\_INCREMENT,

EntityCID INT,

Category ENUM('Document', 'Form', 'Template', 'Guide', 'Report', 'Media') NOT NULL,

Detail TEXT NOT NULL,

Owner VARCHAR(100) NOT NULL,

Location VARCHAR(255) NOT NULL,

CreatedAt TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

OwnerID INT,

FOREIGN KEY (EntityCID) REFERENCES EntityC(EntityCID) ON UPDATE CASCADE ON DELETE SET NULL,

FOREIGN KEY (OwnerID) REFERENCES User(UserID) ON UPDATE CASCADE ON DELETE SET NULL,

INDEX idx\_category (Category),

INDEX idx\_owner (Owner)

);