Assignment

Course unit: COMP23111

Academic year: 2017-2018

Exercise number: EX03

Student ID: 10407315

School of Computer Science

2018.11.23

```
SQL> -- sends everything to <spoolfilename>
SQL> -- here you can set the SQL*Plus parameters, such as column width,
SQL> -- that will allow the script to produce readable answers in the spool
SQL> -- file
SQL>
SQL> -- [body]
SQL> start /opt/info/courses/COMP23111/create-University-tables.sql
SQL> create table classroom (
  2               building    varchar(15),
  3               room_number    varchar(7),
  4               capacity    numeric(4,0),
  5               primary key (building, room_number)
  6   );

Table created.

SQL>
SQL> create table department (
  2               dept_name         varchar(20),
  3               building      varchar(15),
  4               budget        numeric(12,2)
  5                       check (budget > 0),
  6               primary key (dept_name)
  7   );

Table created.

SQL>
SQL> create table course (
  2               course_id    varchar(8),
  3               title     varchar(50),
  4               dept_name         varchar(20),
  5               credits       numeric(2,0)
  6                           check (credits > 0),
  7               primary key (course_id),
  8               foreign key (dept_name)
  9                       references department
 10                       on delete set null
 11   );

Table created.

SQL>
SQL> create table instructor (
  2               ID            varchar(5),
  3               name          varchar(20) not null,
  4               dept_name         varchar(20),
  5               salary        numeric(8,2)
  6                       check (salary > 29000),
  7               primary key (ID),
  8               foreign key (dept_name)
  9                       references department
 10                       on delete set null
 11               );

Table created.

SQL>
SQL> create table section (
```

```
  2             course_id    varchar(8),
  3             sec_id       varchar(8),
  4             semester     varchar(6)
  5                     check (semester in ('Fall', 'Winter', 'Spring', 'Summer')),
  6             year     numeric(4,0)
  7                     check (year > 1701 and year < 2100),
  8             building     varchar(15),
  9             room_number      varchar(7),
 10             time_slot_id    varchar(4),
 11             primary key (course_id, sec_id, semester, year),
 12             foreign key (course_id)
 13                     references course
 14                     on delete cascade,
 15             foreign key (building, room_number)
 16                     references classroom
 17                     on delete set null
 18   );

Table created.

SQL>
SQL> create table teaches (
  2             ID             varchar(5),
  3             course_id    varchar(8),
  4             sec_id       varchar(8),
  5             semester     varchar(6),
  6             year     numeric(4,0),
  7             primary key (ID, course_id, sec_id, semester, year),
  8             foreign key (course_id,sec_id, semester, year)
  9                     references section
 10                     on delete cascade,
 11             foreign key (ID)
 12                     references instructor
 13                     on delete cascade
 14   );

Table created.

SQL>
SQL> create table student (
  2             ID             varchar(5),
  3             name           varchar(20) not null,
  4             dept_name          varchar(20),
  5             tot_cred       numeric(3,0)
  6                     check (tot_cred >= 0),
  7             primary key (ID),
  8             foreign key (dept_name)
  9                     references department
 10                     on delete set null
 11   );

Table created.

SQL>
SQL> create table takes (
  2             ID             varchar(5),
  3             course_id    varchar(8),
  4             sec_id       varchar(8),
  5             semester     varchar(6),
```

```
  6             year     numeric(4,0),
  7             grade          varchar(2),
  8             primary key (ID, course_id, sec_id, semester, year),
  9             foreign key (course_id,sec_id, semester, year)
 10                   references section
 11                   on delete cascade,
 12             foreign key (ID)
 13                   references student
 14                   on delete cascade
 15   );
```

Table created.

```
SQL>
SQL> create table advisor (
  2             s_ID    varchar(5),
  3             i_ID    varchar(5),
  4              primary key (s_ID),
  5              foreign key (i_ID)
  6                    references instructor (ID)
  7                    on delete set null,
  8              foreign key (s_ID)
  9                    references student (ID)
 10                   on delete cascade
 11              );
```

Table created.

