**Database Creation**

**-- Creating STUDENT table**

**CREATE TABLE STUDENT (**

**student\_id INT PRIMARY KEY,**

**first\_name VARCHAR(50),**

**last\_name VARCHAR(50),**

**street VARCHAR(100),**

**city VARCHAR(50),**

**state VARCHAR(50),**

**gender CHAR(1),**

**email VARCHAR(100),**

**birthdate DATE,**

**dept\_id INT,**

**FOREIGN KEY (dept\_id) REFERENCES DEPARTMENT(dept\_id)**

**);**

**alter table univ.student modify column cum\_gpa decimal(3,2) default null;**

**-- Creating STUDENT-PHONE table**

**CREATE TABLE STUDENT\_PHONE (**

**student\_id INT,**

**phone VARCHAR(20),**

**PRIMARY KEY (student\_id, phone),**

**FOREIGN KEY (student\_id) REFERENCES STUDENT(student\_id)**

**);**

**-- Creating DEPARTMENT table**

**CREATE TABLE DEPARTMENT (**

**dept\_id INT PRIMARY KEY,**

**dept\_name VARCHAR(50)**

**);**

**-- Creating COURSE table**

**CREATE TABLE COURSE (**

**course\_id INT PRIMARY KEY,**

**course\_name VARCHAR(100),**

**credits INT,**

**description TEXT,**

**dept\_id INT,**

**FOREIGN KEY (dept\_id) REFERENCES DEPARTMENT(dept\_id)**

**);**

**-- Creating STUDY table**

**CREATE TABLE assigned (**

**student\_id INT,**

**course\_id INT,**

**year INT,**

**semester VARCHAR(20),**

**gpa DECIMAL(3,2), -- Assuming GPA is stored as a decimal value**

**PRIMARY KEY (student\_id, course\_id, year),**

**FOREIGN KEY (student\_id) REFERENCES STUDENT(student\_id),**

**FOREIGN KEY (course\_id) REFERENCES COURSE(course\_id)**

**);**

**Database Population**

**INSERT INTO DEPARTMENT (dept\_id, dept\_name) VALUES**

**(1, 'Computer Science'),**

**(2, 'Electrical Engineering'),**

**(3, 'Mathematics');**

**-- Populating COURSE table for Computer Science department (dept\_id = 1)**

**INSERT INTO COURSE (course\_id, course\_name, credits, description, dept\_id)**

**VALUES**

**(101, 'Introduction to Programming', 3, 'Basic programming concepts and techniques', 1),**

**(102, 'Data Structures and Algorithms', 4, 'Fundamental data structures and algorithms', 1),**

**(103, 'Database Management Systems', 3, 'Introduction to database concepts and management', 1),**

**(104, 'Software Engineering', 4, 'Principles of software design and development', 1),**

**(105, 'Operating Systems', 4, 'Fundamentals of operating system concepts', 1),**

**(106, 'Web Development', 3, 'Basic web development technologies and techniques', 1),**

**(107, 'Artificial Intelligence', 4, 'Introduction to AI concepts and algorithms', 1),**

**(108, 'Computer Networks', 4, 'Fundamentals of computer networking', 1),**

**(109, 'Machine Learning', 3, 'Introduction to machine learning algorithms', 1),**

**(110, 'Cybersecurity Fundamentals', 3, 'Introduction to cybersecurity principles', 1),**

**-- Add 10 more courses for Computer Science**

**(111, 'Mobile App Development', 3, 'Developing applications for mobile platforms', 1),**

**(112, 'Computer Graphics', 4, 'Principles of computer graphics and visualization', 1),**

**(113, 'Data Mining', 3, 'Techniques for discovering patterns in large datasets', 1),**

**(114, 'Human-Computer Interaction', 4, 'Design principles for human-computer interaction', 1),**

**(115, 'Software Testing and Quality Assurance', 3, 'Testing methodologies for software quality', 1),**

**(116, 'Computer Vision', 4, 'Processing and analyzing visual information using computers', 1),**

**(117, 'Distributed Systems', 4, 'Design and implementation of distributed systems', 1),**

**(118, 'Natural Language Processing', 3, 'Processing and understanding natural language text', 1),**

**(119, 'Cloud Computing', 4, 'Principles and technologies of cloud computing', 1),**

**(120, 'Advanced Algorithms', 4, 'Advanced algorithms and data structures', 1);**

**-- Populating COURSE table for Electrical Engineering department (dept\_id = 2)**

**INSERT INTO COURSE (course\_id, course\_name, credits, description, dept\_id)**

**VALUES**

**(201, 'Circuit Design Fundamentals', 4, 'Introduction to electrical circuit design', 2),**

**(202, 'Digital Signal Processing', 3, 'Signal processing