***0NF***

1. Users (**ID**, username, email, password, role(id, name))
2. Students (**ID**, name, status, BOD, admission-date, gender, phone, user-id, assignmentID, feeID, feeDate, feeAmount, classID, parent**ID**, parentName, parentRelationType, parentAddress, parentPhone, user-id)
3. Books (bookID, bookname, bookAuthor)
4. Loans (loanID, loan-date, return-date, studentID, bookID)
5. TeachingStaff (**ID**, salary, name, BOD, specialization, address, gender, hire-date, phone, user-id, supervisorID)
6. Subjects (ID, name, Code, teachingStaffID)
7. Classes\_Attendance (classID, classname, teachingStaffID, attendanceID, attendanceDate, attendanceStatus, subjectID, studentID)
8. Assignment (ID, due-date, grade, teachingStaffID, SubjectID)
9. Exam (ID, date, grade, studentID, subjectID)

***1NF (Remove Composite Values, Multivalued, Repeating Group)***

1. Users (**ID**, username, email, password, roleID, roleName)
2. Students (**ID**, name, status, BOD, admission-date, gender, user-id, classID)
3. StudentAssignments (studentID, assignmentID)
4. StudentsFee (studentID, feeID, feeDate, feeAmount)
5. StudentParents (studentID, parentID, parentName, parentRelationType, parentAddress, userID)
6. StudentsPhones (studentID, studentPhone)
7. Books (bookID, bookname, bookAuthor)
8. Loans (loanID, loan-date, return-date, studentID, bookID)
9. ParentPhones (parentID, parentPhone)
10. TeachingStaff (**ID**, salary, name, BOD, specialization, address, gender, hire-date, user-id, supervisorID)
11. TeachingStaffPhone (teachingStaffID, phone)
12. Subjects (ID, name, Code, teachingStaffID)
13. Classes\_Attendance (classID, attendanceID, classname, teachingStaffID, attendanceDate, attendanceStatus, subjectID, studentID)
14. Assignment (ID, due-date, grade, teachingStaffID, SubjectID)
15. Exam (ID, date, grade, studentID, subjectID)

***2NF (Remove Partial Dependency)***

1. Users (**ID**, username, email, password, roleID, roleName)
2. Students (**ID**, name, status, BOD, admission-date, gender, user-id, classID)
3. StudentAssignments (studentID, assignmentID)
4. StudentsFee (studentID, feeID, feeDate, feeAmount)
5. StudentParents (studentID, parentID)
6. Parents (parentID, parentName, parentRelationType, parentAddress, userID)
7. ParentPhones (parentID, parentPhone)
8. Books (bookID, bookname, bookAuthor)
9. Loans (loanID, loan-date, return-date, studentID, bookID)
10. StudentsPhones (studentID, studentPhone)
11. TeachingStaff (**ID**, salary, name, BOD, specialization, address, gender, hire-date, user-id, supervisorID)
12. TeachingStaffPhone (teachingStaffID, phone)
13. Subjects (ID, name, Code, teachingStaffID)
14. Classes\_Attendance (classID, attendanceID, teachingStaffID, subjectID, studentID)
15. Classes (classID, classname)
16. Attendance (attendanceID, attendanceDate, attendanceStatus)
17. Assignment (ID, due-date, grade, teachingStaffID, SubjectID)
18. Exam (ID, date, grade, studentID, subjectID)

***3NF (Remove Transitive Dependency)***

1. Users (ID, username, email, password, roleID)
2. Roles (roleID, roleName)
3. Students (ID, name, status, BOD, admission-date, gender, user-id, feeID, classID)
4. StudentAssignments (studentID, assignmentID)
5. Loans (loanID, loan-date, return-date, studentID, bookID)
6. StudentsParents (studentID, parentID)
7. Parents (parentID, parentName, parentRelationType, parentAddress, userID)
8. Books (bookID, bookname, bookAuthor)
9. Fees (feeID, feeDate, feeAmount)
10. StudentsPhones (studentID, studentPhone)
11. ParentPhones (parentID, parentPhone)
12. TeachingStaff (ID, salary, name, BOD, specialization, address, gender, hire-date, user-id, supervisorID)
13. TeachingStaffPhone (teachingStaffID, phone)
14. Subjects (ID, name, Code, teachingStaffID)
15. Classes\_Attendance (classID, attendanceID, teachingStaffID, subjectID, studentID)
16. Classes (classID, className)
17. Attendance (attendanceID, attendanceDate, attendanceStatus)
18. Assignment (ID, due-date, grade, teachingStaffID, SubjectID)
19. Exam (ID, date, grade, studentID, subjectID)