```
SQL>
SQL> create table time_slot (
  2             time_slot_id    varchar(4),
  3             day      varchar(1),
  4             start_hr       numeric(2)
  5                    check (start_hr >= 0 and start_hr < 24),
  6             start_min     numeric(2)
  7                    check (start_min >= 0 and start_min < 60),
  8             end_hr         numeric(2)
  9                    check (end_hr >= 0 and end_hr < 24),
 10             end_min      numeric(2)
 11                   check (end_min >= 0 and end_min < 60),
 12             primary key (time_slot_id, day, start_hr, start_min)
 13   );
```

Table created.

```
SQL>
SQL> create table prereq (
  2             course_id    varchar(8),
  3             prereq_id    varchar(8),
  4             primary key (course_id, prereq_id),
  5             foreign key (course_id)
  6                    references course
  7                    on delete cascade,
  8             foreign key (prereq_id)
  9                    references course
 10   );
```

Table created.

```
SQL> start /opt/info/courses/COMP23111/populate-University-tables.sql
SQL> delete from prereq;

0 rows deleted.

SQL> delete from time_slot;

0 rows deleted.

SQL> delete from advisor;

0 rows deleted.

SQL> delete from takes;

0 rows deleted.

SQL> delete from student;

0 rows deleted.

SQL> delete from teaches;

0 rows deleted.

SQL> delete from section;

0 rows deleted.

SQL> delete from instructor;

0 rows deleted.

SQL> delete from course;

0 rows deleted.

SQL> delete from department;

0 rows deleted.

SQL> delete from classroom;

0 rows deleted.

SQL> insert into classroom values ('Packard', '101', '500');

1 row created.

SQL> insert into classroom values ('Painter', '514', '10');

1 row created.

SQL> insert into classroom values ('Taylor', '3128', '70');

1 row created.

SQL> insert into classroom values ('Watson', '100', '30');
```

```
1 row created.

SQL> insert into classroom values ('Watson', '120', '50');

1 row created.

SQL> insert into department values ('Biology', 'Watson', '90000');

1 row created.

SQL> insert into department values ('Comp. Sci.', 'Taylor', '100000');

1 row created.

SQL> insert into department values ('Elec. Eng.', 'Taylor', '85000');

1 row created.

SQL> insert into department values ('Finance', 'Painter', '120000');

1 row created.

SQL> insert into department values ('History', 'Painter', '50000');

1 row created.

SQL> insert into department values ('Music', 'Packard', '80000');

1 row created.

SQL> insert into department values ('Physics', 'Watson', '70000');

1 row created.

SQL> insert into course values ('BIO-101', 'Intro. to Biology', 'Biology', '4');

1 row created.

SQL> insert into course values ('BIO-301', 'Genetics', 'Biology', '4');

1 row created.

SQL> insert into course values ('BIO-399', 'Computational Biology', 'Biology', '3');

1 row created.

SQL> insert into course values ('CS-101', 'Intro. to Computer Science', 'Comp. Sci.', '4');

1 row created.

SQL> insert into course values ('CS-190', 'Game Design', 'Comp. Sci.', '4');

1 row created.

SQL> insert into course values ('CS-315', 'Robotics', 'Comp. Sci.', '3');

1 row created.

SQL> insert into course values ('CS-319', 'Image Processing', 'Comp. Sci.', '3');
```

```
1 row created.

SQL> insert into course values ('CS-347', 'Database System Concepts', 'Comp. Sci.', '3');

1 row created.

SQL> insert into course values ('EE-181', 'Intro. to Digital Systems', 'Elec. Eng.', '3');

1 row created.

SQL> insert into course values ('FIN-201', 'Investment Banking', 'Finance', '3');

1 row created.

SQL> insert into course values ('HIS-351', 'World History', 'History', '3');

1 row created.

SQL> insert into course values ('MU-199', 'Music Video Production', 'Music', '3');

1 row created.

SQL> insert into course values ('PHY-101', 'Physical Principles', 'Physics', '4');

1 row created.

SQL> insert into instructor values ('10101', 'Srinivasan', 'Comp. Sci.', '65000');

1 row created.

