```
iti=# create table track(track_id serial primary key, name char(25));
CREATE TABLE
iti=# create table if not exists student (student_id serial primary key, name char(25), email char(100), street char(25), city char(25), track_id integer references track (t
rack_id));
CREATE TABLE
```

```
iti=# create table student_phone (student_id integer references student (student_id), phone varchar(15), primary key (student_id, phone));
CREATE TABLE
```

```
iti=# create table student_phone (student_id integer references student (student_id), phone varchar(15), primary key (student_id, phone));
CREATE TABLE
iti=# select * from student
iti-# ;
 student_id | name | email | street | city | track_id
------------+------+-------+--------+------+----------
(0 rows)

iti=# create table course (course_id serial primary key, name varchar(25), description text, max_scorev smallint);
CREATE TABLE
iti=# create table exam(exam_id serial primary key, exam_date timestamp, course_id references course (course_id));
ERROR:  syntax error at or near "references"
LINE 1: ...erial primary key, exam_date timestamp, course_id references...
                                                           ^
iti=# create table exam(exam_id serial primary key, exam_date timestamp, course_id integer references course (course_id));
CREATE TABLE
iti=# create table track_course (track_id integer references track (track_id), course_id integer references course (course_id), primary key (track_id, course_id));
CREATE TABLE
iti=# create table student_course (student_id integer references student (student_id), course_id integer references course (course_id), primary key (student_id,course_id));
CREATE TABLE
iti=# create table student_exam (student_id integer references student (student_id), exam_id integer references exam (exam_id), primary key (student_id,exam_id));
CREATE TABLE
iti=# \d
                List of relations
 Schema |          Name          |   Type   |  Owner
--------+------------------------+----------+----------
 public | course                 | table    | postgres
 public | course_course_id_seq   | sequence | postgres
 public | exam                   | table    | postgres
 public | exam_exam_id_seq       | sequence | postgres
 public | student                | table    | postgres
 public | student_course         | table    | postgres
 public | student_exam           | table    | postgres
 public | student_phone          | table    | postgres
 public | student_student_id_seq | sequence | postgres
 public | track                  | table    | postgres
 public | track_course           | table    | postgres
 public | track_track_id_seq     | sequence | postgres
(12 rows)

iti=#
```

```
iti=# insert into track (name) values ('fullstack using python'), ('fullstack using .net')
;
INSERT 0 2
iti=# \d track
                                  Table "public.track"
  Column  |     Type      | Collation | Nullable |                 Default
----------+---------------+-----------+----------+-----------------------------------------
 track_id | integer       |           | not null | nextval('track_track_id_seq'::regclass)
 name     | character(25) |           |          |
Indexes:
    "track_pkey" PRIMARY KEY, btree (track_id)
Referenced by:
    TABLE "student" CONSTRAINT "student_track_id_fkey" FOREIGN KEY (track_id) REFERENCES track(track_id)
    TABLE "track_course" CONSTRAINT "track_course_track_id_fkey" FOREIGN KEY (track_id) REFERENCES track(track_id)

iti=# select * from track
iti-# ;
 track_id |           name
----------+---------------------------
        1 | fullstack using python
        2 | fullstack using .net
(2 rows)

iti=# insert into track (name) values ('cyber security'), ('aws'), ('2d graphic')
;
INSERT 0 3
iti=# select * from track
;
 track_id |           name
----------+---------------------------
        1 | fullstack using python
        2 | fullstack using .net
        3 | cyber security
        4 | aws
        5 | 2d graphic
(5 rows)

iti=#
```

```
iti=# insert into student (name, email, street, city) values ('ahmed', 'ahmed1@gmail.com', 'mrour', 'fayoum'), ('ahmed', 'ahmed2@gmail.com', 'mrour', 'fayoum'), ('ahmed', 'ahmed3@gmail.com', 'mrour', 'fayoum'),
('ahmed', 'ahmed4@gmail.com', 'mrour', 'fayoum'), ('ahmed', 'ahmed5@gmail.com', 'mrour', 'fayoum');
INSERT 0 5
iti=# select * from student
iti-# ;
iti=# select * from student
;
iti=# insert into student (name, email, street, city) values ('ahmed', 'ahmed1@gmail.com', 'mrour', 'fayoum'), ('ahmed', 'ahmed2@gmail.com', 'mrour', 'fayoum'), ('ahmed', 'ahmed3@gmail.com', 'mrour', 'fayoum'),
('ahmed', 'ahmed4@gmail.com', 'mrour', 'fayoum'), ('ahmed', 'ahmed5@gmail.com', 'mrour', 'fayoum');^C