**SQL Code**

create database school\_management\_system;

create table users(

ID varchar(10) PRIMARY KEY,

username varchar(50) not null,

email varchar(100) not null,

password varchar(60) not null

);

create table roles(

roleID varchar(10) PRIMARY KEY,

roleName varchar(50) not null

);

alter table users

add roleID varchar(10) not null;

ALTER TABLE users ADD CONSTRAINT pk FOREIGN KEY (roleID) REFERENCES roles(roleID) on DELETE CASCADE on UPDATE CASCADE;

CREATE TABLE students (

ID varchar(10) PRIMARY KEY,

name varchar(50) not null,

BOD date not null,

admission\_date date not null,

gender varchar(10) not null,

userID varchar(10),

FOREIGN KEY (userID) REFERENCES users(ID) on DELETE CASCADE on UPDATE CASCADE

);

alter table students

add student\_status varchar(20) not null;

create table fees(

ID varchar(10) PRIMARY KEY,

feeDate date not null,

feeAmount varchar(20) not null

);

create table classes(

ID varchar(10) PRIMARY KEY,

className varchar(50) not null

);

alter table students

add feeID varchar(10), add classID varchar(10);

ALTER TABLE students

add FOREIGN KEY (feeID) REFERENCES fees(ID) on UPDATE CASCADE on DELETE CASCADE;

ALTER TABLE students

add FOREIGN KEY (classID) REFERENCES classes(ID) on UPDATE CASCADE on DELETE CASCADE;

create table parents(

ID varchar(10) PRIMARY KEY,

name varchar(50) not null,

relation\_type varchar(20) not null,

address varchar(50) not null

);

create table books(

ID varchar(10) PRIMARY KEY,

name varchar(60) not null,

author varchar(50) not null

);

create table loans(

loanID varchar(10) PRIMARY KEY,

loanDate date not null,

returnDate date not null,

studentID varchar(10),

bookID varchar(10),

FOREIGN KEY (studentID) REFERENCES students(ID) on DELETE CASCADE on UPDATE CASCADE,

FOREIGN KEY (bookID) REFERENCES books(ID) on DELETE CASCADE on UPDATE CASCADE

);

create table studentParents(

studentID varchar(10),

ParentID varchar(10),

FOREIGN KEY (studentID) REFERENCES students(ID) ON DELETE CASCADE on UPDATE CASCADE,

FOREIGN KEY (parentID) REFERENCES parents(ID) ON DELETE CASCADE on UPDATE CASCADE

);

create table teachingStaff(

ID varchar(10) PRIMARY KEY,

name varchar(50) not null,

specialization varchar(50) not null,

address varchar(60) not null,

BOD date not null,

hire\_date date not null,

gender varchar(10) not null,

salary varchar(20) not null,

userID varchar(10),

supervisorID varchar(10),

FOREIGN KEY (userID) REFERENCES users(ID) on DELETE CASCADE on UPDATE CASCADE,

FOREIGN KEY (supervisorID) REFERENCES teachingStaff(ID) on DELETE CASCADE on UPDATE CASCADE

);

create table studentPhones(

student\_ID varchar(10) not null,

phone\_number varchar(20) not null,

PRIMARY KEY (student\_ID, phone\_number),

FOREIGN KEY (student\_ID) REFERENCES students(ID) ON DELETE CASCADE ON UPDATE CASCADE

);

create table parentPhones(

parent\_ID varchar(10) not null,

phone\_number varchar(20) not null,

PRIMARY KEY(parent\_ID, phone\_number),

FOREIGN KEY (parent\_ID) REFERENCES parents(ID) ON DELETE CASCADE ON UPDATE CASCADE

);

create table teachingStaffPhones(

ID varchar(10),

phone\_number varchar(20) not null,

FOREIGN KEY (ID) REFERENCES teachingstaff(ID) on UPDATE CASCADE on DELETE CASCADE

);

CREATE TABLE subjects (

ID varchar(10) PRIMARY KEY,

subject\_name varchar(30) not null,

subject\_code varchar(10) not null,

teachingstaff\_ID varchar(10),

FOREIGN KEY (teachingstaff\_ID) REFERENCES teachingstaff(ID) on DELETE CASCADE on UPDATE CASCADE

