Tyler Neal

CS 3425 R01

3/30/23

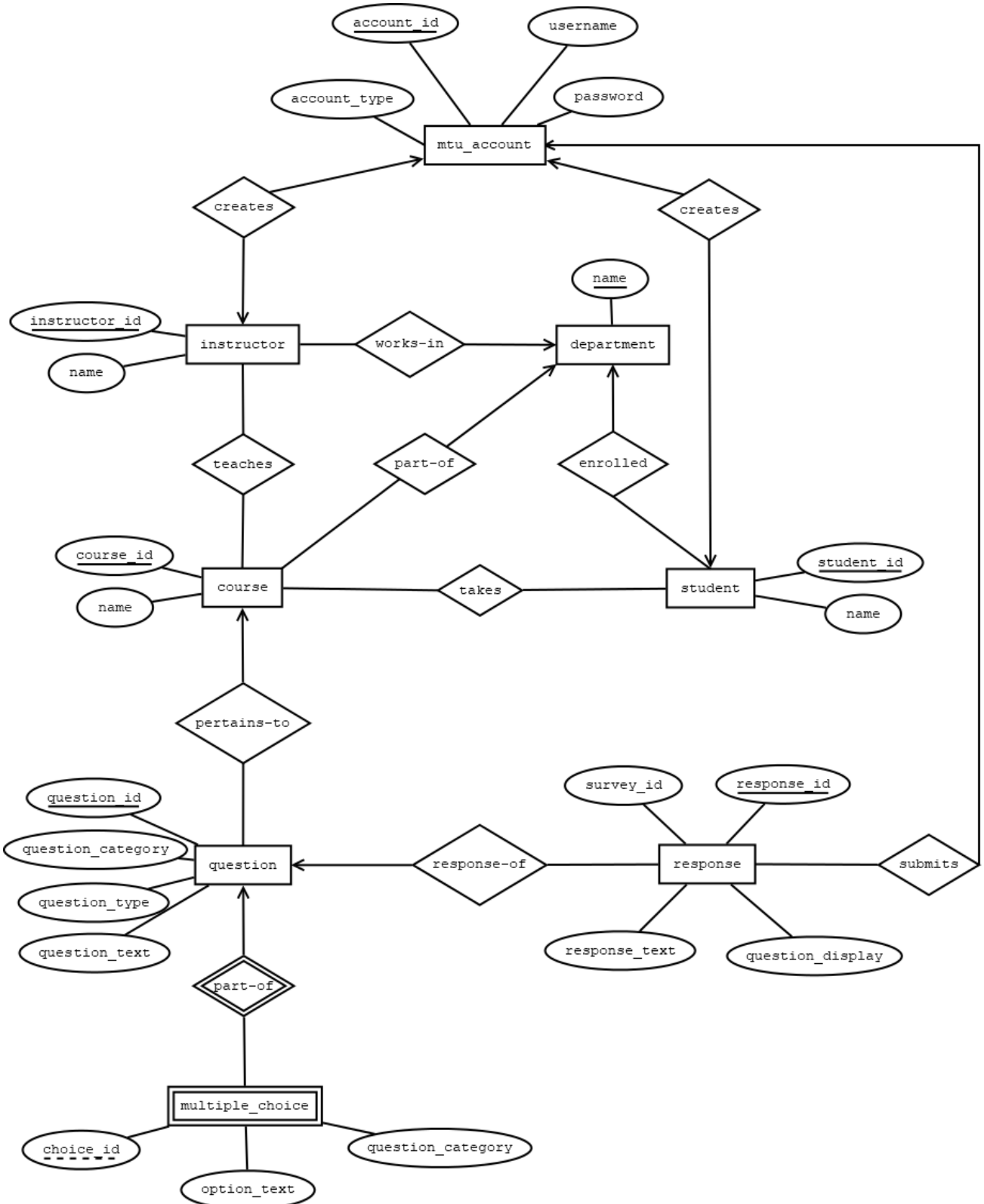
Sample Table:

4 Instructors	Alice, Aaron, Abel, Al,
6 Students	Bob, Ben, Brook, Brian, Bethany, Becky
4 Courses (enrolled students and instructor)	CS2311 instructor: Alice, Student: Bob, Ben, Brook CS1142 Instructor: Aaron, Student: Bob, Ben, Brian, Bethany CS2321 instructor: Al, Student: Bob, Ben, Brook, Brian, Bethany MA3425 instructor: Abel, Student: Brook, Brian, Bethany
Survey Questions 3 University Question	Q1: The pace of this course A. is too slow B. is just right C. is too fast D. I don't know Q2: The feedback from homework assignment grading A. Too few B. Sufficient C. I don't know Q3: Anything you like about the teaching of this course? Q4: The amount of homework assigned A. Not enough B. Just enough C. A bit too much D. Way too much E. Indifferent
Survey Questions CS Dept Questions	Q1: Do you use the lab for this course? A. Not at all B. Occasionally C. Sometimes D. All the time Q2: What operating system do you use for work related to this course? B. Mac C. Windows D. Linux
Survey Questions MATH Dept Questions	Q1: Would you benefit from additional Math Learning Center walk-in hours? A. Yes B. No C. Indifferent Q2: Did you use any of the university-provided software programs to assist in computations? A. Yes

	B. No
Survey Questions CS2321 Questions	Q1: Do you use the text book? A. Not at all B. Occasionally C. Often
Survey Questions CS1142 Questions	Q1: What programming languages are you comfortable with? Q2: How would you rate your current understanding of basic computer architecture and operating systems? A. No knowledge B. Beginner C. Intermediate D. Expert

10+ Survey results	CS2311: Bob and Ben completed the survey Q1: A, Q2: A, Q3 Q4: C dept Q1: A, Q2: A Q1: A, Q2: B, Q3 everything, Q4: D dept Q1: A, Q2: B CS1142: Bob, Ben, Brain completes the survey Q1: A, Q2: A, Q3 Q4: B dept Q1: A, Q2: B instructor Q1: Python, Q2: B Q1: A, Q2: B, Q3 everything Q4: A dept Q1: A, Q2: B instructor Q1: Java, Q2: C Q1: A, Q2: B, Q3 partial credit, Q4: D dept Q1: C, Q2: B instructor Q1: Java, C++, Q2: D CS2321: Bob, Ben, Brook, Brian, Bethany completed the survey Q1: A, Q2: A, Q3 Q4: B dept Q1: A Q2: A instructor Q1:A Q1: A, Q2: B, Q3 everything, Q4: B dept Q1: A Q2: B instructor Q1:C Q1: A, Q2: B, Q3 programming, Q4: B dept Q1: A Q2: A instructor Q1:C Q1: A, Q2: C, Q3 Q4: B dept Q1: A Q2: B instructor Q1:B Q1: A, Q2: D, Q3 SAM sessions, Q4: B dept Q1: A Q2: B instructor Q1:C MA3425: Brook, Brian, and Bethany completed the survey Q1: A, Q2: A, Q3 not really, Q4: D dept Q1: A, Q2: A Q1: A, Q2: B, Q3 nothing, Q4: D dept Q1: A, Q2: B Q1: A, Q2: B, Q3 lectures, Q4: B dept Q1: A, Q2: A