iti=# update student set track_id = 1 where student_id = 1;
UPDATE 1
iti=# select * from student
;
iti=# update student set track_id = 1 where student_id = 2;
UPDATE 1
iti=# update student set track_id = 2 where student_id = 3;
UPDATE 1
iti=# update student set track_id = 5 where student_id = 4;
UPDATE 1
iti=# update student set track_id = 3 where student_id = 5;
UPDATE 1
iti=# select * from student
;
iti=#
```

```
iti=# select * from student
;
 student_id |          name          |                                                email                                                |         street         |          city          | track_id
------------+------------------------+-----------------------------------------------------------------------------------------------------+------------------------+------------------------+----------
          1 | ahmed                  | ahmed1@gmail.com                                                                                    | mrour                  | fayoum                 |        1
          2 | ahmed                  | ahmed2@gmail.com                                                                                    | mrour                  | fayoum                 |        1
          3 | ahmed                  | ahmed3@gmail.com                                                                                    | mrour                  | fayoum                 |        2
          4 | ahmed                  | ahmed4@gmail.com                                                                                    | mrour                  | fayoum                 |        5
          5 | ahmed                  | ahmed5@gmail.com                                                                                    | mrour                  | fayoum                 |        3
(5 rows)

iti=#
```

```
ERROR:  syntax error at or near "("
LINE 1: insert into student_phone (student_id, phone) values (1)  01...
                                  ^
iti=# insert into student_phone (student_id, phone) values (1, '01141829471'), (1, '01092429329')
,(3, '88887665445'), (4, '765543567757');
INSERT 0 4
iti=# select * from student_phone
iti-# ;
 student_id |    phone
------------+--------------
          1 | 01141829471
          1 | 01092429329
          3 | 88887665445
          4 | 765543567757
(4 rows)

iti=#
```

```
iti=# insert into course (name, description, max_score) values ('client side', 'it is about html & css & js', 100), ('database', 'it is about database', 100), ('react', 'it is about react', 100), ('networking',
'it is about networking', 100), ('django', 'it is about django', 100), ('.net', 'it is .net', 100);
INSERT 0 6
iti=# select * from course
iti-# ;
 course_id |    name     |         description         | max_score
-----------+-------------+-----------------------------+-----------
         1 | client side | it is about html & css & js |       100
         2 | database    | it is about database        |       100
         3 | react       | it is about react           |       100
         4 | networking  | it is about networking      |       100
         5 | django      | it is about django          |       100
         6 | .net        | it is .net                  |       100
(6 rows)

iti=#
```

```
iti=# insert into exam (exam_date, course_id) values (now(), 1), ('2024-04-14 18:50:50', 2), ('2024-07-7 18:50:43', 3), (now(), 5);
INSERT 0 4
iti=# select * from exam
iti-# ;
 exam_id |         exam_date          | course_id
---------+----------------------------+-----------
       1 | 2024-07-29 18:53:22.26751 |         1
       2 | 2024-04-14 18:50:50       |         2
       3 | 2024-07-07 18:50:43       |         3
       4 | 2024-07-29 18:53:22.26751 |         5
(4 rows)

iti=#
```

```
iti=# insert into track_course (track_id, course_id) values (1, 1), (1, 2), (1, 3), (1, 5), (2, 1), (2, 6), (3, 4);
INSERT 0 7
iti=# select * from track_course
iti-# ;
 track_id | course_id
----------+-----------
        1 |         1
        1 |         2
        1 |         3
        1 |         5
        2 |         1
        2 |         6
        3 |         4
(7 rows)

iti=#
```

```
ALTER TABLE
iti=# insert into student_exam (student_id, exam_id, score) values (1, 1, 80), (2, 1, 90), (3, 3, 98), (5, 4, 87), (5, 3, 70);
INSERT 0 5
iti=# select * from student_exam;
 student_id | exam_id | score
------------+---------+-------
          1 |       1 |    80
          2 |       1 |    90
          3 |       3 |    98
          5 |       4 |    87
          5 |       3 |    70
(5 rows)

iti=#
```