);

create table attendance(

ID varchar(10) PRIMARY KEY,

attendance\_date date not null,

attendance\_status varchar(20) not null

);

create table exam (

ID varchar(10) PRIMARY KEY,

exam\_date date not null,

grade varchar(20) not null,

studentID varchar(10),

subjectID varchar(10),

FOREIGN KEY (studentID) REFERENCES students(ID) on UPDATE CASCADE on DELETE CASCADE,

FOREIGN KEY (ID) REFERENCES subjects(ID) on UPDATE CASCADE on DELETE CASCADE

);

create table assignments (

ID varchar(10) PRIMARY KEY,

due\_date date not null,

grade varchar(20) not null,

teachingstaff\_ID varchar(10),

subject\_ID varchar(10),

FOREIGN KEY (teachingstaff\_ID) REFERENCES teachingstaff(ID) on UPDATE CASCADE on DELETE CASCADE,

FOREIGN KEY (subject\_ID) REFERENCES subjects(ID) on UPDATE CASCADE on DELETE CASCADE

);

CREATE TABLE classAttendance (

classID VARCHAR(10),

attendanceID VARCHAR(10),

teachingstaff\_ID VARCHAR(10),

subjectID VARCHAR(10),

studentID VARCHAR(10),

FOREIGN KEY (attendanceID) REFERENCES attendance(ID) ON UPDATE CASCADE ON DELETE CASCADE,

FOREIGN KEY (classID) REFERENCES classes(ID) ON UPDATE CASCADE ON DELETE CASCADE,

FOREIGN KEY (teachingstaff\_ID) REFERENCES teachingstaff(ID) ON UPDATE CASCADE ON DELETE CASCADE,

FOREIGN KEY (subjectID) REFERENCES subjects(ID) ON UPDATE CASCADE ON DELETE CASCADE,

FOREIGN KEY (studentID) REFERENCES students(ID) ON UPDATE CASCADE ON DELETE CASCADE

);

create table studentAssignments(

studentID varchar(10),

assignmentID varchar(10),

FOREIGN KEY(studentID) REFERENCES students(ID) on UPDATE CASCADE on DELETE CASCADE,

FOREIGN KEY(assignmentID) REFERENCES assignments(ID) on UPDATE CASCADE on DELETE CASCADE

);

INSERT INTO Roles (roleID, roleName)

VALUES

('01', 'Student'), ('02', 'Teaching Staff'), ('03', 'Parent'

INSERT INTO Users (ID, username, email, password, roleID)

VALUES

('01', 'yousif\_adel', 'yousif.adel@example.com', 'password123', '02'),

('02', 'mariam\_salem', 'mariam.salem@example.com', 'password456', '01'),

('03', 'mohamed\_ali', 'mohamed.ali@example.com', 'password789', '02'),

('04', 'fatma\_ahmed', 'fatma.ahmed@example.com', 'password321', '02'),

('05', 'youssef\_hassan', 'youssef.hassan@example.com', 'password654', '02'),

('06', 'sarah\_mohamed', 'sarah.mohamed@example.com', 'password987', '03'),

('07', 'mahmoud\_omar', 'mahmoud.omar@example.com', 'password111', '02'),

('08', 'dina\_abdelaziz', 'dina.abdelaziz@example.com', 'password222', '01'),

('09', 'mostafa\_eldeeb', 'mostafa.eldeeb@example.com', 'password333', '03'),

('10', 'nour\_saad', 'nour.saad@example.com', 'password444', '01'),

('11', 'mona\_elsayed', 'mona.elsayed@example.com', 'password555', '03'),

('12', 'karim\_sherif', 'karim.sherif@example.com', 'password666', '02'),

('13', 'maha\_nabil', 'maha.nabil@example.com', 'password777', '01'),

('14', 'ahmed\_elsayed', 'ahmed.elsayed@example.com', 'password888', '02'),

('15', 'rana\_ali', 'rana.ali@example.com', 'password999', '01'),

('16', 'amr\_salah', 'amr.salah@example.com', 'password000', '03'),

('17', 'hassan\_elsayed', 'hassan.elsayed@example.com', 'password12345', '02'),

('18', 'layla\_amine', 'layla.amine@example.com', 'password54321', '01'),

('19', 'osama\_tarek', 'osama.tarek@example.com', 'password11111', '03'),

('20', 'shaimaa\_fawzy', 'shaimaa.fawzy@example.com', 'password22222', '02');

INSERT INTO Fees (ID, feeDate, feeAmount)