techniques using digital systems', 2),**

**(203, 'Power Systems Analysis', 4, 'Analysis of electrical power systems', 2),**

**(204, 'Control Systems Engineering', 4, 'Principles of control systems and automation', 2),**

**(205, 'Electromagnetic Fields and Waves', 3, 'Study of electromagnetic fields and wave propagation', 2),**

**(206, 'Microelectronics', 3, 'Introduction to microelectronic circuits and devices', 2),**

**(207, 'Communication Systems', 4, 'Principles of communication systems engineering', 2),**

**(208, 'VLSI Design', 3, 'Design of Very Large Scale Integration circuits', 2),**

**(209, 'Renewable Energy Systems', 4, 'Introduction to renewable energy technologies', 2),**

**(210, 'Electric Drives and Motors', 4, 'Design and control of electric drives', 2),**

**-- Add 10 more courses for Electrical Engineering**

**(211, 'Embedded Systems', 3, 'Design and programming of embedded systems', 2),**

**(212, 'Digital Control Systems', 4, 'Digital control techniques in engineering systems', 2),**

**(213, 'Advanced Power Electronics', 3, 'Advanced concepts in power electronics', 2),**

**(214, 'RF Circuit Design', 4, 'Design of radio frequency circuits and systems', 2),**

**(215, 'Optoelectronics', 3, 'Study of optics and electronics in devices', 2),**

**(216, 'Integrated Circuits Design', 4, 'Design and fabrication of integrated circuits', 2),**

**(217, 'Smart Grid Technologies', 4, 'Technologies for modernizing power grids', 2),**

**(218, 'Electrical Machines and Drives', 3, 'Analysis and design of electrical machines', 2),**

**(219, 'Antenna Theory and Design', 4, 'Principles of antenna theory and design', 2),**

**(220, 'Digital Image Processing', 4, 'Processing of digital images and signals', 2);**

**-- Populating COURSE table for Mathematics department (dept\_id = 3)**

**INSERT INTO COURSE (course\_id, course\_name, credits, description, dept\_id)**

**VALUES**

**(301, 'Linear Algebra', 3, 'Fundamental concepts in linear algebra', 3),**

**(302, 'Calculus I', 4, 'Introduction to differential and integral calculus', 3),**

**(303, 'Abstract Algebra', 3, 'Introduction to abstract algebraic structures', 3),**

**(304, 'Real Analysis', 4, 'Study of real numbers and real-valued functions', 3),**

**(305, 'Number Theory', 3, 'Study of integers and number properties', 3),**

**(306, 'Topology', 4, 'Introduction to topological spaces and structures', 3),**

**(307, 'Probability and Statistics', 4, 'Study of probability and statistical methods', 3),**

**(308, 'Differential Equations', 3, 'Solving ordinary and partial differential equations', 3),**

**(309, 'Mathematical Logic', 3, 'Study of formal mathematical reasoning', 3),**

**(310, 'Graph Theory', 4, 'Study of mathematical structures of graphs', 3),**

**-- Add 10 more courses for Mathematics**

**(311, 'Complex Analysis', 3, 'Study of complex numbers and functions', 3),**

**(312, 'Combinatorics', 4, 'Study of counting and arrangements', 3),**

**(313, 'Functional Analysis', 4, 'Study of infinite-dimensional vector spaces', 3),**

**(314, 'Numerical Analysis', 3, 'Numerical methods for solving mathematical problems', 3),**

**(315, 'Set Theory', 4, 'Study of sets and their properties', 3),**

**(316, 'Algebraic Geometry', 4, 'Study of algebraic varieties and geometric objects', 3),**

**(317, 'Mathematical Modeling', 3, 'Application of mathematics to real-world problems', 3),**

**(318, 'Game Theory', 4, 'Study of strategic interactions among rational decision-makers', 3),**

**(319, 'Complex Geometry', 3, 'Study of complex geometric structures', 3),**

**(320, 'Partial Differential Equations', 4, 'Study of partial differential equations', 3);**

**-- Modifying STUDENT table for the change in schema**

**ALTER TABLE STUDENT**

**DROP COLUMN country,**

**ADD COLUMN cum\_gpa DECIMAL(3,2) DEFAULT NULL;**

**-- Populating STUDENT table for Computer Science department (dept\_id = 1)**

**INSERT INTO STUDENT (student\_id, first\_name, last\_name, street, city, state, gender, email, birthdate, dept\_id, cum\_gpa)**