SQL> insert into instructor values ('12121', 'Wu', 'Finance', '90000');

1 row created.

SQL> insert into instructor values ('15151', 'Mozart', 'Music', '40000');

1 row created.

SQL> insert into instructor values ('22222', 'Einstein', 'Physics', '95000');

1 row created.

SQL> insert into instructor values ('32343', 'El Said', 'History', '60000');

1 row created.

SQL> insert into instructor values ('33456', 'Gold', 'Physics', '87000');

1 row created.

SQL> insert into instructor values ('45565', 'Katz', 'Comp. Sci.', '75000');

1 row created.

SQL> insert into instructor values ('58583', 'Califieri', 'History', '62000');

1 row created.
```

```
SQL> insert into instructor values ('76543', 'Singh', 'Finance', '80000');

1 row created.

SQL> insert into instructor values ('76766', 'Crick', 'Biology', '72000');

1 row created.

SQL> insert into instructor values ('83821', 'Brandt', 'Comp. Sci.', '92000');

1 row created.

SQL> insert into instructor values ('98345', 'Kim', 'Elec. Eng.', '80000');

1 row created.

SQL> insert into section values ('BIO-101', '1', 'Summer', '2009', 'Painter', '514', 'B');

1 row created.

SQL> insert into section values ('BIO-301', '1', 'Summer', '2010', 'Painter', '514', 'A');

1 row created.

SQL> insert into section values ('CS-101', '1', 'Fall', '2009', 'Packard', '101', 'H');

1 row created.

SQL> insert into section values ('CS-101', '1', 'Spring', '2010', 'Packard', '101', 'F');

1 row created.

SQL> insert into section values ('CS-190', '1', 'Spring', '2009', 'Taylor', '3128', 'E');

1 row created.

SQL> insert into section values ('CS-190', '2', 'Spring', '2009', 'Taylor', '3128', 'A');

1 row created.

SQL> insert into section values ('CS-315', '1', 'Spring', '2010', 'Watson', '120', 'D');

1 row created.

SQL> insert into section values ('CS-319', '1', 'Spring', '2010', 'Watson', '100', 'B');

1 row created.

SQL> insert into section values ('CS-319', '2', 'Spring', '2010', 'Taylor', '3128', 'C');

1 row created.

SQL> insert into section values ('CS-347', '1', 'Fall', '2009', 'Taylor', '3128', 'A');

1 row created.

SQL> insert into section values ('EE-181', '1', 'Spring', '2009', 'Taylor', '3128', 'C');

1 row created.
```

```
SQL> insert into section values ('FIN-201', '1', 'Spring', '2010', 'Packard', '101', 'B');

1 row created.

SQL> insert into section values ('HIS-351', '1', 'Spring', '2010', 'Painter', '514', 'C');

1 row created.

SQL> insert into section values ('MU-199', '1', 'Spring', '2010', 'Packard', '101', 'D');

1 row created.

SQL> insert into section values ('PHY-101', '1', 'Fall', '2009', 'Watson', '100', 'A');

1 row created.

SQL> insert into teaches values ('10101', 'CS-101', '1', 'Fall', '2009');

1 row created.

SQL> insert into teaches values ('10101', 'CS-315', '1', 'Spring', '2010');

1 row created.

SQL> insert into teaches values ('10101', 'CS-347', '1', 'Fall', '2009');

1 row created.

SQL> insert into teaches values ('12121', 'FIN-201', '1', 'Spring', '2010');

1 row created.

SQL> insert into teaches values ('15151', 'MU-199', '1', 'Spring', '2010');

1 row created.

SQL> insert into teaches values ('22222', 'PHY-101', '1', 'Fall', '2009');

1 row created.

SQL> insert into teaches values ('32343', 'HIS-351', '1', 'Spring', '2010');

1 row created.

SQL> insert into teaches values ('45565', 'CS-101', '1', 'Spring', '2010');

1 row created.

SQL> insert into teaches values ('45565', 'CS-319', '1', 'Spring', '2010');

1 row created.