VALUES

('01', '2025-01-01', 1000.00),

('02', '2025-01-05', 1500.50),

('03', '2025-01-10', 1200.75),

('04', '2025-01-12', 1100.00),

('05', '2025-01-15', 900.25),

('06', '2025-01-18', 1300.80),

('07', '2025-01-20', 950.10),

('08', '2025-01-22', 1600.00),

('09', '2025-01-25', 1050.45),

('10', '2025-01-28', 1400.60),

('11', '2025-02-01', 1250.30),

('12', '2025-02-05', 1350.00),

('13', '2025-02-07', 1000.00),

('14', '2025-02-10', 1450.50),

('15', '2025-02-12', 1100.00),

('16', '2025-02-15', 1150.75),

('17', '2025-02-18', 1300.00),

('18', '2025-02-20', 900.00),

('19', '2025-02-22', 1400.80),

('20', '2025-02-25', 1200.00);

INSERT INTO Attendance (ID, attendance\_date, attendance\_status) VALUES ('01', '2025-01-01', 'Present'), ('02', '2025-01-02', 'Absent'), ('03', '2025-01-03', 'Present'), ('04', '2025-01-04', 'Absent'), ('05', '2025-01-05', 'Present'), ('06', '2025-01-06', 'Late'), ('07', '2025-01-07', 'Present'), ('08', '2025-01-08', 'Absent'), ('09', '2025-01-09', 'Present'), ('10', '2025-01-10', 'Late'), ('11', '2025-01-11', 'Present'), ('12', '2025-01-12', 'Absent'), ('13', '2025-01-13', 'Present'), ('14', '2025-01-14', 'Late'), ('15', '2025-01-15', 'Present'), ('16', '2025-01-16', 'Absent'), ('17', '2025-01-17', 'Present'), ('18', '2025-01-18', 'Absent'), ('19', '2025-01-19', 'Present'), ('20', '2025-01-20', 'Late');

INSERT INTO Parents (ID, name, relation\_type, address)

VALUES

(01, 'Sarah Mohamed', 'Mother', 'Cairo, Egypt'),

(02, 'Mostafa Eldeeb', 'Father', 'Cairo, Egypt'),

(03, 'Mona Elsayed', 'Mother', 'Cairo, Egypt'),

(04, 'Amr Salah', 'Father', 'Cairo, Egypt'),

(05, 'Osama Tarek', 'Father', 'Cairo, Egypt'),

(07, 'Hassan ElShamy', 'Father', 'Heliopolis, Cairo, Egypt'),

(08, 'Farida AlSayed', 'Mother', 'Maadi, Cairo, Egypt'),

(10, 'Samiha Mahmoud', 'Mother', 'Zamalek, Cairo, Egypt'),

(12, 'Tamer Ghanem', 'Father', 'Nasr City, Cairo, Egypt'),

(13, 'Laila Farouk', 'Mother', 'New Cairo, Cairo, Egypt'),

(14, 'Ahmed Saad', 'Father', '6th of October City, Cairo, Egypt'),

(15, 'Rania Nabil', 'Mother', 'Shubra, Cairo, Egypt');

INSERT INTO TeachingStaff (ID, name, specialization, address, BOD, hire\_date, gender, salary, userID, supervisorID)

VALUES

(01, 'Yousif Adel', 'Software Engineering', 'Cairo, Egypt', '2002-02-24', '2024-01-01', 'Male', 7500.00, 01, NULL),

(02, 'Dr. Mohamed Ali', 'History', 'Cairo, Egypt', '1983-09-15', '2012-05-01', 'Male', 5500.00, 03, 01),

(03, 'Dr. Fatma Ahmedy', 'Mathematics', '123 Al-Maadi Street, Cairo, Egypt', '1980-05-10', '2010-08-01', 'Male', 5000.00, 04, 01),

(04, 'Dr. Youssef Hassan', 'Physics', '456 Nasr City, Cairo, Egypt', '1975-11-25', '2005-02-14', 'Male', 7000.00, 05, 01),

(05, 'Dr. Mahmoud Omar', 'Biology', 'Cairo, Egypt', '2002-02-24', '2024-01-01', 'Male', 7500.00, 07, 01),

(06, 'Dr. Karim Sherif', 'Computer Science', 'Cairo, Egypt', '1983-09-15', '2012-05-01', 'Male', 5500.00,12, 01),

(07, 'Dr. Ahmed Elsayed', 'Literature', '123 Al-Maadi Street, Cairo, Egypt', '1980-05-10', '2010-08-01', 'Male', 5000.00, 14, 01),

(08, 'Dr. Hassan Elsayed', 'Physics', '456 Nasr City, Cairo, Egypt', '1975-11-25', '2005-02-14', 'Female', 7000.00, 17, 01),