ER Diagram:


account_id
username
account_type
password
mtu_account
creates
creates
name
instructor_id
instructor
works-in
department
name
name
teaches
part-of
enrolled
course_id
course
takes
student
student_id
name
name
pertains-to
question_id
survey_id
response_id
question_category
question
response-of
response
submits
question_type
question_text
response_text
question_display
part-of
multiple_choice
choice_id
question_category
option_text

Relational Schema:

department

```
name: varchar(3) (PK))
```

student

```
student_id: int (PK) auto_increment,
name: varchar(50) not null)
```

instructor

```
instructor_id: int (PK) auto_increment,
name: varchar(50) not null)
```

mtu_account

```
account_id: int (PK) auto_increment,
username: varchar(50) not null (UQ),
password: varchar(64) not null,
account_type: ENUM('instructor', 'student') not null,
instructor_id: int,
student_id: int,
foreign key (instructor_id) references instructor(instructor_id) on delete cascade,
foreign key (student_id) references student(student_id) on delete cascade)
```

course

```
course_id: varchar(6) (PK),
name: varchar(50) not null,
dept_name: varchar(3),
foreign key (dept_name) references department(name) on delete cascade)
```

question

```
question_id: int (PK) auto_increment,
question_category: varchar(10),
question_display: varchar(3),
question_type: enum('multiple-choice', 'short response') not null,
question_text: varchar(1000) not null,
dept_name: varchar(3),
course_id: varchar(6),
foreign key (dept_name) references course(dept_name) on delete cascade,
foreign key (course_id) references course(course_id) on delete cascade)
```

multiple_choice

```
question_id: int,
question_category: varchar(10),
choice_display: varchar(3),
option_text: varchar(500),
dept_name: varchar(3),
course_id: varchar(6),
primary key (question_id, choice_display),
foreign key (question_id) references question(question_id) on delete cascade,
foreign key (dept_name) references course(dept_name) on delete cascade,
foreign key (course_id) references course(course_id) on delete cascade)
```

response

```
response_id: int (PK) auto_increment,
question_id: int,
question_category: varchar(10),
question_display: varchar(3),
response_text: varchar(2000),
dept_name: varchar(3),
course_id: varchar(6),
foreign key (question_id) references question(question_id) on delete cascade,
foreign key (dept_name) references course(dept_name) on delete cascade,
foreign key (course_id) references course(course_id) on delete cascade)
```

teaches

```
instructor_id: int,
course_id: varchar(6),
primary key (instructor_id, course_id),
foreign key (instructor_id) references instructor(instructor_id) on delete cascade,
foreign key (course_id) references course(course_id)
```

createTable.sql

```
-- Drop existing --
drop table if exists takes;
drop table if exists teaches;
drop table if exists response;
drop table if exists multiple_choice;
drop table if exists question;
drop table if exists course;
drop table if exists mtu_account;
drop table if exists instructor;
drop table if exists student;
drop table if exists department;

-- Create Tables --
create table department(
name varchar(3) primary key
);
create table student(
student_id int primary key auto_increment,
name varchar(50) not null
);

create table instructor(
instructor_id int primary key auto_increment,
name varchar(50) not null
);

create table mtu_account(
  account_id int primary key auto_increment,
  username varchar(50) not null unique,
  password varchar(64) not null,
  account_type ENUM('instructor', 'student') not null,
  instructor_id int,
  student_id int,
  foreign key (instructor_id) references instructor(instructor_id) on delete cascade,
  foreign key (student_id) references student(student_id) on delete cascade
);

create table course(
course_id varchar(6) primary key,
name varchar(50) not null,
dept_name varchar(3),
foreign key (dept_name) references department(name) on delete cascade
);

create table question(
question_id int primary key auto_increment,
question_category varchar(10),
question_display varchar(3),
question_type enum('multiple-choice', 'short response') not null,
question_text varchar(1000) not null,
dept_name varchar(3),
course_id varchar(6),
foreign key (dept_name) references course(dept_name) on delete cascade,
foreign key (course_id) references course(course_id) on delete cascade
);

create table multiple_choice(
question_id int,
question_category varchar(10),
```

```
choice_display varchar(3),
option_text varchar(500),
dept_name varchar(3),
course_id varchar(6),
primary key (question_id, choice_display),
foreign key (question_id) references question(question_id) on delete cascade,
foreign key (dept_name) references course(dept_name) on delete cascade,
foreign key (course_id) references course(course_id) on delete cascade
);

create table response(
response_id int auto_increment primary key,
survey_id int,
question_id int,
question_category varchar(10),
question_display varchar(3),
response_text varchar(2000),
dept_name varchar(3),
course_id varchar(6),
foreign key (question_id) references question(question_id) on delete cascade,
foreign key (dept_name) references course(dept_name) on delete cascade,
foreign key (course_id) references course(course_id) on delete cascade
);

create table teaches(
instructor_id int,
course_id varchar(6),
primary key (instructor_id, course_id),
foreign key (instructor_id) references instructor(instructor_id) on delete cascade,
foreign key (course_id) references course(course_id) on delete cascade
);

create table takes(
student_id int,
course_id varchar(6),
primary key (student_id, course_id),
foreign key (student_id) references student(student_id) on delete cascade,
foreign key (course_id) references course(course_id) on delete cascade
);
```