SQL> insert into teaches values ('76766', 'BIO-101', '1', 'Summer', '2009');

1 row created.

SQL> insert into teaches values ('76766', 'BIO-301', '1', 'Summer', '2010');
```

```
1 row created.

SQL> insert into teaches values ('83821', 'CS-190', '1', 'Spring', '2009');

1 row created.

SQL> insert into teaches values ('83821', 'CS-190', '2', 'Spring', '2009');

1 row created.

SQL> insert into teaches values ('83821', 'CS-319', '2', 'Spring', '2010');

1 row created.

SQL> insert into teaches values ('98345', 'EE-181', '1', 'Spring', '2009');

1 row created.

SQL> insert into student values ('00128', 'Zhang', 'Comp. Sci.', '102');

1 row created.

SQL> insert into student values ('12345', 'Shankar', 'Comp. Sci.', '32');

1 row created.

SQL> insert into student values ('19991', 'Brandt', 'History', '80');

1 row created.

SQL> insert into student values ('23121', 'Chavez', 'Finance', '110');

1 row created.

SQL> insert into student values ('44553', 'Peltier', 'Physics', '56');

1 row created.

SQL> insert into student values ('45678', 'Levy', 'Physics', '46');

1 row created.

SQL> insert into student values ('54321', 'Williams', 'Comp. Sci.', '54');

1 row created.

SQL> insert into student values ('55739', 'Sanchez', 'Music', '38');

1 row created.

SQL> insert into student values ('70557', 'Snow', 'Physics', '0');

1 row created.

SQL> insert into student values ('76543', 'Brown', 'Comp. Sci.', '58');

1 row created.

SQL> insert into student values ('76653', 'Aoi', 'Elec. Eng.', '60');
```

```
1 row created.

SQL> insert into student values ('98765', 'Bourikas', 'Elec. Eng.', '98');

1 row created.

SQL> insert into student values ('98988', 'Tanaka', 'Biology', '120');

1 row created.

SQL> insert into takes values ('00128', 'CS-101', '1', 'Fall', '2009', 'A');

1 row created.

SQL> insert into takes values ('00128', 'CS-347', '1', 'Fall', '2009', 'A-');

1 row created.

SQL> insert into takes values ('12345', 'CS-101', '1', 'Fall', '2009', 'C');

1 row created.

SQL> insert into takes values ('12345', 'CS-190', '2', 'Spring', '2009', 'A');

1 row created.

SQL> insert into takes values ('12345', 'CS-315', '1', 'Spring', '2010', 'A');

1 row created.

SQL> insert into takes values ('12345', 'CS-347', '1', 'Fall', '2009', 'A');

1 row created.

SQL> insert into takes values ('19991', 'HIS-351', '1', 'Spring', '2010', 'B');

1 row created.

SQL> insert into takes values ('23121', 'FIN-201', '1', 'Spring', '2010', 'C+');

1 row created.

SQL> insert into takes values ('44553', 'PHY-101', '1', 'Fall', '2009', 'B-');

1 row created.

SQL> insert into takes values ('45678', 'CS-101', '1', 'Fall', '2009', 'F');

1 row created.

SQL> insert into takes values ('45678', 'CS-101', '1', 'Spring', '2010', 'B+');

1 row created.

SQL> insert into takes values ('45678', 'CS-319', '1', 'Spring', '2010', 'B');

1 row created.
```

```
SQL> insert into takes values ('54321', 'CS-101', '1', 'Fall', '2009', 'A-');

1 row created.

SQL> insert into takes values ('54321', 'CS-190', '2', 'Spring', '2009', 'B+');

1 row created.

SQL> insert into takes values ('55739', 'MU-199', '1', 'Spring', '2010', 'A-');

1 row created.

SQL> insert into takes values ('76543', 'CS-101', '1', 'Fall', '2009', 'A');

1 row created.

SQL> insert into takes values ('76543', 'CS-319', '2', 'Spring', '2010', 'A');

1 row created.

SQL> insert into takes values ('76653', 'EE-181', '1', 'Spring', '2009', 'C');

1 row created.

SQL> insert into takes values ('98765', 'CS-101', '1', 'Fall', '2009', 'C-');

1 row created.

SQL> insert into takes values ('98765', 'CS-315', '1', 'Spring', '2010', 'B');

1 row created.

SQL> insert into takes values ('98988', 'BIO-101', '1', 'Summer', '2009', 'A');

1 row created.

SQL> insert into takes values ('98988', 'BIO-301', '1', 'Summer', '2010', null);

1 row created.

SQL> insert into advisor values ('00128', '45565');

1 row created.

SQL> insert into advisor values ('12345', '10101');

1 row created.

SQL> insert into advisor values ('23121', '76543');

1 row created.

SQL> insert into advisor values ('44553', '22222');

1 row created.

SQL> insert into advisor values ('45678', '22222');

1 row created.
```

```
SQL> insert into advisor values ('76543', '45565');

1 row created.

SQL> insert into advisor values ('76653', '98345');

1 row created.

SQL> insert into advisor values ('98765', '98345');

1 row created.

SQL> insert into advisor values ('98988', '76766');

1 row created.

SQL> insert into time_slot values ('A', 'M', '8', '0', '8', '50');

1 row created.

SQL> insert into time_slot values ('A', 'W', '8', '0', '8', '50');

1 row created.

SQL> insert into time_slot values ('A', 'F', '8', '0', '8', '50');

1 row created.

SQL> insert into time_slot values ('B', 'M', '9', '0', '9', '50');

1 row created.

SQL> insert into time_slot values ('B', 'W', '9', '0', '9', '50');

1 row created.

SQL> insert into time_slot values ('B', 'F', '9', '0', '9', '50');

1 row created.

SQL> insert into time_slot values ('C', 'M', '11', '0', '11', '50');

1 row created.

SQL> insert into time_slot values ('C', 'W', '11', '0', '11', '50');

1 row created.

SQL> insert into time_slot values ('C', 'F', '11', '0', '11', '50');

1 row created.

SQL> insert into time_slot values ('D', 'M', '13', '0', '13', '50');

1 row created.

SQL> insert into time_slot values ('D', 'W', '13', '0', '13', '50');
```

```
1 row created.

SQL> insert into time_slot values ('D', 'F', '13', '0', '13', '50');

1 row created.

SQL> insert into time_slot values ('E', 'T', '10', '30', '11', '45 ');

1 row created.

SQL> insert into time_slot values ('E', 'R', '10', '30', '11', '45 ');

1 row created.

SQL> insert into time_slot values ('F', 'T', '14', '30', '15', '45 ');

1 row created.

SQL> insert into time_slot values ('F', 'R', '14', '30', '15', '45 ');

1 row created.

SQL> insert into time_slot values ('G', 'M', '16', '0', '16', '50');

1 row created.

SQL> insert into time_slot values ('G', 'W', '16', '0', '16', '50');

1 row created.

SQL> insert into time_slot values ('G', 'F', '16', '0', '16', '50');

1 row created.

SQL> insert into time_slot values ('H', 'W', '10', '0', '12', '30');

1 row created.

SQL> insert into prereq values ('BIO-301', 'BIO-101');

1 row created.

SQL> insert into prereq values ('BIO-399', 'BIO-101');

1 row created.

SQL> insert into prereq values ('CS-190', 'CS-101');

1 row created.

SQL> insert into prereq values ('CS-315', 'CS-101');

1 row created.

SQL> insert into prereq values ('CS-319', 'CS-101');

1 row created.

SQL> insert into prereq values ('CS-347', 'CS-101');
```

```
1 row created.

SQL> insert into prereq values ('EE-181', 'PHY-101');

1 row created.

SQL>
SQL> -- 1 (a) i
SQL> select distinct student.name
  2  from student
  3  inner join takes
  4  on student.ID=takes.ID
  5  join course
  6  on takes.course_id=course.course_id
  7  where course.dept_name='Comp. Sci.';

NAME
--------------------
Zhang
Brown
Bourikas
Shankar
Levy
Williams

6 rows selected.