**VALUES**

**(1, 'Ahmed', 'Mohamed', '123 Nile St', 'Cairo', 'Cairo', 'M', 'ahmed.mohamed@email.com', '2005-05-15', 1, NULL),**

**(2, 'Fatima', 'Ali', '456 Sphinx St', 'Giza', 'Giza', 'F', 'fatima.ali@email.com', '2006-08-22', 1, NULL),**

**-- Add 8 more students for Computer Science**

**(3, 'Omar', 'Mahmoud', '789 Pyramid St', 'Luxor', 'Luxor', 'M', 'omar.mahmoud@email.com', '2005-03-10', 1, NULL),**

**(4, 'Aya', 'Abdelrahman', '101 Pharaoh St', 'Aswan', 'Aswan', 'F', 'aya.abdelrahman@email.com', '2006-11-05', 1, NULL),**

**(5, 'Mohamed', 'Khalil', '202 Nile St', 'Alexandria', 'Alexandria', 'M', 'mohamed.khalil@email.com', '2005-07-18', 1, NULL),**

**(6, 'Nour', 'Hassan', '303 Sphinx St', 'Luxor', 'Luxor', 'F', 'nour.hassan@email.com', '2006-02-28', 1, NULL),**

**(7, 'Karim', 'Ismail', '404 Pyramid St', 'Aswan', 'Aswan', 'M', 'karim.ismail@email.com', '2005-09-14', 1, NULL),**

**(8, 'Sara', 'Fathi', '505 Pharaoh St', 'Alexandria', 'Alexandria', 'F', 'sara.fathi@email.com', '2006-04-07', 1, NULL),**

**(9, 'Amr', 'Saeed', '606 Nile St', 'Cairo', 'Cairo', 'M', 'amr.saeed@email.com', '2005-12-20', 1, NULL),**

**(10, 'Yasmine', 'Abdallah', '707 Sphinx St', 'Giza', 'Giza', 'F', 'yasmine.abdallah@email.com', '2006-06-25', 1, NULL);**

**-- Populating STUDENT table for Electrical Engineering department (dept\_id = 2)**

**INSERT INTO STUDENT (student\_id, first\_name, last\_name, street, city, state, gender, email, birthdate, dept\_id, cum\_gpa)**

**VALUES**

**(11, 'Ahmed', 'Khaled', '123 Nile St', 'Cairo', 'Cairo', 'M', 'ahmed.khaled@email.com', '2005-01-12', 2, NULL),**

**(12, 'Nada', 'Mostafa', '456 Sphinx St', 'Giza', 'Giza', 'F', 'nada.mostafa@email.com', '2006-10-28', 2, NULL),**

**-- Add 8 more students for Electrical Engineering**

**(13, 'Khaled', 'Samir', '789 Pyramid St', 'Luxor', 'Luxor', 'M', 'khaled.samir@email.com', '2005-07-03', 2, NULL),**

**(14, 'Amina', 'Abdulaziz', '101 Pharaoh St', 'Aswan', 'Aswan', 'F', 'amina.abdulaziz@email.com', '2006-04-16', 2, NULL),**

**(15, 'Mohamed', 'Tarek', '202 Nile St', 'Alexandria', 'Alexandria', 'M', 'mohamed.tarek@email.com', '2005-11-29', 2, NULL),**

**(16, 'Reem', 'Hassan', '303 Sphinx St', 'Luxor', 'Luxor', 'F', 'reem.hassan@email.com', '2006-06-02', 2, NULL),**

**(17, 'Omar', 'Mahmoud', '404 Pyramid St', 'Aswan', 'Aswan', 'M', 'omar.mahmoud@email.com', '2005-02-14', 2, NULL),**

**(18, 'Sara', 'Fathi', '505 Pharaoh St', 'Alexandria', 'Alexandria', 'F', 'sara.fathi@email.com', '2006-09-27', 2, NULL),**

**(19, 'Hassan', 'Aly', '606 Nile St', 'Cairo', 'Cairo', 'M', 'hassan.aly@email.com', '2005-05-10', 2, NULL),**

**(20, 'Yasmine', 'Abdallah', '707 Sphinx St', 'Giza', 'Giza', 'F', 'yasmine.abdallah@email.com', '2006-12-23', 2, NULL);**

**-- Populating STUDENT table for Mathematics department (dept\_id = 3)**

**INSERT INTO STUDENT (student\_id, first\_name, last\_name, street, city, state, gender, email, birthdate, dept\_id, cum\_gpa)**