(09, 'Dr. Shaimaa Fawzy', 'Geography', '456 Nasr City, Cairo, Egypt', '1975-11-25', '2005-02-14', 'Female', 7000.00, 20, 01);

INSERT INTO Books (ID, name, author) VALUES (01, 'Mathematics for Kids', 'John Doe'), (02, 'Science Fun: A Beginner’s Guide', 'Emily Green'), (03, 'Learning English: Grammar Basics', 'Sarah Lee'), (04, 'History for Beginners', 'Michael Brown'), (05, 'Geography: Exploring the World', 'Rachel Adams'), (06, 'The Ultimate Guide to Study Skills', 'David White'), (07, 'Introduction to Biology', 'Anna Clark'), (08, 'Understanding Physics: A School Student’s Guide', 'Richard Turner'), (09, 'Learning Through Art', 'Sophia Walker'), (10, 'Fun with Chemistry: A Kid’s Guide', 'James Harris'), (11, 'Computer Science for Students', 'William Scott'), (12, 'How to Solve Math Problems', 'Linda Davis'), (13, 'World History for Teens', 'Charles Johnson'), (14, 'Study Hacks for School Success', 'Olivia Robinson'), (15, 'Creative Writing for Young Writers', 'Megan King');

INSERT INTO Classes (ID, className) VALUES (01, 'Mathematics - Grade 1'), (02, 'Science - Grade 2'), (03, 'English Language - Grade 3'), (04, 'Social Studies - Grade 4'), (05, 'Geography - Grade 5'), (06, 'History - Grade 6'), (07, 'Biology - Grade 7'), (08, 'Chemistry - Grade 8'), (09, 'Physics - Grade 9'), (10, 'Mathematics - Grade 10'), (11, 'English Literature - Grade 11'), (12, 'Computer Science - Grade 12'), (13, 'Physical Education - Grade 1'), (14, 'Art and Design - Grade 3'), (15, 'Music - Grade 4');

INSERT INTO parentphones (parent\_ID, phone\_number)

VALUES

(01, '01012345678'),

(02, '01122334455'),

(02, '01555667788'),

(03, '01055566677'),

(03, '01244433322'),

(04, '01288899900'),

(04, '01022233344'),

(05, '01544455566'),

(06, '01066677788'),

(06, '01555544433'),

(07, '01233344455'),

(07, '01100099988'),

(08, '01177788899'),

(08, '01012312345'),

(09, '01099988877'),

(09, '01522211100'),

(10, '01155566677'),

(11, '01088877766'),

(11, '01211100099'),

(12, '01133344455'),

(12, '01055544433'),

(13, '01588899922'),

(13, '01222233344'),

(14, '01599988877'),

(15, '01244455566'),

(15, '01188877799');

INSERT INTO students (ID, name, BOD, admission\_date, gender, userID, student\_status, feeID, classID)

VALUES

(01, 'Mariam Salem', '2006-05-15', '2021-09-01', 'Female', 02, 'Active', 1, 1),

(02, 'Dina Abdelaziz', '2007-08-20', '2022-09-01', 'Female', 08, 'Active', 2, 2),

(03, 'Nour Saad', '2005-11-10', '2020-09-01', 'Female', 10, 'Active', 3, 3),

(04, 'Maha Nabil', '2006-03-25', '2021-09-01', 'Female', 13, 'Graduated', 4, 4),

(05, 'Rana Ali', '2007-12-05', '2022-09-01', 'Female', 15, 'Active', 5, 5),

(06, 'Layla Amine', '2008-01-15', '2023-09-01', 'Female', 18, 'Active', 6, 6),

(07, 'Ahmed Hossam', '2006-07-10', '2021-09-01', 'Male', 7, 'Graduated', 7, 1),

(08, 'Khaled Mostafa', '2005-09-30', '2020-09-01', 'Male', 8, 'Suspended', 8, 2),

(09, 'Salma Hassan', '2007-02-18', '2022-09-01', 'Female', 9, 'Active', 9, 3),

(10, 'Omar Adel', '2006-11-22', '2021-09-01', 'Male', 10, 'Active', 10, 4),

(11, 'Fatma Ibrahim', '2008-03-12', '2023-09-01', 'Female', 11, 'Suspended', 11, 5),

(12, 'Huda Mahmoud', '2007-01-01', '2022-09-01', 'Female', 12, 'Active', 12, 6),

(13, 'Youssef Tarek', '2005-05-05', '2020-09-01', 'Male', 13, 'Suspended', 13, 1),