SQL>
SQL> -- 1 (a) ii
SQL> select distinct student.ID, student.name
  2  from takes
  3  right join student
  4  on student.ID=takes.ID
  5  where takes.year>2008 or takes.year is NULL;

ID     NAME
-----  --------------------
98988 Tanaka
54321 Williams
76653 Aoi
19991 Brandt
23121 Chavez
44553 Peltier
98765 Bourikas
76543 Brown
00128 Zhang
12345 Shankar
70557 Snow

ID     NAME
-----  --------------------
45678 Levy
55739 Sanchez

13 rows selected.

SQL>
SQL> -- 1 (a) iii
```

```
SQL> create view inst_sal as
  2  select max(instructor.salary) as max_salary, dept_name
  3  from instructor group by dept_name;

View created.

SQL> select *
  2  from inst_sal;

MAX_    SALARY DEPT_NAME
---------- --------------------
   80000 Elec. Eng.
   95000 Physics
   92000 Comp. Sci.
   90000 Finance
   72000 Biology
   40000 Music
   62000 History

7 rows selected.

SQL>
SQL> -- 1 (a) iv
SQL> select min(inst_sal.max_salary)
  2  from inst_sal;

MIN(INST_SAL.MAX_SALARY)
------------------------
                   40000

SQL> drop view inst_sal;

View dropped.

SQL>
SQL> -- 1 (b) i
SQL> insert into course (course_id, title, dept_name, credits)
  2  values ( 'CS-001', 'Weekly Seminar', 'Comp. Sci.', 10);

1 row created.

SQL>
SQL> --1 (b) ii, iii
SQL> -- ERROR ORA-02290: check constraint violated
SQL> -- <document>
SQL> -- Cause: The values being inserted do not satisfy the named check constraint.
SQL> -- Action: do not insert values that violate the constraint.
SQL> --<code>
SQL> -- create table course (
SQL> --      ......
SQL> --          credits              numeric(2,0)
SQL> --                   check (credits > 0),    rule violated
SQL> --      ......
SQL> -- );
SQL> -- insert into course (course_id, title, dept_name, credits)
SQL> -- values ( 'CS-002', 'Monthly Seminar', 'Comp. Sci.', 0);
SQL>
SQL> --1 (b) iv, v
SQL> -- <ducoment>
```

```
SQL> -- If a column in a row has no value, then the column is said to be null, or to
SQL> -- contain null.
SQL> -- So the missing columns contain NULL.
SQL> insert into section (course_id, sec_id, semester, year)
  2  values ('CS-001', '1', 'Fall', 2009);

1 row created.

SQL>
SQL> --1 (b) vi
SQL> insert into takes (ID, course_id, sec_id, semester, year)
  2  select student.ID, section.course_id, section.sec_id, section.semester, section.year
  3  from student, section
  4  where student.dept_name='Comp. Sci.'
  5  and section.course_id = 'CS-001';

4 rows created.

SQL>
SQL> --1 (b) vii
SQL> delete takes
  2  where course_ID='CS-001'
  3  and ID in (
  4  select distinct ID
  5  from student
  6  where name='Zhang');

1 row deleted.

SQL>
SQL> --1 (b) viii
SQL> delete takes where course_id in(
  2  select course_id from course where instr(lower(course.title), 'database')>0);

2 rows deleted.

SQL>
SQL> --1 (b) ix,x
SQL> --<code>
SQL> -- create table section (
SQL> --        ......
SQL> --              foreign key (course_id)
SQL> --                references course
SQL> --                on delete cascade,
SQL> --        ......
SQL> -- );
SQL> -- create table takes (
SQL> --          ......
SQL> --              foreign key (course_id,sec_id, semester, year)
SQL> --                references section
SQL> --                on delete cascade,
SQL> --          ......
SQL> -- );
SQL> -- It means that when a course is deleted from course relation, tuples in
SQL> -- sections relation related to the course are deleted accordingly, then tuples
SQL> -- in takes relation relation to those sections are deleted accordingly.