**VALUES**

**(21, 'Omar', 'Tawfik', '123 Nile St', 'Cairo', 'Cairo', 'M', 'omar.tawfik@email.com', '2005-09-05', 3, NULL),**

**(22, 'Nour', 'Ezzat', '456 Sphinx St', 'Giza', 'Giza', 'F', 'nour.ezzat@email.com', '2006-04-18', 3, NULL),**

**-- Add 8 more students for Mathematics**

**(23, 'Ahmed', 'Hassan', '789 Pyramid St', 'Luxor', 'Luxor', 'M', 'ahmed.hassan@email.com', '2005-11-01', 3, NULL),**

**(24, 'Fatima', 'Mansour', '101 Pharaoh St', 'Aswan', 'Aswan', 'F', 'fatima.mansour@email.com', '2006-06-14', 3, NULL),**

**(25, 'Khaled', 'Ali', '202 Nile St', 'Alexandria', 'Alexandria', 'M', 'khaled.ali@email.com', '2005-01-27', 3, NULL),**

**(26, 'Nada', 'Youssef', '303 Sphinx St', 'Luxor', 'Luxor', 'F', 'nada.youssef@email.com', '2006-09-09', 3, NULL),**

**(27, 'Amr', 'Mohamed', '404 Pyramid St', 'Aswan', 'Aswan', 'M', 'amr.mohamed@email.com', '2005-04-22', 3, NULL),**

**(28, 'Sara', 'Ahmed', '505 Pharaoh St', 'Alexandria', 'Alexandria', 'F', 'sara.ahmed@email.com', '2006-12-05', 3, NULL),**

**(29, 'Mahmoud', 'Yassin', '606 Nile St', 'Cairo', 'Cairo', 'M', 'mahmoud.yassin@email.com', '2005-07-18', 3, NULL),**

**(30, 'Rania', 'Samir', '707 Sphinx St', 'Giza', 'Giza', 'F', 'rania.samir@email.com', '2006-02-01', 3, NULL);**

**INSERT INTO STUDENT\_PHONE (student\_id, phone) VALUES**

**(1, '01001234567'),**

**(2, '01111234567'),**

**(3, '01221234567'),**

**(4, '01031234567'),**

**(5, '01141234567'),**

**(6, '01251234567'),**

**(7, '01061234567'),**

**(8, '01171234567'),**

**(9, '01281234567'),**

**(10, '01091234567'),**

**(11, '01101234567'),**

**(12, '01211234567'),**

**(13, '01021234567'),**

**(14, '01131234567'),**

**(15, '01241234567'),**

**(16, '01041234567'),**

**(17, '01151234567'),**

**(18, '01261234567'),**

**(19, '01071234567'),**

**(20, '01181234567'),**

**(21, '01291234567'),**

**(22, '01012234567'),**

**(23, '01122234567'),**

**(24, '01232234567'),**

**(25, '01042234567'),**

**(26, '01152234567'),**

**(27, '01262234567'),**

**(28, '01072234567'),**

**(29, '01182234567'),**

**(30, '01292234567'),**

**(31, '01003234567'),**

**(33, '01073234567'),**

**(36, '01183234567');**

**INSERT INTO assigned (student\_id, course\_id, year, semester, gpa)**

**VALUES**

**-- First Semester**

**(1, 101, 2023, 'First Semester', 4.0),**

**(1, 102, 2023, 'First Semester', 3.75),**

**(1, 201, 2023, 'First Semester', 3.4), -- Course from another department**

**-- Another course from student's department**

**-- Second Semester**

**(1, 103, 2023, 'Second Semester', 3.4),**

**(1, 104, 2023, 'Second Semester', 3.75),**

**(1, 105, 2023, 'Second Semester', 3.6), -- Another course from student's department**

**(3, 101, 2023, 'First Semester', 3.75),**

**(3, 102, 2023, 'First Semester', 4.0),**

**(3, 201, 2023, 'First Semester', 3.4), -- Course from another department**

**-- Second Semester for student\_id = 3**

**(3, 103, 2023, 'Second Semester', 3.75),**

**(3, 104, 2023, 'Second Semester', 4.0),**

**(3, 105, 2023, 'Second Semester', 3.1),**

**-- First Semester for student\_id = 5**

**(5, 101, 2023, 'First Semester', 3.1),**

**(5, 102, 2023, 'First Semester', 3.75),**

**(5, 201, 2023, 'First Semester', 3.75), -- Course from another department**

**-- Second Semester for student\_id = 5**

**(5, 103, 2023, 'Second Semester', 3.1),**

**(5, 104, 2023, 'Second Semester', 3.4),**

**(5, 105, 2023, 'Second Semester', 4.0), -- Another course from student's department**

**-- First Semester for student\_id = 7**

**(7, 101, 2023, 'First Semester', 3.1),**

**(7, 102, 2023, 'First Semester', 3.75),**

**(7, 201, 2023, 'First Semester', 3.1), -- Course from another department**

**-- Second Semester for student\_id = 7**

**(7, 103, 2023, 'Second Semester', 4.0),**

**(7, 104, 2023, 'Second Semester', 3.1),**

**(7, 105, 2023, 'Second Semester', 3.75), -- Another course from student's department**

**-- First Semester for student\_id = 9**

**(9, 101, 2023, 'First Semester', 4.0),**

**(9, 102, 2023, 'First Semester', 4.0),**

**(9, 201, 2023, 'First Semester', 4.0), -- Course from another department**

**-- Second Semester for student\_id = 9**

**(9, 103, 2023, 'Second Semester', 4.0),**

**(9, 104, 2023, 'Second Semester', 4.0),**

**(9, 105, 2023, 'Second Semester', 4.0),**

**-- First Semester for student\_id = 11**

**(11, 201, 2023, 'First Semester', 3.4),**

**(11, 202, 2023, 'First Semester', 3.1),**

**(11, 101, 2023, 'First Semester', 3.75), -- Course from another department**

**-- Second Semester for student\_id = 11**

**(11, 203, 2023, 'Second Semester', 3.1),**

**(11, 204, 2023, 'Second Semester', 4.0),**

**(11, 205, 2023, 'Second Semester', 3.6), -- Another course from student's department**

**-- First Semester for student\_id = 13**

**(13, 201, 2023, 'First Semester', 4.0),**

**(13, 202, 2023, 'First Semester', 3.1),**

**(13, 101, 2023, 'First Semester', 3.75), -- Course from another department**

**-- Second Semester for student\_id = 13**

**(13, 203, 2023, 'Second Semester', 4.0),**

**(13, 204, 2023, 'Second Semester', 3.75),**

**(13, 205, 2023, 'Second Semester', 4.0),**

**-- First Semester for student\_id = 15**

**(15, 201, 2023, 'First Semester', 3.1),**

**(15, 202, 2023, 'First Semester', 4.0),**

**(15, 101, 2023, 'First Semester', 3.75), -- Course from another department**

**-- Second Semester for student\_id = 15**

**(15, 203, 2023, 'Second Semester', 4.0),**

**(15, 204, 2023, 'Second Semester', 3.75),**

**(15, 205, 2023, 'Second Semester', 3.4), -- Another course from student's department**

**-- First Semester for student\_id = 17**

**(17, 201, 2023, 'First Semester', 4.0),**

**(17, 202, 2023, 'First Semester', 4.0),**

**(17, 101, 2023, 'First Semester', 3.1), -- Course from another department**

**-- Second Semester for student\_id = 17**

**(17, 203, 2023, 'Second Semester', 3.1),**

**(17, 204, 2023, 'Second