



Data Structure Design

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users

Teacher Information Table

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		User ID
username	VARCHAR(50)			Login username
password_hash	TEXT			Hashed password
name	VARCHAR(100)			Teacher name
email	VARCHAR(100)			Email address
phone	VARCHAR(20)			Contact phone number
avatar_url	TEXT			Profile image URL
created_at	DATETIME			Account creation time

students

Student Information Table

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		Student ID
name	VARCHAR(100)			Student name
subject	VARCHAR(100)			Subject studied
contact	VARCHAR(100)			Contact information
total_hours	INTEGER			Total purchased lesson hours
used_hours	INTEGER			Used lesson hours
notes	TEXT			Notes
created_at	DATETIME			Creation time

tuition_usage

Tuition Hour Usage Records

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		Record ID
student_id	INTEGER		students.id	Related student
class_id	INTEGER		classes.id	Related class session
hours_used	FLOAT			Hours deducted
used_at	DATETIME			Usage time

progress

Student Lesson Progress Table

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		Record ID

Field Name	Type	Primary Key	Foreign Key	Description
student_id	INTEGER		students.id	Student ID
lesson_id	INTEGER		lessons.id	Lesson ID
is_completed	BOOLEAN			Completion status
updated_at	DATETIME			Last updated time

Courses

Course Template Table

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		Course ID
name	VARCHAR(100)			Course name
description	TEXT			Course description
created_at	DATETIME			Creation time

classes

Scheduled Class Sessions (Calendar Table)

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		Class session ID
student_id	INTEGER		students.id	Student attending
course_id	INTEGER		courses.id	Related course
lesson_id	INTEGER		lessons.id	Specific lesson
date	DATE			Class date

class_records

Class Records and Feedback Table

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		Record ID
class_id	INTEGER		classes.id	Related class session
start_time	DATETIME			Start time
end_time	DATETIME			End time
duration	FLOAT			Duration (hours)
feedback	TEXT			Teacher feedback

attendance

Attendance Records

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		Attendance record ID
class_id	INTEGER		classes.id	Class session ID
student_id	INTEGER		students.id	Student ID
status	VARCHAR(10)			Attendance status (present / absent / late)

lessons

Lesson (Syllabus Unit) Table

Field Name	Type	Primary Key	Foreign Key	Description
id	INTEGER	1		Lesson ID
course_id	INTEGER		courses.id	Related course
lesson_num	INTEGER			Lesson sequence number
title	VARCHAR(200)			Lesson title

Field Name	Type	Primary Key	Foreign Key	Description
goal	TEXT			Teaching objective
created_at	DATETIME			Creation time