adminPSM.sql

```
-- Drop existing --
drop procedure if exists add_question_choice;
drop procedure if exists add_question;
drop procedure if exists assign_teacher;
drop procedure if exists enroll_student;
drop procedure if exists create_course;
drop procedure if exists create_student;
drop procedure if exists create_instructor;

-- Create Procedures --
delimiter //

create procedure create_instructor(
in in_name varchar(50)
)
begin
    -- Generate random password --
       set @temp_password = sha2(UUID(), 256);

       -- Insert new instructor --
       insert into instructor(name)
       values (in_name);

       select in_name into @name;
       set @instructor_id = last_insert_id();
       set @username = concat(@name, @instructor_id);

       -- Create account --
       insert into mtu_account(username, password, account_type, instructor_id)
       values (@username, @temp_password, 'instructor', @instructor_id);
end//

create procedure create_student(
in in_name varchar(50)
)
begin
    -- Generate random password --
       set @temp_password = sha2(UUID(), 256);

       -- Insert new student --
       insert into student(name)
       values (in_name);

    set @student_id = last_insert_id();
    set @username = concat(in_name, @student_id);

       -- Create account --
       insert into mtu_account(username, password, account_type, student_id)
       values (@username, @temp_password, 'student', @student_id);
end//

create procedure create_course(
in course_id varchar(6),
in course_name varchar(50),
in dept_name varchar(3)
)
begin
    set @existing_dept = (select name from department where name = dept_name);
```

```
       if @existing_dept is null then
        insert into department(name) values (dept_name);
    end if;

    insert into course (course_id, name, dept_name)
      values (course_id, course_name, dept_name);
end//

create procedure assign_teacher(
in i_id int,
in c_id varchar(6)
)
begin
    declare existing_count int;

       select count(*) into existing_count
       from teaches
       where instructor_id = i_id and course_id = c_id;

     -- teacher already assigned
    if existing_count > 0 then
        signal sqlstate '45000'
        set message_text = 'Error: Teacher is already assigned to course';
    end if;

       -- teacher not yet assigned
       insert into teaches (instructor_id, course_id)
    values (i_id, c_id);
end//

create procedure enroll_student(
in s_id int,
in c_id varchar(6)
)
begin
    declare existing_count int;

       select count(*) into existing_count
       from takes
       where student_id = s_id and course_id = c_id;

       -- student not yet inserted
       if existing_count = 0 then
        insert into takes (student_id, course_id)
        values (s_id, c_id);

     -- student already assigned
    elseif existing_count = 1 then
        signal sqlstate '45000'
        set message_text = 'Error: Student is already enrolled in course';

    -- more than one student returned
    else
        signal sqlstate '45000'
       set message_text = 'Error: More than one row exists for student/course
combination.';
    end if;
end//

create procedure add_question(
in section varchar(10),
```

```
in qid varchar(3),
in description varchar(1000),
in type enum('multiple-choice', 'short response'),
in department varchar(3),
in course_id varchar(6)
)
begin
    if section <> 'department' then
       set department = null;
       end if;

       if section in ('university', 'department') then
       set course_id = null;
       end if;

    insert into question (question_category, question_display, question_type,
question_text, dept_name, course_id)
       values (section, qid, type, description, department, course_id);
end//

create procedure add_question_choice(
in section varchar(10),
in qid_display varchar(3),
in choiceid varchar(3),
in description varchar(1000),
in department varchar(3),
in course_id varchar(6)
)
begin
    declare qid int;

       if section <> 'department' then
       set department = null;
       end if;

       if section in ('university', 'department') then
       set course_id = null;
       end if;

       select question_id into qid
       from question
       where
        question_display = qid_display
        and question_category = section
        and (dept_name = department or (dept_name is null and department is null))
        and (course_id = course_id or (course_id is null and course_id is null))
       limit 1;

    -- question exists
       if qid is not null then
       insert into multiple_choice (question_category, question_id, choice_display,
option_text, dept_name, course_id)
       values (section, qid, choiceid, description, department, course_id);
    -- qustion doesn't exist
       else
       signal sqlstate '45000'
       set message_text = 'No matching question found.';
       end if;
end//

delimiter ;
```