(14, 'Amira Saeed', '2007-10-10', '2022-09-01', 'Female', 14, 'Active', 14, 2),

(15, 'Rami Ahmed', '2006-12-25', '2021-09-01', 'Male', 15, 'Graduated', 15, 3);

INSERT INTO studentPhones (student\_ID, phone\_number)

VALUES

(01, '01012345678'),

(02, '01122334455'),

(02, '01555667788'),

(03, '01234567890'),

(03, '01199988877'),

(04, '01544433322'),

(04, '01066655544'),

(05, '01188877766'),

(06, '01233311100'),

(06, '01500099988'),

(07, '01233344455'),

(07, '01100099988'),

(08, '01077788899'),

(08, '01066655544'),

(09, '01099988877'),

(09, '01522211100'),

(10, '01222233344'),

(12, '01088855544'),

(12, '01055544433'),

(13, '01199911188'),

(13, '01088855544'),

(14, '01211122233'),

(15, '01577799988'),

(15, '01033344455');

INSERT INTO StudentParents (studentID, parentID)

VALUES (01, 01), (01, 02), (02, 03), (02, 04), (03, 05), (04, 06), (05, 07), (06, 08), (07, 08), (07, 12),

(08, 10), (08, 14), (09, 13), (15, 01), (15, 02), (14, 04), (14, 05);

INSERT INTO Subjects (ID, subject\_name, subject\_code, teachingstaff\_ID)

VALUES (1, 'Mathematics', 'MTH101', 03);

INSERT INTO Subjects (ID, subject\_name, subject\_code, teachingstaff\_ID)

VALUES (2, 'Literature', 'LTR', 07);

INSERT INTO Subjects (ID, subject\_name, subject\_code, teachingstaff\_ID)

VALUES (3, 'Physics', 'PHS', 04);

INSERT INTO Subjects (ID, subject\_name, subject\_code, teachingstaff\_ID)

VALUES (4, 'Biology', 'BGY', 05);

INSERT INTO Subjects (ID, subject\_name, subject\_code, teachingstaff\_ID)

VALUES (5, 'Computer Science', 'CSC105', 06);

INSERT INTO Subjects (ID, subject\_name, subject\_code, teachingstaff\_ID)

VALUES (6, 'Geography', 'GHY', 09);

INSERT INTO Subjects (ID, subject\_name, subject\_code, teachingstaff\_ID)

VALUES (7, 'History', 'HIS', 02);

INSERT INTO Assignments (ID, due\_date, grade, teachingstaff\_ID, subject\_ID)

VALUES

(1, '2025-01-15', 'A', 03, 01),

(2, '2025-01-20', 'B+', 03, 01),

(3, '2025-01-25', 'A-', 07, 02),

(4, '2025-01-28', 'B', 07, 02),

(5, '2025-02-02', 'A+', 03, 01),

(6, '2025-02-10', 'C+', 04, 03),

(7, '2025-02-14', 'B-', 05, 04),

(8, '2025-02-20', 'A', 04, 03),

(9, '2025-02-25', 'B+', 07, 02),

(10, '2025-03-01', 'A-', 05, 04),

(11, '2025-03-05', 'B', 05, 04),

(12, '2025-03-10', 'A+', 09, 06),

(13, '2025-03-15', 'C', 06, 05),

(14, '2025-03-20', 'B+', 05, 04),

(15, '2025-03-25', 'A-', 09, 06),

(16, '2025-03-30', 'C+', 04, 03),

(17, '2025-04-04', 'B-', 06, 05),

(18, '2025-04-10', 'A', 09, 06),

(19, '2025-04-15', 'A+', 04, 03),

(20, '2025-04-20', 'B+', 06, 05),

(21, '2025-04-04', 'B-', 06, 05),

(22, '2025-04-10', 'A', 02, 07),

(23, '2025-04-15', 'A+', 04, 03),

(24, '2025-04-20', 'B+', 02, 07);

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (1, '01001234567');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (1, '01002345678');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (2, '01003456789');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (2, '01004567890');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (3, '01005678901');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (3, '01006789012');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (4, '01007890123');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (4, '01008901234');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (5, '01009123456');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (5, '01001234589');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (6, '01003456712');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (6, '01004567845');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (7, '01005678978');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (8, '01006789089');

INSERT INTO teachingstaffphones (ID, phone\_number) VALUES (8, '01007890190');

INSERT INTO StudentAssignments (studentID, assignmentID)

VALUES

(1, 1), (1, 2), (1, 3), (1, 4), (1, 5), (1, 6), (1, 7), (1, 8);

