

School Management System - Data Dictionary

Table: users

Field Name	Type	Constraints	Description
id	UUID	PK	Unique system-wide ID
username	TEXT	UNIQUE, nullable	For teachers/admins
matric_no	TEXT	UNIQUE, nullable	For students
password_hash	TEXT	NOT NULL	Encrypted password
role	TEXT	CHECK ('student','teacher','admin')	Defines account role
created_at	TIMESTAMP	DEFAULT now()	Time of account creation

Table: students

Field Name	Type	Constraints	Description
id	UUID	PK, FK -> users(id)	Linked to login account
full_name	TEXT	NOT NULL	Student name
dob	DATE	NOT NULL	Date of birth
pob	TEXT	NOT NULL	Place of birth
gender	TEXT	ENUM	Gender
program	TEXT	NOT NULL	Program of study
major	TEXT		Optional specialization
phone_number	TEXT		Student's contact number
parent_email	TEXT		Parent/Guardian email
parent_phone	TEXT		Parent/Guardian phone number

Table: teachers

Field Name	Type	Constraints	Description
id	UUID	PK, FK -> users(id)	Linked to login account
full_name	TEXT	NOT NULL	Full name
email	TEXT	UNIQUE	Email address
phone_number	TEXT		Phone number
department	TEXT		Department name

Table: courses

Field Name	Type	Constraints	Description
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id	UUID	PK	Unique course ID
code	TEXT	UNIQUE, NOT NULL	Course code
title	TEXT	NOT NULL	Course title
credit	INT	NOT NULL	Credit value
level	TEXT		Level (100, 200, etc.)
semester	TEXT		Semester

Table: prerequisites

Field Name	Type	Constraints	Description
id	UUID	PK	Unique ID
course_id	UUID	FK -> courses(id)	Main course
prerequisite_id	UUID	FK -> courses(id)	Prerequisite course

Table: course_offerings

Field Name	Type	Constraints	Description
id	UUID	PK	Unique offering
course_id	UUID	FK -> courses(id)	Course ID
teacher_id	UUID	FK -> teachers(id)	Assigned teacher
year	INT	NOT NULL	Academic year
semester	TEXT	NOT NULL	Semester

Table: registrations

Field Name	Type	Constraints	Description
id	UUID	PK	Unique registration ID
student_id	UUID	FK -> students(id)	Student
course_id	UUID	FK -> courses(id)	Course
year	INT	NOT NULL	Academic year
semester	TEXT	NOT NULL	Semester
status	TEXT	DEFAULT 'active'	Registration status

Table: timetables

Field Name	Type	Constraints	Description
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id	UUID	PK	Unique timetable entry
course_id	UUID	FK -> courses(id)	Course
day_of_week	TEXT	NOT NULL	Day of the week
start_time	TIME	NOT NULL	Start time
end_time	TIME	NOT NULL	End time
location	TEXT		Classroom or venue

Table: tracking_sheets

Field Name	Type	Constraints	Description
id	UUID	PK	Unique ID
department	TEXT		Department name
program	TEXT		Program name
semester	TEXT		Semester
courses	JSONB		List of course IDs

Table: notifications

Field Name	Type	Constraints	Description
id	UUID	PK	Unique notification
sender_id	UUID	FK -> users(id)	Sender user
receiver_role	TEXT		student, teacher, or all
message	TEXT		Notification body
created_at	TIMESTAMP	DEFAULT now()	Time sent

Table: results

Field Name	Type	Constraints	Description
id	UUID	PK	Unique result record
student_id	UUID	FK -> students(id)	Student
course_id	UUID	FK -> courses(id)	Course
assignment	INT		Assignment mark
project	INT		Project mark
exam	INT		Exam mark
attendance	INT		Attendance mark

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final_grade	INT		Final calculated score
created_at	TIMESTAMP		Timestamp

Table: ca_scores

Field Name	Type	Constraints	Description
id	UUID	PK	Unique CA entry
student_id	UUID	FK -> students(id)	Student
course_id	UUID	FK -> courses(id)	Course
assessment_no	INT		CA number (1,2,3...)
score	INT		CA score
teacher_id	UUID	FK -> teachers(id)	Entered by
created_at	TIMESTAMP		Time entered

Table: attendance_sheets

Field Name	Type	Constraints	Description
id	UUID	PK	Unique attendance sheet
course_id	UUID	FK -> courses(id)	Course
semester	TEXT		Semester
year	INT		Academic year
students_list	JSONB		List of student IDs

Table: groups

Field Name	Type	Constraints	Description
id	UUID	PK	Group ID
course_id	UUID	FK -> courses(id)	Course
student_id	UUID	FK -> students(id)	Student
semester	TEXT		Semester

Table: transcripts

Field Name	Type	Constraints	Description
id	UUID	PK	Transcript ID
student_id	UUID	FK -> students(id)	Student

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data	JSONB		Transcript content
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