insertData.sql

```
-- Drop existing --
set foreign_key_checks = 0;

truncate table takes;
truncate table teaches;
truncate table response;
truncate table multiple_choice;
truncate table question;
truncate table course;
truncate table mtu_account;
truncate table instructor;
truncate table student;
truncate table department;

set foreign_key_checks = 1;

-- Creating Database
-------------------------------------------------------------------------------
-----
-- Instructors --
call create_instructor('Alice');
call create_instructor('Aaron');
call create_instructor('Abel');
call create_instructor('Al');
-- Students --
call create_student('Bob');
call create_student('Ben');
call create_student('Brook');
call create_student('Brian');
call create_student('Bethany');
-- Course --
call create_course( 'CS1142', 'Programming at Hardware Software Interface', 'CS');
call create_course( 'CS2311', 'Discrete Structures', 'CS');
call create_course( 'CS2321', 'Data Structures', 'CS');
call create_course( 'MA3425', 'Imaginary Algebra', 'MA');
-- Teaches --
call assign_teacher((select instructor_id from instructor where name = 'Alice' limit
1), 'CS2311');
call assign_teacher((select instructor_id from instructor where name = 'Aaron' limit
1), 'CS1142');
call assign_teacher((select instructor_id from instructor where name = 'Al' limit 1),
'CS2321');
call assign_teacher((select instructor_id from instructor where name = 'Abel' limit 1),
'MA3425');
-- Takes --
-- CS2311
call enroll_student((select student_id from student where name = 'Bob' limit 1),
'CS2311');
call enroll_student((select student_id from student where name = 'Ben' limit 1),
'CS2311');
call enroll_student((select student_id from student where name = 'Brook' limit 1),
'CS2311');
-- CS1142
call enroll_student((select student_id from student where name = 'Bob' limit 1),
'CS1142');
call enroll_student((select student_id from student where name = 'Ben' limit 1),
'CS1142');
call enroll_student((select student_id from student where name = 'Brian' limit 1),
'CS1142');
```

```
call enroll_student((select student_id from student where name = 'Bethany' limit 1),
'CS1142');
-- CS2321
call enroll_student((select student_id from student where name = 'Bob' limit 1),
'CS2321');
call enroll_student((select student_id from student where name = 'Ben' limit 1),
'CS2321');
call enroll_student((select student_id from student where name = 'Brook' limit 1),
'CS2321');
call enroll_student((select student_id from student where name = 'Brian' limit 1),
'CS2321');
call enroll_student((select student_id from student where name = 'Bethany' limit 1),
'CS2321');
-- MA3425
call enroll_student((select student_id from student where name = 'Brook' limit 1),
'MA3425');
call enroll_student((select student_id from student where name = 'Brian' limit 1),
'MA3425');
call enroll_student((select student_id from student where name = 'Bethany' limit 1),
'MA3425');

-- Inserting Questions
-------------------------------------------------------------------------------------
-----
-- UNIVERSITY --
-- Q1
call add_question('university', 'Q1', 'The pace of this course', 'multiple-choice',
null, null);
call add_question_choice('university', 'Q1', 'A', 'is too slow', null, null);
call add_question_choice('university', 'Q1', 'B', 'is just right', null, null);
call add_question_choice('university', 'Q1', 'C', 'is too fast', null, null);
call add_question_choice('university', 'Q1', 'D', 'I dont know', null, null);
-- Q2
call add_question('university', 'Q2', 'The feedback from homework assignment grading',
'multiple-choice', null, null);
call add_question_choice('university', 'Q2', 'A', 'Too few', null, null);
call add_question_choice('university', 'Q2', 'B', 'Sufficient', null, null);
call add_question_choice('university', 'Q2', 'C', 'I dont know', null, null);
-- Q3
call add_question('university', 'Q3', 'Anything you like about the teaching of this
course? ', 'short response', null, null);
-- Q4
call add_question('university', 'Q4', 'The amount of homework assigned',
'multiple-choice', null, null);
call add_question_choice('university', 'Q4', 'A', 'Not enough', null, null);
call add_question_choice('university', 'Q4', 'B', 'Just enough', null, null);
call add_question_choice('university', 'Q4', 'C', 'A bit too much', null, null);
call add_question_choice('university', 'Q4', 'D', 'Way too much', null, null);
call add_question_choice('university', 'Q4', 'E', 'Indifferent', null, null);

-- CS DEPARTMENT --
-- Q1
call add_question('department', 'Q1', 'Do you use the lab for this course?',
'multiple-choice', 'CS', null);
call add_question_choice('department', 'Q1', 'A', 'Not at all', 'CS', null);
call add_question_choice('department', 'Q1', 'B', 'Occasionally', 'CS', null);
call add_question_choice('department', 'Q1', 'C', 'Sometimes', 'CS', null);
call add_question_choice('department', 'Q1', 'D', 'All the time', 'CS', null);
-- Q2
call add_question('department', 'Q2', 'What operating system do you use for work
related to this course?', 'multiple-choice', 'CS', null);
```

```
call add_question_choice('department', 'Q2', 'A', 'Mac', 'CS', null);
call add_question_choice('department', 'Q2', 'B', 'Windows', 'CS', null);
call add_question_choice('department', 'Q2', 'C', 'Linux', 'CS', null);

-- MA DEPARTMENT --
-- Q1
call add_question('department', 'Q1', 'Would you benefit from additional Math Learning
Center walk-in hours?', 'multiple-choice', 'MA', null);
call add_question_choice('department', 'Q1', 'A', 'Yes', 'MA', null);
call add_question_choice('department', 'Q1', 'B', 'No', 'MA', null);
call add_question_choice('department', 'Q1', 'C', 'Indifferent', 'MA', null);
-- Q2
call add_question('department', 'Q2', 'Do you use the lab for this course?',
'multiple-choice', 'MA', null);
call add_question_choice('department', 'Q2', 'A', 'Yes', 'MA', null);
call add_question_choice('department', 'Q2', 'B', 'No', 'MA', null);

-- COURSES --
-- CS1142 --
-- Q1
call add_question('course', 'Q1', 'What programming languages are you comfortable
with?', 'short response', null, 'CS1142');
-- Q2
call add_question('course', 'Q2', 'How would you rate your current understanding of
basic computer architecture and operating systems?', 'multiple-choice', null,
'CS1142');
call add_question_choice('course', 'Q2', 'A', 'No knowledge', null, 'CS1142');
call add_question_choice('course', 'Q2', 'B', 'Beginner', null, 'CS1142');
call add_question_choice('course', 'Q2', 'C', 'Intermediate', null, 'CS1142');
call add_question_choice('course', 'Q2', 'D', 'Expert', null, 'CS1142');

-- CS2321 --
-- Q1
call add_question('course', 'Q1', 'Do you use the text book?', 'multiple-choice', null,
'CS2321');
call add_question_choice('course', 'Q1', 'A', 'Not at all', null, 'CS2321');
call add_question_choice('course', 'Q1', 'B', 'Occasionally', null, 'CS2321');
call add_question_choice('course', 'Q1', 'C', 'Often', null, 'CS2321');

-- Inserting Responses
-------------------------------------------------------------------------------------
-----
set foreign_key_checks = 0;
insert into response(survey_id, question_id, question_category, question_display,
response_text, dept_name, course_id)
values

-- CS2311 ----------------------------------
-- university --
-- Q1
      (1, 1, 'university', 'Q1', 'A', 'CS', 'CS2311'),
      (2, 1, 'university', 'Q1', 'A', 'CS', 'CS2311'),
-- Q2
      (1, 2, 'university', 'Q2', 'A', 'CS', 'CS2311'),
      (2, 2, 'university', 'Q2', 'B', 'CS', 'CS2311'),
-- Q3
      (1, 3, 'university', 'Q3', '', 'CS', 'CS2311'),
      (2, 3, 'university', 'Q3', 'everything', 'CS', 'CS2311'),
-- Q4
      (1, 4, 'university', 'Q4', 'C', 'CS', 'CS2311'),
      (2, 4, 'university', 'Q4', 'D', 'CS', 'CS2311'),
```

```
-- department --
-- Q1
      (1, 5, 'department', 'Q1', 'A', 'CS', 'CS2311'),
      (2, 5, 'department', 'Q1', 'A', 'CS', 'CS2311'),
-- Q2
      (1, 6, 'department', 'Q2', 'A', 'CS', 'CS2311'),
      (2, 6, 'department', 'Q2', 'B', 'CS', 'CS2311'),

-- CS1142 ----------------------------------
-- university --
-- Q1
      (3, 1, 'university', 'Q1', 'A', 'CS', 'CS1142'),
      (4, 1, 'university', 'Q1', 'A', 'CS', 'CS1142'),
      (5, 1, 'university', 'Q1', 'A', 'CS', 'CS1142'),
-- Q2
      (3, 2, 'university', 'Q2', 'A', 'CS', 'CS1142'),
      (4, 2, 'university', 'Q2', 'B', 'CS', 'CS1142'),
      (5, 2, 'university', 'Q2', 'B', 'CS', 'CS1142'),
-- Q3
      (3, 3, 'university', 'Q3', ' ', 'CS', 'CS1142'),
      (4, 3, 'university', 'Q3', 'everything', 'CS', 'CS1142'),
      (5, 3, 'university', 'Q3', 'partial credit', 'CS', 'CS1142'),
-- Q4
      (3, 4, 'university', 'Q4', 'B', 'CS', 'CS1142'),
      (4, 4, 'university', 'Q4', 'A', 'CS', 'CS1142'),
      (5, 4, 'university', 'Q4', 'D', 'CS', 'CS1142'),
-- department --
-- Q1
      (3, 5, 'department', 'Q1', 'A', 'CS', 'CS1142'),
      (4, 5, 'department', 'Q1', 'A', 'CS', 'CS1142'),
      (5, 5, 'department', 'Q1', 'C', 'CS', 'CS1142'),
-- Q2
      (3, 6, 'department', 'Q2', 'B', 'CS', 'CS1142'),
      (4, 6, 'department', 'Q2', 'B', 'CS', 'CS1142'),
      (5, 6, 'department', 'Q2', 'B', 'CS', 'CS1142'),
-- course --
-- Q1
      (3, 9, 'course', 'Q1', 'Python', 'CS', 'CS1142'),
      (4, 9, 'course', 'Q1', 'Java', 'CS', 'CS1142'),
      (5, 9, 'course', 'Q1', 'Java, C++', 'CS', 'CS1142'),
-- Q2
      (3, 10, 'course', 'Q2', 'B', 'CS', 'CS1142'),
      (4, 10, 'course', 'Q2', 'C', 'CS', 'CS1142'),
      (5, 10, 'course', 'Q2', 'D', 'CS', 'CS1142'),

-- CS2321 ----------------------------------
-- university --
-- Q1
      (6, 1, 'university', 'Q1', 'A', 'CS', 'CS2321'),
      (7, 1, 'university', 'Q1', 'A', 'CS', 'CS2321'),
      (8, 1, 'university', 'Q1', 'A', 'CS', 'CS2321'),
      (9, 1, 'university', 'Q1', 'A', 'CS', 'CS2321'),
      (10, 1, 'university', 'Q1', 'A', 'CS', 'CS2321'),
-- Q2
      (6, 2, 'university', 'Q2', 'A', 'CS', 'CS2321'),
      (7, 2, 'university', 'Q2', 'B', 'CS', 'CS2321'),
      (8, 2, 'university', 'Q2', 'B', 'CS', 'CS2321'),
      (9, 2, 'university', 'Q2', 'C', 'CS', 'CS2321'),
      (10, 2, 'university', 'Q2', 'C', 'CS', 'CS2321'),
-- Q3
      (6, 3, 'university', 'Q3', ' ', 'CS', 'CS2321'),
```

```
      (7, 3, 'university', 'Q3', 'everything', 'CS', 'CS2321'),
      (8, 3, 'university', 'Q3', 'programming', 'CS', 'CS2321'),
      (9, 3, 'university', 'Q3', ' ', 'CS', 'CS2321'),
      (10, 3, 'university', 'Q3', 'SAM sessions', 'CS', 'CS2321'),
-- Q4
      (6, 4, 'university', 'Q4', 'B', 'CS', 'CS2321'),
      (7, 4, 'university', 'Q4', 'B', 'CS', 'CS2321'),
      (8, 4, 'university', 'Q4', 'B', 'CS', 'CS2321'),
      (9, 4, 'university', 'Q4', 'B', 'CS', 'CS2321'),
      (10, 4, 'university', 'Q4', 'B', 'CS', 'CS2321'),
-- department --
-- Q1
      (6, 5, 'department', 'Q1', 'A', 'CS', 'CS2321'),
      (7, 5, 'department', 'Q1', 'A', 'CS', 'CS2321'),
      (8, 5, 'department', 'Q1', 'A', 'CS', 'CS2321'),
      (9, 5, 'department', 'Q1', 'A', 'CS', 'CS2321'),
      (10, 5, 'department', 'Q1', 'A', 'CS', 'CS2321'),
-- Q2
      (6, 6, 'department', 'Q2', 'A', 'CS', 'CS2321'),
      (7, 6, 'department', 'Q2', 'B', 'CS', 'CS2321'),
      (8, 6, 'department', 'Q2', 'A', 'CS', 'CS2321'),
      (9, 6, 'department', 'Q2', 'B', 'CS', 'CS2321'),
      (10, 6, 'department', 'Q2', 'B', 'CS', 'CS2321'),
-- course --
-- Q1
      (6, 11, 'course', 'Q1', 'A', 'CS', 'CS2321'),
      (7, 11, 'course', 'Q1', 'C', 'CS', 'CS2321'),
      (8, 11, 'course', 'Q1', 'C', 'CS', 'CS2321'),
      (9, 11, 'course', 'Q1', 'B', 'CS', 'CS2321'),
      (10, 11, 'course', 'Q1', 'C', 'CS', 'CS2321'),

-- MA3425 ----------------------------------
-- university --
-- Q1
      (11, 1, 'university', 'Q1', 'A', 'MA', 'MA3425'),
      (12, 1, 'university', 'Q1', 'A', 'MA', 'MA3425'),
      (13, 1, 'university', 'Q1', 'A', 'MA', 'MA3425'),
-- Q2
      (11, 2, 'university', 'Q2', 'A', 'MA', 'MA3425'),
      (12, 12, 'university', 'Q2', 'B', 'MA', 'MA3425'),
      (13, 2, 'university', 'Q2', 'B', 'MA', 'MA3425'),
-- Q3
      (11, 3, 'university', 'Q3', 'not really', 'MA', 'MA3425'),
      (12, 13, 'university', 'Q3', 'nothing', 'MA', 'MA3425'),
      (13, 3, 'university', 'Q3', 'lectures', 'MA', 'MA3425'),
-- Q4
      (11, 4, 'university', 'Q4', 'D', 'MA', 'MA3425'),
      (12, 14, 'university', 'Q4', 'D', 'MA', 'MA3425'),
      (13, 4, 'university', 'Q4', 'B', 'MA', 'MA3425'),
-- department --
-- Q1
      (11, 7, 'department', 'Q1', 'A', 'MA', 'MA3425'),
      (12, 17, 'department', 'Q1', 'A', 'MA', 'MA3425'),
      (13, 7, 'department', 'Q1', 'A', 'MA', 'MA3425'),
-- Q2
      (11, 8, 'department', 'Q2', 'A', 'MA', 'MA3425'),
      (12, 18, 'department', 'Q2', 'B', 'MA', 'MA3425'),
      (13, 8, 'department', 'Q2', 'A', 'MA', 'MA3425');

set foreign_key_checks = 1;
```

```
-- Displaying Information
-------------------------------------------------------------------------------------------
---
select * from department;
```

