

1. Database Schema

Users Table

Field	Type	Constraints
id	INT	Primary Key, Auto Increment
name	VARCHAR(100)	NOT NULL
email	VARCHAR(100)	NOT NULL, UNIQUE
role	ENUM	Values: lecturer , student
registration_number	VARCHAR(50)	UNIQUE (for students)
pin	VARCHAR(255)	NOT NULL (hashed)
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP

Quizzes Table

Field	Type	Constraints
id	INT	Primary Key, Auto Increment
title	VARCHAR(255)	NOT NULL
description	TEXT	
lecturer_id	INT	Foreign Key -> Users(id)
duration_minutes	INT	NOT NULL
start_time	DATETIME	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP

Questions Table

Field	Type	Constraints
id	INT	Primary Key, Auto Increment
quiz_id	INT	Foreign Key -> Quizzes(id)
question_text	TEXT	NOT NULL
question_type	ENUM	Values: mcq , text , boolean
options	JSON	Nullable (for mcq questions)
correct_answer	JSON	NOT NULL

Assignments Table

Field	Type	Constraints
id	INT	Primary Key, Auto Increment
quiz_id	INT	Foreign Key -> Quizzes(id)
student_id	INT	Foreign Key -> Users(id)
status	ENUM	Values: assigned , completed
score	FLOAT	Nullable
completed_at	TIMESTAMP	Nullable

Attempts Table

Field	Type	Constraints
id	INT	Primary Key, Auto Increment
assignment_id	INT	Foreign Key -> Assignments(id)
answers	JSON	NOT NULL
score	FLOAT	
submitted_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP