Project 02

create database Project02;

use Project02;

create table students

(

  students_id varchar(20) primary key,

  stu_name varchar(50) not null,

  department varchar(50) not null,

  Phone varchar(20),

  grade decimal(6,2) check(grade> 0)

);

INSERT INTO students (students_id, stu_name, department, Phone, grade)

VALUES ('S12345', 'John Doe', 'Computer Science', '123-456-7890', 85.50);

INSERT INTO students (students_id, stu_name, department, grade)

VALUES ('S34567', 'Alex Johnson', 'Physics', 78.50);

INSERT INTO students (students_id, stu_name, department, Phone, grade)

VALUES ('S45678', 'Emily Lee', 'Chemistry', '555-123-4567', 88.00);

select * from students;

Output:

students_id	stu_name	department	Phone	grade
S12345	John Doe	Computer Science	123-456-7890	85.50
S34567	Alex Johnson	Physics	NULL	78.50
S45678	Emily Lee	Chemistry	555-123-4567	88.00
NULL	NULL	NULL	NULL	NULL

create table course

(

  course_id int primary key,

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  course_name varchar(20) not null,

  dpt varchar(20) not null,

  prof varchar(50) not null,

  credit int check(credit between 0 and 100)

);
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INSERT INTO course (course_id, course_name, dpt, prof, credit)

VALUES (101, 'Database Management', 'Computer Science', 'Dr. Smith', 3);

INSERT INTO course (course_id, course_name, dpt, prof, credit)

VALUES (102, 'AI', 'Computer Science', 'Dr. Johnson', 4);

INSERT INTO course (course_id, course_name, dpt, prof, credit)

VALUES (103, 'Data Analysis', 'Computer Science', 'Prof. Lee', 3);
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select * from course;
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Output:

	course_id	course_name	dpt	prof	credit
▶	101	Database Management	Computer Science	Dr. Smith	3
	102	AI	Computer Science	Dr. Johnson	4
	103	Data Analysis	Computer Science	Prof. Lee	3
*	NULL	NULL	NULL	NULL	NULL

```
create table Professor

(

  Prof_id varchar(10) Primary key,

  Prof_name varchar(50) not null,

  dpt varchar(20) not null,

  course_id int not null unique,

  foreign key(course_id) references course(course_id)

);

INSERT INTO Professor (Prof_id, Prof_name, dpt, course_id)

VALUES ('P101', 'Dr. Smith', 'Computer Science', 101);
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INSERT INTO Professor (Prof_id, Prof_name, dpt, course_id)

VALUES ('P102', 'Prof. Johnson', 'Mathematics', 102);

INSERT INTO Professor (Prof_id, Prof_name, dpt, course_id)

VALUES ('P103', 'Dr. Lee', 'Physics', 103);

select * from Professor;

Output:

Prof_id	Prof_name	dpt	course_id
P101	Dr. Smith	Computer Science	101
P102	Prof. Johnson	Mathematics	102
P103	Dr. Lee	Physics	103
NULL	NULL	NULL	NULL

create table dept

(

  dep_id varchar(10),

  dep_name varchar(50),

  location varchar(50)

);

INSERT INTO dept (dep_id, dep_name, location)

VALUES ('D101', 'Computer Science', 'Building A, 3rd Floor');

INSERT INTO dept (dep_id, dep_name, location)

VALUES ('D102', 'Mathematics', 'Building B, 2nd Floor');

INSERT INTO dept (dep_id, dep_name, location)

VALUES ('D103', 'Physics', 'Building C, 1st Floor');

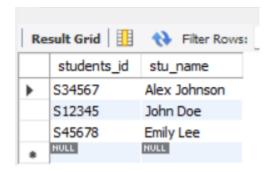select * from course;

Output:

Prof_id	Prof_name	dpt	course_id
P101	Dr. Smith	Computer Science	101
P102	Prof. Johnson	Mathematics	102
P103	Dr. Lee	Physics	103
NULL	NULL	NULL	NULL

select students_id, stu_name from students

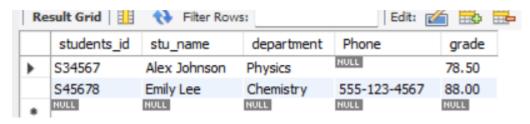group by students_id

order by grade;

Output:

students_id	stu_name
S34567	Alex Johnson
S12345	John Doe
S45678	Emily Lee
NULL	NULL

update course set credit = 5 where course_id = 101;

select * from course;

course_id	course_name	dpt	prof	credit
101	Database Management	Computer Science	Dr. Smith	5
102	AI	Computer Science	Dr. Johnson	4
103	Data Analysis	Computer Science	Prof. Lee	3
NULL	NULL	NULL	NULL	NULL

delete from students where students_id = 'S12345';

select * from students;

students_id	stu_name	department	Phone	grade
S34567	Alex Johnson	Physics	NULL	78.50
S45678	Emily Lee	Chemistry	555-123-4567	88.00
NULL	NULL	NULL	NULL	NULL

grant select, insert, delete, update on students to 'John'@'Localhost';

Revoke delete, update on students from 'John'@'Localhost';