name
CS
MA

```
select * from student;
```

student_id	name
1	Bob
2	Ben
3	Brook
4	Brian
5	Bethany

```
select * from instructor;
```

instructor_id	name
1	Alice
2	Aaron
3	Abel
4	Al

```
select * from mtu_account;
```

account_id	username	password	account_type	instructor_id	student_id
1	Alice1	0c63ac897c1291002544824c4ab73ffca2c37c7345fec707f431d2e62b47c394	instructor	1	
2	Aaron2	5b50a5c9b93ae3d15710fc57d63da34e88375c720ceb8e3d854021360487256b	instructor	2	
3	Abel3	6f88963f320f35a3fd113449085fb86490673f77c9c67003a1dc82021409dbf4	instructor	3	
4	Al4	fc84aca3625ec26bca68a9cc78d5df7f26a4525905a840c59e965b7134829b75	instructor	4	
5	Bob1	6dc80f645559b27cc14f61cc21a027fed0492cef974662d082131a8b510b317c	student		1
6	Ben2	1819e778a7d97ae268755b531036c4cf3a231720354d441f4dd32ddadb7cd956	student		2
7	Brook3	2035e57ef0e477eed3c2e64e79bab335e9a1de1525e70725cc825d18fc58962b	student		3
8	Brian4	8aef77e35364386d8bfee5710752e9e8540269297a7dea98d2fd90f32e367beb	student		4
9	Bethany5	9031c33eddb54c30ea6befd64c7cd0e27bec0d55e1dcb2b9dca5b72bc651f481	student		5

```
select * from course;
```

course_id	name	dept_name
CS1142	Programming at Hardware Software Interface	CS
CS2311	Discrete Structures	CS
CS2321	Data Structures	CS
MA3425	Imaginary Algebra	MA

```
select * from question;
```

question_id	question_category	question_display	question_text	dept_name	dept_name	course_id
1	university	Q1	multiple-choice	The pace of this course		
2	university	Q2	multiple-choice	The feedback from homework assignment grading		
3	university	Q3	short response	Anything you like about the teaching of this course?		
4	university	Q4	multiple-choice	The amount of homework assigned		
5	department	Q1	multiple-choice	Do you use the lab for this course?	CS	
6	department	Q2	multiple-choice	What operating system do you use for work related to this course?	CS	
7	department	Q1	multiple-choice	Would you benefit from additional Math Learning Center walk-in hours?	MA	
8	department	Q2	multiple-choice	Do you use the lab for this course?	MA	
9	course	Q1	short response	What programming languages are you comfortable with?		CS1142
10	course	Q2	multiple-choice	How would you rate your current understanding of basic computer architecture and operating systems?		CS1142
11	course	Q1	multiple-choice	Do you use the text book?		CS2321

```
select * from multiple_choice;
```

question_id	question_category	choice_display	option_text	dept_name	course_id
1	university	A	is too slow		
1	university	B	is just right		
1	university	C	is too fast		
1	university	D	I dont know		
2	university	A	Too few		
2	university	B	Sufficient		
2	university	C	I dont know		
4	university	A	Not enough		
4	university	B	Just enough		
4	university	C	A bit too much		
4	university	D	Way too much		
4	university	E	Indifferent		
5	department	A	Not at all	CS	
5	department	B	Occasionally	CS	
5	department	C	Sometimes	CS	
5	department	D	All the time	CS	
6	department	A	Mac	CS	
6	department	B	Windows	CS	
6	department	C	Linux	CS	
7	department	A	Yes	MA	
7	department	B	No	MA	
7	department	C	Indifferent	MA	
8	department	A	Yes	MA	
8	department	B	No	MA	
9	course	A	Not at all		CS2321
9	course	B	Occasionally		CS2321
9	course	C	Often		CS2321
10	course	A	No knowledge		CS1142
10	course	B	Beginner		CS1142
10	course	C	Intermediate		CS1142
10	course	D	Expert		CS1142

```
select * from response order by question_category desc, question_display asc, dept_name
asc;
```

response_id	survey_id	question_id	question_category	question_display	response_text	dept_name	course_id
1	1	1	university	Q1	A	CS	CS2311
2	2	1	university	Q1	A	CS	CS2311
3	1	2	university	Q2	A	CS	CS2311
4	2	2	university	Q2	B	CS	CS2311
5	1	3	university	Q3		CS	CS2311
6	2	3	university	Q3	everything	CS	CS2311
7	1	4	university	Q4	C	CS	CS2311
8	2	4	university	Q4	D	CS	CS2311
9	1	5	department	Q1	A	CS	CS2311
10	2	5	department	Q1	A	CS	CS2311
11	1	6	department	Q2	A	CS	CS2311
12	2	6	department	Q2	B	CS	CS2311
13	3	1	university	Q1	A	CS	CS1142
14	4	1	university	Q1	A	CS	CS1142
15	5	1	university	Q1	A	CS	CS1142
16	3	2	university	Q2	A	CS	CS1142
17	4	2	university	Q2	B	CS	CS1142
18	5	2	university	Q2	B	CS	CS1142
19	3	3	university	Q3		CS	CS1142
20	4	3	university	Q3	everything	CS	CS1142
21	5	3	university	Q3	partial credit	CS	CS1142
22	3	4	university	Q4	B	CS	CS1142
23	4	4	university	Q4	A	CS	CS1142
24	5	4	university	Q4	D	CS	CS1142
25	3	5	department	Q1	A	CS	CS1142
26	4	5	department	Q1	A	CS	CS1142
27	5	5	department	Q1	C	CS	CS1142
28	3	6	department	Q2	B	CS	CS1142
29	4	6	department	Q2	B	CS	CS1142
30	5	6	department	Q2	B	CS	CS1142
31	3	9	course	Q1	Python	CS	CS1142
32	4	9	course	Q1	Java	CS	CS1142
33	5	9	course	Q1	Java, C++	CS	CS1142
34	3	10	course	Q2	B	CS	CS1142
35	4	10	course	Q2	C	CS	CS1142

36	5	10	course	Q2	D	CS	CS1142
37	6	1	university	Q1	A	CS	CS2321
38	7	1	university	Q1	A	CS	CS2321
39	8	1	university	Q1	A	CS	CS2321
40	9	1	university	Q1	A	CS	CS2321
41	10	1	university	Q1	A	CS	CS2321
42	6	2	university	Q2	A	CS	CS2321
43	7	2	university	Q2	B	CS	CS2321
44	8	2	university	Q2	B	CS	CS2321
45	9	2	university	Q2	C	CS	CS2321
46	10	2	university	Q2	C	CS	CS2321
47	6	3	university	Q3		CS	CS2321
48	7	3	university	Q3	everything	CS	CS2321
49	8	3	university	Q3	programmi ng	CS	CS2321
50	9	3	university	Q3		CS	CS2321
51	10	3	university	Q3	SAM sessions	CS	CS2321
52	6	4	university	Q4	B	CS	CS2321
53	7	4	university	Q4	B	CS	CS2321
54	8	4	university	Q4	B	CS	CS2321
55	9	4	university	Q4	B	CS	CS2321
56	10	4	university	Q4	B	CS	CS2321
57	6	5	department	Q1	A	CS	CS2321
58	7	5	department	Q1	A	CS	CS2321
59	8	5	department	Q1	A	CS	CS2321
60	9	5	department	Q1	A	CS	CS2321
61	10	5	department	Q1	A	CS	CS2321
62	6	6	department	Q2	A	CS	CS2321
63	7	6	department	Q2	B	CS	CS2321
64	8	6	department	Q2	A	CS	CS2321
65	9	6	department	Q2	B	CS	CS2321
66	10	6	department	Q2	B	CS	CS2321
67	6	11	course	Q1	A	CS	CS2321
68	7	11	course	Q1	C	CS	CS2321
69	8	11	course	Q1	C	CS	CS2321
70	9	11	course	Q1	B	CS	CS2321
71	10	11	course	Q1	C	CS	CS2321
72	11	1	university	Q1	A	MA	MA342 5
73	12	1	university	Q1	A	MA	MA342

							5
74	13	1	university	Q1	A	MA	MA3425
75	11	2	university	Q2	A	MA	MA3425
76	12	12	university	Q2	B	MA	MA3425
77	13	2	university	Q2	B	MA	MA3425
78	11	3	university	Q3	not really	MA	MA3425
79	12	13	university	Q3	nothing	MA	MA3425
80	13	3	university	Q3	lectures	MA	MA3425
81	11	4	university	Q4	D	MA	MA3425
82	12	14	university	Q4	D	MA	MA3425
83	13	4	university	Q4	B	MA	MA3425
84	11	7	department	Q1	A	MA	MA3425
85	12	17	department	Q1	A	MA	MA3425
86	13	7	department	Q1	A	MA	MA3425
87	11	8	department	Q2	A	MA	MA3425
88	12	18	department	Q2	B	MA	MA3425
89	13	8	department	Q2	A	MA	MA3425

```
select * from teaches;
```

instructor_id	course_id
2	CS1142
1	CS2311
4	CS2321
3	MA3425

```
select * from takes;
```

student_id	course_id
1	CS1142
2	CS1142
4	CS1142
5	CS1142
1	CS2311
2	CS2311
3	CS2311
1	CS2321
2	CS2321
3	CS2321
4	CS2321
5	CS2321
3	MA3425
4	MA3425
5	MA3425