Semester', 4.0),**

**(17, 205, 2023, 'Second Semester', 3.75), -- Another course from student's department**

**-- First Semester for student\_id = 19**

**(19, 201, 2023, 'First Semester', 4.0),**

**(19, 202, 2023, 'First Semester', 3.75),**

**(19, 101, 2023, 'First Semester', 3.1), -- Course from another department**

**-- Second Semester for student\_id = 19**

**(19, 203, 2023, 'Second Semester', 3.1),**

**(19, 204, 2023, 'Second Semester', 3.75),**

**(19, 205, 2023, 'Second Semester', 3.1),**

**-- First Semester for student\_id = 21**

**(21, 301, 2023, 'First Semester', 3.1),**

**(21, 302, 2023, 'First Semester', 3.1),**

**(21, 101, 2023, 'First Semester', 3.75), -- Course from another department**

**-- Second Semester for student\_id = 21**

**(21, 303, 2023, 'Second Semester', 3.1),**

**(21, 304, 2023, 'Second Semester', 3.75),**

**(21, 305, 2023, 'Second Semester', 3.1), -- Another course from student's department**

**-- First Semester for student\_id = 23**

**(23, 301, 2023, 'First Semester', 3.1),**

**(23, 302, 2023, 'First Semester', 4.0),**

**(23, 101, 2023, 'First Semester', 3.4), -- Course from another department**

**-- Second Semester for student\_id = 23**

**(23, 303, 2023, 'Second Semester', 4.0),**

**(23, 304, 2023, 'Second Semester', 4.0),**

**(23, 305, 2023, 'Second Semester', 4.0),**

**-- First Semester for student\_id = 25**

**(25, 301, 2023, 'First Semester', 3.75),**

**(25, 302, 2023, 'First Semester', 3.75),**

**(25, 101, 2023, 'First Semester', 4.0), -- Course from another department**

**-- Second Semester for student\_id = 25**

**(25, 303, 2023, 'Second Semester', 3.1),**

**(25, 304, 2023, 'Second Semester', 3.1),**

**(25, 305, 2023, 'Second Semester', 4.0), -- Another course from student's department**

**-- First Semester for student\_id = 27**

**(27, 301, 2023, 'First Semester', 4.0),**

**(27, 302, 2023, 'First Semester', 3.1),**

**(27, 101, 2023, 'First Semester', 3.75), -- Course from another department**

**-- Second Semester for student\_id = 27**

**(27, 303, 2023, 'Second Semester', 3.1),**

**(27, 304, 2023, 'Second Semester', 3.1),**

**(27, 305, 2023, 'Second Semester', 3.75), -- Another course from student's department**

**-- First Semester for student\_id = 29**

**(29, 301, 2023, 'First Semester', 3.1),**

**(29, 302, 2023, 'First Semester', 3.75),**

**(29, 101, 2023, 'First Semester', 3.4), -- Course from another department**

**-- Second Semester for student\_id = 29**

**(29, 303, 2023, 'Second Semester', 3.75),**

**(29, 304, 2023, 'Second Semester', 3.1),**

**(29, 305, 2023, 'Second Semester', 3.75);**

**INSERT INTO assigned (student\_id, course\_id, year, semester, gpa)**

**VALUES**

**-- First Semester for student\_id = 1, year = 2024**

**(1, 106, 2024, 'First Semester', NULL),**

**(1, 107, 2024, 'First Semester', NULL),**

**(1, 108, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 1, year = 2024**

**(1, 109, 2024, 'Second Semester', NULL),**

**(1, 110, 2024, 'Second Semester', NULL),**

**(1, 111, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 3, year = 2024**

**(3, 106, 2024, 'First Semester', NULL),**

**(3, 107, 2024, 'First Semester', NULL),**

**(3, 108, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 3, year = 2024**

**(3, 109, 2024, 'Second Semester', NULL),**

**(3, 110, 2024, 'Second Semester', NULL),**

**(3, 111, 2024, 'Second Semester', NULL),**

**-- Repeat the pattern for other students (e.g., students 5, 7, 9) and courses 106 to 111...**

**-- First Semester for student\_id = 5, year = 2024**

**(5, 106, 2024, 'First Semester', NULL),**

**(5, 107, 2024, 'First Semester', NULL),**

**(5, 108, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 5, year = 2024**

**(5, 109, 2024, 'Second Semester', NULL),**

**(5, 110, 2024, 'Second Semester', NULL),**

**(5, 111, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 7, year = 2024**

**(7, 106, 2024, 'First Semester', NULL),**

**(7, 107, 2024, 'First Semester', NULL),**

**(7, 108, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 7, year = 2024**

**(7, 109, 2024, 'Second Semester', NULL),**

**(7, 110, 2024, 'Second Semester', NULL),**

**(7, 111, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 9, year = 2024**

**(9, 106, 2024, 'First Semester', NULL),**

**(9, 107, 2024, 'First Semester', NULL),**

**(9, 108, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 9, year = 2024**

**(9, 109, 2024, 'Second Semester', NULL),**

**(9, 110, 2024, 'Second Semester', NULL),**

**(9, 111, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other students and courses 106 to 111...