-- Insert for Student 10

INSERT INTO StudentAssignments (studentID, assignmentID)

VALUES

(10, 9), (10, 10), (10, 11), (10, 12), (10, 13), (10, 14), (10, 15), (10, 16);

INSERT INTO StudentAssignments (studentID, assignmentID)

VALUES

(12, 17), (12, 18), (12, 19), (12, 20), (12, 21), (12, 22), (12, 23), (12, 24);

INSERT INTO StudentAssignments (studentID, assignmentID)

VALUES

(14, 1), (14, 2), (14, 3),(14, 17), (14, 18), (14, 19), (14, 24);

INSERT INTO StudentAssignments (studentID, assignmentID)

VALUES

(2, 1), (2, 2), (2, 3), (2, 14), (2, 15), (2, 16),

(2, 17), (2, 18), (2, 19), (2, 23), (2, 24);

INSERT INTO StudentAssignments (studentID, assignmentID)

VALUES

(3, 1), (3, 2), (3, 3), (3, 4), (3, 5), (3, 6), (3, 7), (3, 8),

(3, 9), (3, 10), (3, 11), (3, 12), (3, 13), (3, 14), (3, 15), (3, 16),

(3, 17), (3, 18), (3, 19), (3, 20), (3, 21), (3, 22), (3, 23), (3, 24);

INSERT INTO StudentAssignments (studentID, assignmentID)

VALUES

(5, 14), (5, 15), (5, 16), (5, 17), (5, 18), (5, 19), (5, 20), (5, 21), (5, 22), (5, 23), (5, 24);

INSERT INTO StudentAssignments (studentID, assignmentID)

VALUES

(9, 1), (9, 2), (9, 15), (9, 16),

(9, 17), (9, 18), (9, 19), (9, 20);

INSERT INTO Loans (loanID, loanDate, returnDate, studentID, bookID)

VALUES

(1, '2025-01-10', '2025-02-10', 1, 1), (2, '2025-01-10', '2025-02-10', 1, 2);

INSERT INTO Loans (loanID, loanDate, returnDate, studentID, bookID)

VALUES

(3, '2025-01-10', '2025-02-10', 10, 1), (4, '2025-01-20', '2025-02-20', 10, 5), (5, '2025-01-22', '2025-02-22', 10, 8);

-- Insert for Student 12

INSERT INTO Loans (loanID, loanDate, returnDate, studentID, bookID)

VALUES

(6, '2025-01-22', '2025-02-22', 12, 7), (7, '2025-01-20', '2025-02-20', 14, 6),

(8, '2025-01-22', '2025-02-22', 11, 7);

INSERT INTO Loans (loanID, loanDate, returnDate, studentID, bookID)

VALUES

(9, '2025-01-10', '2025-02-10', 14, 1), (10, '2025-01-12', '2025-02-12', 9, 2), (11, '2025-01-15', '2025-02-15', 6, 3),

(12, '2025-01-18', '2025-02-18', 6, 4), (13, '2025-01-20', '2025-02-20', 8, 5), (14, '2025-01-20', '2025-02-20', 2, 6),

(15, '2025-01-22', '2025-02-22', 4, 7), (16, '2025-01-22', '2025-02-22', 14, 8);

INSERT INTO Exam (ID, exam\_date, grade, studentID, subjectID)

VALUES

(1, '2025-01-10', 'A', 1, 1), (2, '2025-01-12', 'B+', 1, 2), (3, '2025-01-15', 'A-', 1, 3),

(4, '2025-01-18', 'B', 1, 4), (5, '2025-01-20', 'C', 1, 5);

INSERT INTO Exam (ID, exam\_date, grade, studentID, subjectID)

VALUES

(6, '2025-01-10', 'C+', 2, 6), (7, '2025-01-12', 'B', 2, 7), (8, '2025-01-15', 'A+', 2, 2);

INSERT INTO Exam (ID, exam\_date, grade, studentID, subjectID)

VALUES

(9, '2025-01-10', 'B+', 3, 1), (10, '2025-01-12', 'C+', 4, 2), (11, '2025-01-15', 'A', 5, 3),

(12, '2025-01-18', 'B', 10, 4), (13, '2025-01-20', 'A-', 11, 5), (14, '2025-01-22', 'B+', 12, 6),

(15, '2025-01-25', 'C', 9, 7), (16, '2025-01-28', 'B-', 8, 7);

INSERT INTO Exam (ID, exam\_date, grade, studentID, subjectID)