surveyResult.sql

```
-------------------------------------------------------------------------
-- Course Statistics
-------------------------------------------------------------------------
-- Course Name --
select 'Course Name: CS2321' as '';

-- Instructor Name --
select concat('Instructor Name: ', i.name) as ''
from teaches as t left outer join instructor as i on t.instructor_id = i.instructor_id
where t.course_id = 'CS2321'
limit 1;

-- Response Rate --
select
  ('Response Rate: ') as '',
  concat(total_responses.total, '/', total_students.total * total_questions.total) as
'',
  concat('(', round(100 * total_responses.total / (total_students.total *
total_questions.total), 2),'%)') as ''
from
  (select count(response_id) as total from response where course_id = 'CS2321') as
total_responses,
  (select count(distinct student_id) as total from takes where course_id = 'CS2321') as
total_students,
  (select count(question_id) as total from question where course_id = 'CS2321') as
total_questions;

-- University Questions
-------------------------------------------------------------------------------------------
---
-- Q1 --
-- question info --
select question_display, question_text
from question
where question_display = 'Q1' and question_category = 'university' and course_id is
null and dept_name is null;
-- question stats
select m.option_text as Response_Option,
    coalesce(sum(case when r.response_text is not null then 1 else 0 end), 0) as
Frequency,
       (round(100 * (coalesce(sum(case when r.response_text is not null then 1 else 0
end), 0) /
       (select count(*) from takes where course_id = 'CS2321')),2)) as Percent
from multiple_choice m
    join question q on q.question_id = m.question_id
    left join response r on q.question_id = r.question_id
        and m.choice_display = r.response_text
        and r.course_id = 'CS2321'
where q.question_type = 'multiple-choice'
    and q.question_display = 'Q1'
    and q.question_category = 'university'
group by q.question_id, q.question_category, q.question_display, m.choice_display
order by q.question_category desc, q.question_id asc, m.choice_display asc;

-- Q2 --
-- question info --
select question_display, question_text
from question
```

```
where question_display = 'Q2' and question_category = 'university' and course_id is
null and dept_name is null;
-- question stats
select m.option_text as Response_Option,
    coalesce(sum(case when r.response_text is not null then 1 else 0 end), 0) as
Frequency,
       (round(100 * (coalesce(sum(case when r.response_text is not null then 1 else 0
end), 0) /
       (select count(*) from takes where course_id = 'CS2321')),2)) as Percent
from multiple_choice m
    join question q on q.question_id = m.question_id
    left join response r on q.question_id = r.question_id
        and m.choice_display = r.response_text
        and r.course_id = 'CS2321'
where q.question_type = 'multiple-choice'
    and q.question_display = 'Q2'
    and q.question_category = 'university'
group by q.question_id, q.question_category, q.question_display, m.choice_display
order by q.question_category desc, q.question_id asc, m.choice_display asc;

-- Q3 --
-- question info --
select question_display, question_text
from question
where question_display = 'Q3' and question_category = 'university' and course_id is
null and dept_name is null;
-- question stats
select
    coalesce(sum(case when r.response_text is not null then 1 else 0 end), 0) as
Frequency,
       (round(100 * (coalesce(sum(case when r.response_text is not null then 1 else 0
end), 0) /
       (select count(*) from takes where course_id = 'CS2321')),2)) as Percent
from multiple_choice m
    join question q on q.question_id = m.question_id
    left join response r on q.question_id = r.question_id
        and r.course_id = 'CS2321'
where q.question_type = 'short response'
    and q.question_display = 'Q2'
    and q.question_category = 'university'
group by q.question_id, q.question_category, q.question_display
order by q.question_category desc, q.question_id asc;

-- Q4 --
-- question info --
select question_display, question_text
from question
where question_display = 'Q4' and question_category = 'university' and course_id is
null and dept_name is null;
-- question stats
select m.option_text as Response_Option,
    coalesce(sum(case when r.response_text is not null then 1 else 0 end), 0) as
Frequency,
       (round(100 * (coalesce(sum(case when r.response_text is not null then 1 else 0
end), 0) /
       (select count(*) from takes where course_id = 'CS2321')),2)) as Percent
from multiple_choice m
    join question q on q.question_id = m.question_id
    left join response r on q.question_id = r.question_id
        and m.choice_display = r.response_text
        and r.course_id = 'CS2321'
```

```
where q.question_type = 'multiple-choice'
    and q.question_display = 'Q4'
    and q.question_category = 'university'
group by q.question_id, q.question_category, q.question_display, m.choice_display
order by q.question_category desc, q.question_id asc, m.choice_display asc;

-- Department Questions
-------------------------------------------------------------------------------------
---
-- Q1 --
-- question info --
select question_display, question_text
from question
where question_display = 'Q1' and question_category = 'department' and course_id is
null and dept_name = ‘CS’;
-- question stats
select m.option_text as response_option,
       coalesce(sum(case when r.response_text is not null then 1 else 0 end), 0) as
frequency,
       (round(100 * (coalesce(sum(case when r.response_text is not null then 1 else 0
end), 0) /
       (select count(*) from takes where course_id = 'CS2321')),2)) as percent
from multiple_choice m
       join question q on q.question_id = m.question_id
       left join response r on q.question_id = r.question_id
       and m.choice_display = r.response_text
       and r.course_id = 'CS2321'
where q.question_type = 'multiple-choice'
       and q.question_display = 'Q1'
       and q.question_category = 'department'
       and m.dept_name = 'CS' -- filter multiple_choice based on the cs department
       and (r.dept_name = 'CS' or r.dept_name is null) -- filter responses based on the
cs department, including nulls
group by q.question_id, q.question_category, q.question_display, m.choice_display
order by q.question_category desc, q.question_id asc, m.choice_display asc;

-- Q2 --
-- question info --
select question_display, question_text
from question
where question_display = 'Q2' and question_category = 'department' and course_id is
null and dept_name = ‘CS’;
-- question stats
select m.option_text as response_option,
       coalesce(sum(case when r.response_text is not null then 1 else 0 end), 0) as
frequency,
       (round(100 * (coalesce(sum(case when r.response_text is not null then 1 else 0
end), 0) /
       (select count(*) from takes where course_id = 'CS2321')),2)) as percent
from multiple_choice m
       join question q on q.question_id = m.question_id
       left join response r on q.question_id = r.question_id
       and m.choice_display = r.response_text
       and r.course_id = 'CS2321'
where q.question_type = 'multiple-choice'
       and q.question_display = 'Q2'
       and q.question_category = 'department'
       and m.dept_name = 'CS' -- filter multiple_choice based on the cs department
       and (r.dept_name = 'CS' or r.dept_name is null) -- filter responses based on the
cs department, including nulls
group by q.question_id, q.question_category, q.question_display, m.choice_display
```

```
order by q.question_category desc, q.question_id asc, m.choice_display asc;

-- Course Questions
```

Output:

Course Name: CS2321
Instructor Name: Al

'Q1', 'The pace of this course'

Response_Option	Frequency	Percent
is too slow	5	100.00
is too fast	0	0.00
is just right	0	0.00
I dont know	0	0.00

'Q2', 'The feedback from homework assignment grading'

Response_Option	Frequency	Percent
Too few	1	20.00
Sufficient	2	40.00
I dont know	2	40.00

Q3 Anything you like about the teaching of this course?

Q4 The amount of homework assigned

Response_Option	Frequency	Percent
Not enough	0	0.00
Just enough	5	100.00
A bit too much	0	0.00
Way too much	0	0.00
Indifferent	0	0.00

'Q1', 'Do you use the lab for this course?'

Response_Option	Frequency	Percent
Not at all	5	100.00
Occasionally	0	0.00
Sometimes	0	0.00
All the time	0	0.00

'Q2', 'What operating system do you use for work related to this course?'