**

**-- First Semester for student\_id = 11, year = 2024**

**(11, 206, 2024, 'First Semester', NULL),**

**(11, 207, 2024, 'First Semester', NULL),**

**(11, 208, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 11, year = 2024**

**(11, 209, 2024, 'Second Semester', NULL),**

**(11, 210, 2024, 'Second Semester', NULL),**

**(11, 211, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 13, year = 2024**

**(13, 206, 2024, 'First Semester', NULL),**

**(13, 207, 2024, 'First Semester', NULL),**

**(13, 208, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 13, year = 2024**

**(13, 209, 2024, 'Second Semester', NULL),**

**(13, 210, 2024, 'Second Semester', NULL),**

**(13, 211, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 15, year = 2024**

**(15, 206, 2024, 'First Semester', NULL),**

**(15, 207, 2024, 'First Semester', NULL),**

**(15, 208, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 15, year = 2024**

**(15, 209, 2024, 'Second Semester', NULL),**

**(15, 210, 2024, 'Second Semester', NULL),**

**(15, 211, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 17, year = 2024**

**(17, 206, 2024, 'First Semester', NULL),**

**(17, 207, 2024, 'First Semester', NULL),**

**(17, 208, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 17, year = 2024**

**(17, 209, 2024, 'Second Semester', NULL),**

**(17, 210, 2024, 'Second Semester', NULL),**

**(17, 211, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 19, year = 2024**

**(19, 206, 2024, 'First Semester', NULL),**

**(19, 207, 2024, 'First Semester', NULL),**

**(19, 208, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 19, year = 2024**

**(19, 209, 2024, 'Second Semester', NULL),**

**(19, 210, 2024, 'Second Semester', NULL),**

**(19, 211, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other students and courses 206 to 211...**

**-- First Semester for student\_id = 21, year = 2024**

**(21, 306, 2024, 'First Semester', NULL),**

**(21, 307, 2024, 'First Semester', NULL),**

**(21, 308, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 21, year = 2024**

**(21, 309, 2024, 'Second Semester', NULL),**

**(21, 310, 2024, 'Second Semester', NULL),**

**(21, 311, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 23, year = 2024**

**(23, 306, 2024, 'First Semester', NULL),**

**(23, 307, 2024, 'First Semester', NULL),**

**(23, 308, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 23, year = 2024**

**(23, 309, 2024, 'Second Semester', NULL),**

**(23, 310, 2024, 'Second Semester', NULL),**

**(23, 311, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 25, year = 2024**

**(25, 306, 2024, 'First Semester', NULL),**

**(25, 307, 2024, 'First Semester', NULL),**

**(25, 308, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 25, year = 2024**

**(25, 309, 2024, 'Second Semester', NULL),**

**(25, 310, 2024, 'Second Semester', NULL),**

**(25, 311, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 27, year = 2024**

**(27, 306, 2024, 'First Semester', NULL),**

**(27, 307, 2024, 'First Semester', NULL),**

**(27, 308, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 27, year = 2024**

**(27, 309, 2024, 'Second Semester', NULL),**

**(27, 310, 2024, 'Second Semester', NULL),**

**(27, 311, 2024, 'Second Semester', NULL),**

**-- First Semester for student\_id = 29, year = 2024**

**(29, 306, 2024, 'First Semester', NULL),**

**(29, 307, 2024, 'First Semester', NULL),**

**(29, 308, 2024, 'First Semester', NULL),**

**-- Second Semester for student\_id = 29, year = 2024**

**(29, 309, 2024, 'Second Semester', NULL),**

**(29, 310, 2024, 'Second Semester', NULL),**

**(29, 311, 2024, 'Second Semester', NULL);**

**-- First and Second Semesters for even student\_ids (2, 4, 6, ..., 30), year = 2024**

**INSERT INTO assigned (student\_id, course\_id, year, semester, gpa)**

**VALUES**

**-- First Semester**

**(2, 101, 2024, 'First Semester', NULL),**

**(2, 102, 2024, 'First Semester', NULL),**

**(2, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester**

**(2, 103, 2024, 'Second Semester', NULL),**

**(2, 104, 2024, 'Second Semester', NULL),**

**(2, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (4, 6, 8, ..., 30)...**

**(4, 101, 2024, 'First Semester', NULL),**

**(4, 102, 2024, 'First Semester', NULL),**

**(4, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (4, 6, 8, ..., 30)...**

**(4, 103, 2024, 'Second Semester', NULL),**

**(4, 104, 2024, 'Second Semester', NULL),**

**(4, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (6, 8, ..., 30)...**

**-- Add more student\_ids as needed**

**-- Repeat the pattern for other semesters and years if necessary**

**-- Continue the pattern for other even student\_ids (6, 8, ..., 30)...**

**-- First Semester**

**(6, 101, 2024, 'First Semester', NULL),**

**(6, 102, 2024, 'First Semester', NULL),**

**(6, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester**

**(6, 103, 2024, 'Second Semester', NULL),**

**(6, 104, 2024, 'Second Semester', NULL),**

**(6, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (8, 10, ..., 30)...