SQL> delete course
  2  where course_id='CS-001'
  3
```

```
SQL> start /opt/info/courses/COMP23111/drop-University-tables.sql
SQL> drop table prereq;

Table dropped.

SQL> drop table time_slot;

Table dropped.

SQL> drop table advisor;

Table dropped.

SQL> drop table takes;

Table dropped.

SQL> drop table student;

Table dropped.

SQL> drop table teaches;

Table dropped.

SQL> drop table section;

Table dropped.

SQL> drop table instructor;

Table dropped.

SQL> drop table course;

Table dropped.

SQL> drop table department;

Table dropped.

SQL> drop table classroom;

Table dropped.

SQL>
SQL>
SQL> start /opt/info/courses/COMP23111/create-Accident-tables.sql
SQL> create table person (
  2             driver_id integer,
  3             name varchar(20),
  4             address varchar(20),
  5             primary key (driver_id)
  6   );

Table created.

SQL>
SQL> create table car (
```

```
  2          license varchar(10),
  3          model varchar(20),
  4          year integer,
  5          primary key (license)
  6  );

Table created.

SQL>
SQL> create table accident (
  2          report_number integer,
  3          accident_date date,
  4          location varchar(20),
  5          primary key (report_number)
  6  );

Table created.

SQL>
SQL> create table owns (
  2          driver_id integer,
  3          license varchar(10),
  4          primary key (driver_id,license),
  5          foreign key (driver_id) references person,
  6          foreign key (license) references car
  7  );

Table created.

SQL>
SQL> create table participated (
  2          report_number integer,
  3          license varchar(10),
  4          driver_id integer,
  5          damage_amount integer,
  6          primary key (report_number,license),
  7          foreign key (license) references car,
  8          foreign key (report_number) references accident
  9  );

Table created.

SQL>
SQL> start /opt/info/courses/COMP23111/populate-Accident-tables.sql
SQL>
SQL> insert into person values (1, 'Jane Rowling', 'Yate');

1 row created.

SQL> insert into person values (2, 'Kelly Woolf', 'Kensington');

1 row created.

SQL> insert into person values (3, 'Penelope Byatt', 'Sheffield');

1 row created.

SQL> insert into person values (4, 'Antonia Austen', 'Steventon');
```

```
1 row created.

SQL> insert into person values (5, 'Thomas Thackeray', 'Kolkata');

1 row created.

SQL> insert into person values (6, 'William Hardy', 'Stinsford');

1 row created.

SQL> insert into person values (7, 'George Wells', 'Bromley');

1 row created.

SQL> insert into person values (8, 'Herbert Orwell', 'Motihari');

1 row created.

SQL>
SQL> insert into car values ('CGZ 2085', 'Ford Fiesta', 2000);

1 row created.

SQL> insert into car values ('CGZ 2140', 'Nissan Pulsar', 2016);

1 row created.

SQL> insert into car values ('KUY 629', 'Renault Megane', 2013);

1 row created.

SQL> insert into car values ('2 TPO', 'Ford Mondeo', 2010);

1 row created.

SQL> insert into car values ('550 MPC', 'Mini Convertible', 2016);

1 row created.

SQL> insert into car values ('790 GXC', 'Mazda 5', 2016 );

1 row created.

SQL> insert into car values ('567 UYJ', 'Ford Fiesta', 2001);

1 row created.

SQL> insert into car values ('JNP 6', 'Ford Fiesta', 2005);

1 row created.

SQL> insert into car values ('JD 8645', 'Renault Megane', 2013 );

1 row created.

SQL> insert into car values ('KUY 926', 'Renault Megane', 2013 );

1 row created.
```

```
SQL>
SQL> insert into accident values (7879432, '07-JUL-05' , 'Manchester');

1 row created.

SQL> insert into accident values (8779342, '07-JUL-15' , 'Bolton');

1 row created.

SQL> insert into accident values (7784932, '08-JUL-10' , 'Burnley');

1 row created.

SQL> insert into accident values (7798432, '31-MAR-07' , 'Manchester');

1 row created.