Response_Option	Frequency	Percent
Mac	2	40.00
Windows	3	60.00
Linux	0	0.00

```
-------------------------------------------------------------------------
-- Individual Responses
-------------------------------------------------------------------------
-- Survey 1 ---------------------------------------------------------------
-- Survey 1 --
select 'Survey 1' as '';
select 'University Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'university' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q1'
       and r.survey_id = 6;

-- Q2
select question_display, question_text from question where question_category =
'university' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q2'
       and r.survey_id = 6;

-- Q3
select question_display, question_text from question where question_category =
'university' and question_display = 'Q3';
select 'Answer: ' as '', r.response_text as ''
from response r
    join question q on r.question_id = q.question_id
where
       q.question_category = 'university'
       and q.question_display = 'Q3'
       and r.survey_id = 6;

-- Q4
select question_display, question_text from question where question_category =
'university' and question_display = 'Q4';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q4'
       and r.survey_id = 6;

select 'Department Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
```

```
'department' and dept_name = 'CS' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q1'
       and r.survey_id = 6;

-- Q2
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q2'
       and r.survey_id = 6;

-- Survey 2 ------------------------------------------------------------------
-- Survey 2 --
select 'Survey 2' as '';
select 'University Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'university' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q1'
       and r.survey_id = 7;

-- Q2
select question_display, question_text from question where question_category =
'university' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q2'
       and r.survey_id = 7;

-- Q3
select question_display, question_text from question where question_category =
'university' and question_display = 'Q3';
select 'Answer: ' as '', r.response_text as ''
from response r
    join question q on r.question_id = q.question_id
where
```

```
       q.question_category = 'university'
       and q.question_display = 'Q3'
       and r.survey_id = 7;

-- Q4
select question_display, question_text from question where question_category =
'university' and question_display = 'Q4';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q4'
       and r.survey_id = 7;

select 'Department Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q1'
       and r.survey_id = 7;

-- Q2
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q2'
       and r.survey_id = 7;

-- Survey 3 ------------------------------------------------------------------
-- Survey 3 --
select 'Survey 3' as '';
select 'University Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'university' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q1'
       and r.survey_id = 8;
```

```
-- Q2
select question_display, question_text from question where question_category =
'university' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q2'
       and r.survey_id = 8;

-- Q3
select question_display, question_text from question where question_category =
'university' and question_display = 'Q3';
select 'Answer: ' as '', r.response_text as ''
from response r
    join question q on r.question_id = q.question_id
where
       q.question_category = 'university'
       and q.question_display = 'Q3'
       and r.survey_id = 8;

-- Q4
select question_display, question_text from question where question_category =
'university' and question_display = 'Q4';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q4'
       and r.survey_id = 8;

select 'Department Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q1'
       and r.survey_id = 8;

-- Q2
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
```

```
       and q.question_display = 'Q2'
       and r.survey_id = 8;

-- Survey 4 ------------------------------------------------------------------
-- Survey 4 --
select 'Survey 4' as '';
select 'University Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'university' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q1'
       and r.survey_id = 9;

-- Q2
select question_display, question_text from question where question_category =
'university' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q2'
       and r.survey_id = 9;

-- Q3
select question_display, question_text from question where question_category =
'university' and question_display = 'Q3';
select 'Answer: ' as '', r.response_text as ''
from response r
    join question q on r.question_id = q.question_id
where
       q.question_category = 'university'
       and q.question_display = 'Q3'
       and r.survey_id = 9;

-- Q4
select question_display, question_text from question where question_category =
'university' and question_display = 'Q4';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q4'
       and r.survey_id = 9;

select 'Department Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q1';
```

```
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q1'
       and r.survey_id = 9;

-- Q2
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q2'
       and r.survey_id = 9;

-- Survey 5 ------------------------------------------------------------------
-- Survey 5 --
select 'Survey 5' as '';
select 'University Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'university' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q1'
       and r.survey_id = 10;

-- Q2
select question_display, question_text from question where question_category =
'university' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q2'
       and r.survey_id = 10;

-- Q3
select question_display, question_text from question where question_category =
'university' and question_display = 'Q3';
select 'Answer: ' as '', r.response_text as ''
from response r
    join question q on r.question_id = q.question_id
where
       q.question_category = 'university'
```

```
       and q.question_display = 'Q3'
       and r.survey_id = 10;

-- Q4
select question_display, question_text from question where question_category =
'university' and question_display = 'Q4';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'university'
       and q.question_display = 'Q4'
       and r.survey_id = 10;

select 'Department Questions' as '';
-- Q1
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q1';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q1'
       and r.survey_id = 10;

-- Q2
select question_display, question_text from question where question_category =
'department' and dept_name = 'CS' and question_display = 'Q2';
select 'Answer: ' as '', mc.option_text as ''
from response r
    join question q on r.question_id = q.question_id
    join multiple_choice mc on q.question_id = mc.question_id
        and r.response_text = mc.choice_display
where
       q.question_category = 'department'
       and q.question_display = 'Q2'
       and r.survey_id = 10;
```

Output:

Survey 1:

UNIVERSITY	
Q1	The pace of this course
Answer:	is too slow
Q2	The feedback from homework assignment grading
Answer:	Too few
Q3	Anything you like about the teaching of this course?
Answer:	
Q4	The amount of homework assigned
Answer:	Just enough
DEPARTMENT	
Q1	Do you use the lab for this course?
Answer:	Not at all
Q2	What operating system do you use for work related to this course?
Answer:	Mac
COURSE	
Q1	N/A
Answer:	N/A

Survey 2:

UNIVERSITY	
Q1	The pace of this course
Answer:	is too slow
Q2	The feedback from homework assignment grading
Answer:	Sufficient
Q3	Anything you like about the teaching of this course?
Answer:	everything
Q4	The amount of homework assigned
Answer:	Just enough
DEPARTMENT	
Q1	Do you use the lab for this course?
Answer:	Not at all
Q2	What operating system do you use for work related to this course?
Answer:	Windows
COURSE	
Q1	N/A
Answer:	N/A

Survey 3:

UNIVERSITY	
Q1	The pace of this course
Answer:	is too slow
Q2	The feedback from homework assignment grading
Answer:	Sufficient
Q3	Anything you like about the teaching of this course?
Answer:	programming
Q4	The amount of homework assigned
Answer:	Just enough
DEPARTMENT	
Q1	Do you use the lab for this course?
Answer:	Not at all
Q2	What operating system do you use for work related to this course?
Answer:	Mac
COURSE	
Q1	N/A
Answer:	N/A

Survey 4:

UNIVERSITY	
Q1	The pace of this course
Answer:	is too slow
Q2	The feedback from homework assignment grading
Answer:	I dont know
Q3	Anything you like about the teaching of this course?
Answer:	
Q4	The amount of homework assigned
Answer:	Just enough
DEPARTMENT	
Q1	Do you use the lab for this course?
Answer:	Not at all
Q2	What operating system do you use for work related to this course?
Answer:	Windows
COURSE	
Q1	N/A
Answer:	N/A

Survey 5:

UNIVERSITY	
Q1	The pace of this course
Answer:	is too slow
Q2	The feedback from homework assignment grading
Answer:	I dont know
Q3	Anything you like about the teaching of this course?
Answer:	SAM sessions
Q4	The amount of homework assigned
Answer:	Just enough
DEPARTMENT	
Q1	Do you use the lab for this course?
Answer:	Not at all
Q2	What operating system do you use for work related to this course?
Answer:	Windows
COURSE	
Q1	N/A
Answer:	N/A