VALUES

(17, '2025-01-10', 'B', 11, 1), (18, '2025-01-12', 'A+', 7, 2), (19, '2025-01-15', 'B+', 5, 3),

(20, '2025-01-18', 'A-', 12, 4), (21, '2025-01-20', 'B', 6, 5), (22, '2025-01-22', 'C+', 4, 6),

(23, '2025-01-25', 'A', 13, 7), (24, '2025-01-28', 'B-', 14, 7);

INSERT INTO Exam (ID, exam\_date, grade, studentID, subjectID)

VALUES

(25, '2025-01-10', 'A-', 3, 1), (26, '2025-01-12', 'B+', 3, 2), (27, '2025-01-15', 'C', 3, 3),

(28, '2025-01-18', 'B', 4, 4), (29, '2025-01-20', 'A', 4, 5), (30, '2025-01-22', 'B-',4, 6),

(31, '2025-01-25', 'A+', 5, 7), (32, '2025-01-28', 'C-', 5, 6);

INSERT INTO Exam (ID, exam\_date, grade, studentID, subjectID)

VALUES

(33, '2025-01-10', 'B-', 6, 1), (34, '2025-01-12', 'C+', 6, 2), (35, '2025-01-15', 'A+', 6, 3),

(36, '2025-01-18', 'B', 7, 4), (37, '2025-01-20', 'A-', 7, 5), (38, '2025-01-22', 'C', 7, 6),

(39, '2025-01-25', 'A', 8, 2), (40, '2025-01-28', 'B+', 8, 7);

INSERT INTO Exam (ID, exam\_date, grade, studentID, subjectID)

VALUES

(41, '2025-01-10', 'B-', 9, 1), (42, '2025-01-12', 'C+', 9, 2), (43, '2025-01-15', 'A+', 9, 3),

(44, '2025-01-18', 'B', 12, 4), (45, '2025-01-20', 'A-',11, 5), (46, '2025-01-22', 'C', 10, 6),

(47, '2025-01-25', 'A', 13, 7), (48, '2025-01-28', 'B+', 12, 4);

INSERT INTO ClassAttendance (classID, attendanceID, teachingstaff\_ID, subjectID, studentID)

VALUES

(1, 1, 2, 1, 1), (1, 2, 1, 2, 2), (2, 3, 2, 3, 3), (2, 4, 2, 4, 4), (3, 5, 2, 5, 5),

(3, 6, 3, 6, 6), (4, 7, 3, 7, 7), (4, 1,3, 1, 8), (5, 2, 3, 2, 9), (5, 3, 3, 3, 10),

(6, 4, 4, 4, 11), (6, 5, 4, 5, 12),(7, 6, 4, 6, 13), (7, 7, 4, 7, 14),

(8, 8, 5, 1, 15), (8, 9, 5, 2, 1), (9, 10, 5, 3, 3), (9, 11, 5, 4, 4), (10, 12, 5, 5, 5),

(10, 13, 6, 6, 6), (11, 14, 6, 7, 7), (11, 15, 6, 1, 11), (12, 16, 6, 2, 2), (12, 17, 6, 3, 2),

(13, 18, 7, 4, 4), (13, 19, 7, 5, 10),(14, 20, 7, 6, 9), (14, 1, 2, 7, 8),

(15, 2, 4, 6, 2), (15, 3, 4, 7, 1);

alter table parents

add userID varchar(10)

ALTER TABLE parents

add FOREIGN KEY (userID) REFERENCES users(ID) on UPDATE CASCADE on DELETE CASCADE;

CREATE TABLE admission (

ID INT AUTO\_INCREMENT PRIMARY KEY,

userID INT NOT NULL,

roleID INT NOT NULL,

status ENUM('Pending', 'Approved', 'Rejected') DEFAULT 'Pending',

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

FOREIGN KEY (userID) REFERENCES users(ID),

FOREIGN KEY (roleID) REFERENCES roles(ID)

);

CREATE TABLE admission (

ID INT AUTO\_INCREMENT PRIMARY KEY,

username varchar(50) NOT null,

email varchar(100) NOT null,

password varchar(60) NOT null,

roleID varchar(10) not null,

userID INT,

status ENUM('Pending', 'Approved', 'Rejected') DEFAULT 'Pending',

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

FOREIGN KEY (userID) REFERENCES users(ID) ON DELETE CASCADE ON UPDATE CASCADE,

FOREIGN KEY (roleID) REFERENCES roles(roleID) ON DELETE CASCADE ON UPDATE CASCADE

);