SQL> insert into accident values (7794382, '28-FEB-16' , 'Manchester');

1 row created.

SQL> insert into accident values (7897423, '24-DEC-12' , 'Stockport');

1 row created.

SQL>
SQL> insert into owns values (1, 'CGZ 2085');

1 row created.

SQL> insert into owns values (1, 'CGZ 2140');

1 row created.

SQL> insert into owns values (2, 'KUY 629');

1 row created.

SQL> insert into owns values (8, '2 TPO');

1 row created.

SQL> insert into owns values (6, '550 MPC');

1 row created.

SQL> insert into owns values (3, '790 GXC');

1 row created.

SQL> insert into owns values (4, '567 UYJ');

1 row created.

SQL> insert into owns values (2, 'JNP 6');

1 row created.

SQL> insert into owns values (7, 'JD 8645');
```

```
1 row created.

SQL> insert into owns values (5, 'KUY 926');

1 row created.

SQL>
SQL> insert into participated values (7879432, 'CGZ 2140', 1, 1000);

1 row created.

SQL> insert into participated values (8779342, 'CGZ 2140', 2, 2000);

1 row created.

SQL> insert into participated values (7784932, '2 TPO', 6, 500);

1 row created.

SQL> insert into participated values (7784932, 'CGZ 2085', 1, 3500);

1 row created.

SQL> insert into participated values (7897423, 'JD 8645', 6, 4000);

1 row created.

SQL> insert into participated values (7897423, 'JNP 6', 2, 2000);

1 row created.

SQL> insert into participated values (7897423, 'KUY 629', 5, 250);

1 row created.

SQL>
SQL>
SQL>
SQL> -- 2 (a) i
SQL> select count(report_number)
  2  from participated
  3  join person
  4  on participated.driver_id=person.driver_id
  5  where person.name='Jane Rowling';

COUNT(REPORT_NUMBER)
--------------------
                   2

SQL>
SQL> -- 2 (a) ii
SQL> update participated
  2  set damage_amount=2500
  3  where report_number=7897423
  4  and license='KUY 629';

1 row updated.
```

```
SQL>
SQL> -- 2 (a) iii
SQL> with temp as (
  2  select driver_id, sum(damage_amount)
  3  as total_damage
  4  from participated
  5  group by driver_id
  6  )select person.name, temp.total_damage
  7  from person, temp
  8  where person.driver_id=temp.driver_id
  9  and temp.total_damage>3000
 10  order by temp.total_damage desc;

NAME                 TOTAL_DAMAGE
-------------------- ------------
Jane Rowling                 4500
William Hardy                4500
Kelly Woolf                  4000

SQL>
SQL> -- 2 (a) iv
SQL>
SQL> create view damage_per_location as
  2  select accident.location, participated.damage_amount
  3  from accident, participated
  4  where accident.report_number=participated.report_number;

View created.

SQL> create view average_damage_per_location as
  2  select location, avg(damage_amount) as av_amt
  3  from damage_per_location
  4  group by location;

View created.

SQL> select *
  2  from average_damage_per_location;

LOCATION               AV_AMT
-------------------- ----------
Burnley                  2000
Stockport           2833.33333
Bolton                   2000
Manchester               1000

SQL>
SQL> --2 (a) v
SQL> select location from average_damage_per_location
  2  where av_amt=(select max(av_amt) from average_damage_per_location);

LOCATION
--------------------
Stockport

SQL> drop view damage_per_location;

View dropped.
```

```
SQL> drop view average_damage_per_location;

View dropped.

SQL>
SQL> -- [close]
SQL> start /opt/info/courses/COMP23111/drop-Accident-tables.sql
SQL> drop table participated;

Table dropped.

SQL> drop table owns;

Table dropped.

SQL> drop table accident;

Table dropped.

SQL> drop table car;

Table dropped.

SQL> drop table person;

Table dropped.

SQL> -- [footer]
SQL> --
SQL> -- End of Exercise 03 by Haorui Chen
SQL> SPOOL OFF
```

EX03-10407315 SQL queries for university and accident database