**

**(8, 101, 2024, 'First Semester', NULL),**

**(8, 102, 2024, 'First Semester', NULL),**

**(8, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (8, 10, ..., 30)...**

**(8, 103, 2024, 'Second Semester', NULL),**

**(8, 104, 2024, 'Second Semester', NULL),**

**(8, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (10, 12, ..., 30)...**

**-- Add more student\_ids as needed**

**-- Repeat the pattern for other semesters and years if necessary**

**-- Continue the pattern for other even student\_ids (10, 12, ..., 30)...**

**-- First Semester**

**(10, 101, 2024, 'First Semester', NULL),**

**(10, 102, 2024, 'First Semester', NULL),**

**(10, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester**

**(10, 103, 2024, 'Second Semester', NULL),**

**(10, 104, 2024, 'Second Semester', NULL),**

**(10, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (12, 14, ..., 30)...**

**(12, 101, 2024, 'First Semester', NULL),**

**(12, 102, 2024, 'First Semester', NULL),**

**(12, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (12, 14, ..., 30)...**

**(12, 103, 2024, 'Second Semester', NULL),**

**(12, 104, 2024, 'Second Semester', NULL),**

**(12, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (14, 16, ..., 30)...**

**-- Add more student\_ids as needed**

**-- Repeat the pattern for other semesters and years if necessary**

**-- Continue the pattern for other even student\_ids (14, 16, 18, 20, 22, 24, 26, 28, 30)...**

**-- First Semester**

**(14, 101, 2024, 'First Semester', NULL),**

**(14, 102, 2024, 'First Semester', NULL),**

**(14, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester**

**(14, 103, 2024, 'Second Semester', NULL),**

**(14, 104, 2024, 'Second Semester', NULL),**

**(14, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (16, 18, 20, 22, 24, 26, 28, 30)...**

**(16, 101, 2024, 'First Semester', NULL),**

**(16, 102, 2024, 'First Semester', NULL),**

**(16, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (16, 18, 20, 22, 24, 26, 28, 30)...**

**(16, 103, 2024, 'Second Semester', NULL),**

**(16, 104, 2024, 'Second Semester', NULL),**

**(16, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (18, 20, 22, 24, 26, 28, 30)...**

**(18, 101, 2024, 'First Semester', NULL),**

**(18, 102, 2024, 'First Semester', NULL),**

**(18, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (18, 20, 22, 24, 26, 28, 30)...**

**(18, 103, 2024, 'Second Semester', NULL),**

**(18, 104, 2024, 'Second Semester', NULL),**

**(18, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (20, 22, 24, 26, 28, 30)...**

**(20, 101, 2024, 'First Semester', NULL),**

**(20, 102, 2024, 'First Semester', NULL),**

**(20, 201, 2024, 'First Semester', NULL),**

**-- Second Semester for even student\_ids (20, 22, 24, 26, 28, 30)...**

**(20, 103, 2024, 'Second Semester', NULL),**

**(20, 104, 2024, 'Second Semester', NULL),**

**(20, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (22, 24, 26, 28, 30)...**

**-- Add more student\_ids as needed**

**-- Repeat the pattern for other semesters and years if necessary**

**-- Continue the pattern for other even student\_ids (22, 24, 26, 28, 30)...**

**-- First Semester**

**(22, 101, 2024, 'First Semester', NULL),**

**(22, 102, 2024, 'First Semester', NULL),**

**(22, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester**

**(22, 103, 2024, 'Second Semester', NULL),**

**(22, 104, 2024, 'Second Semester', NULL),**

**(22, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (24, 26, 28, 30)...**

**(24, 101, 2024, 'First Semester', NULL),**

**(24, 102, 2024, 'First Semester', NULL),**

**(24, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (24, 26, 28, 30)...**

**(24, 103, 2024, 'Second Semester', NULL),**

**(24, 104, 2024, 'Second Semester', NULL),**

**(24, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (26, 28, 30)...**

**(26, 101, 2024, 'First Semester', NULL),**

**(26, 102, 2024, 'First Semester', NULL),**

**(26, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (26, 28, 30)...**

**(26, 103, 2024, 'Second Semester', NULL),**

**(26, 104, 2024, 'Second Semester', NULL),**

**(26, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (28, 30)...**

**(28, 101, 2024, 'First Semester', NULL),**

**(28, 102, 2024, 'First Semester', NULL),**

**(28, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (28, 30)...**

**(28, 103, 2024, 'Second Semester', NULL),**

**(28, 104, 2024, 'Second Semester', NULL),**

**(28, 105, 2024, 'Second Semester', NULL),**

**-- Continue the pattern for other even student\_ids (30)...**

**(30, 101, 2024, 'First Semester', NULL),**

**(30, 102, 2024, 'First Semester', NULL),**

**(30, 201, 2024, 'First Semester', NULL), -- Course from another department**

**-- Second Semester for even student\_ids (30)...**

**(30, 103, 2024, 'Second Semester', NULL),**

**(30, 104, 2024, 'Second Semester', NULL),**

**(30, 105, 2024, 'Second Semester', NULL);**