Module 7 - Assignment 2 - Referential Integrity

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Query Editor | Query History

```sql
CREATE TABLE building
(
    building_id INT PRIMARY KEY,
    building_name varchar (30) NOT NULL,
    building_use varchar (100) NOT NULL
);

INSERT INTO building
(building_id, building_name, building_use)
VALUES
(1, 'Trump Tower', 'High-Rise Commercial');

INSERT INTO building
(building_id, building_name, building_use)
VALUES
(2, 'Salesforce Tower', 'Medium-Rise Commercial');

INSERT INTO building
(building_id, building_name, building_use)
VALUES
(3, 'Hilton Hotel', 'Hotel');

select * from building;
```

Explain | Messages | Notifications | Data Output

	building_id [PK] integer	building_name character varying (30)	building_use character varying (100)
1	1	Trump Tower	High-Rise Commercial
2	2	Salesforce Tower	Medium-Rise Commercial
3	3	Hilton Hotel	Hotel

One table provides a list of the buildings being monitored,

dummy/postgres@PostgreSQL 11

Query Editor | Query History

```
25  --table for energy_consump
26  CREATE TABLE energy_consump
27  (
28      building_id INT PRIMARY KEY,
29      energy_provider VARCHAR(30) NOT NULL,
30      megawatts_used INT
31  );
32
33  -- inserting values into energy_consump
34  INSERT INTO energy_consump
35  (building_id, energy_provider, megawatts_used)
36  VALUES
37  (1, 'Con Edison', 10000);
38
39  INSERT INTO energy_consump
40  (building_id, energy_provider, megawatts_used)
41  VALUES
42  (2, 'Con Edison', 30000);
43
44  INSERT INTO energy_consump
45  (building_id, energy_provider, megawatts_used)
46  VALUES
47  (3, 'PSE&G', 5000);
48
49  select * from energy_consump;
```

Explain | Messages | Notifications | Data Output

	building_id [PK] integer	energy_provider character varying (30)	megawatts_used integer
1	1	Con Edison	10000
2	2	Con Edison	30000
3	3	PSE&G	5000

A second table that shows monthly energy consumption for each building

Query Editor | Query History

```
50  --table for meeting
51  CREATE TABLE meeting
52  (
53      building_id INT PRIMARY KEY,
54      leader_of_mting VARCHAR(30) NOT NULL,
55      meeting_date DATE,
56      meetingminutes_length INT NOT NULL
57  );
58
59  -- inserting values into meeting
60  INSERT INTO meeting
61  (building_id, leader_of_mting, meeting_date, meetingminutes_length)
62  VALUES
63  (1, 'Abe Zippers', '2020-01-01', 30);
64
65  INSERT INTO meeting
66  (building_id, leader_of_mting, meeting_date, meetingminutes_length)
67  VALUES
68  (2, 'Barney Yarn ', '2020-02-02', 15);
69
70  INSERT INTO meeting
71  (building_id, leader_of_mting, meeting_date, meetingminutes_length)
72  VALUES
73  (3, 'Caleb Xavier', '2020-03-03', 60);
74
75  select * from meeting;
```

Explain | Messages | Notifications | Data Output

	building_id [PK] integer	energy_provider character varying (30)	megawatts_used integer
1	1	Con Edison	10000
2	2	Con Edison	30000
3	3	PSE&G	5000

A third table lists the meetings that your organization has had with each building's management over time

Query Editor | Query History

```
79  ----table for building category
80  CREATE TABLE building_category
81  (
82      building_id INT PRIMARY KEY,
83      category VARCHAR(60) NOT NULL
84  );
85
86  -- inserting values into building_category
87  INSERT INTO building_category
88  (building_id, category)
89  VALUES
90  (1, 'Commercial');
91  INSERT INTO building_category
92  (building_id, category)
93  VALUES
94  (2, 'Commercial');
95  INSERT INTO building_category
96  (building_id, category)
97  VALUES
98  (3, 'Industrial');
99
100 select * from building_category;
```

Explain | Messages | Notifications | Data Out

	building_id [PK] integer	category character varying (60)
1	1	Commercial
2	2	Commercial
3	3	Industrial

A fourth table lists the different types of buildings (examples: Low to Medium-Rise Commercial, High-Rise Commercial, Multi-Family, Industrial, Mixed Use).

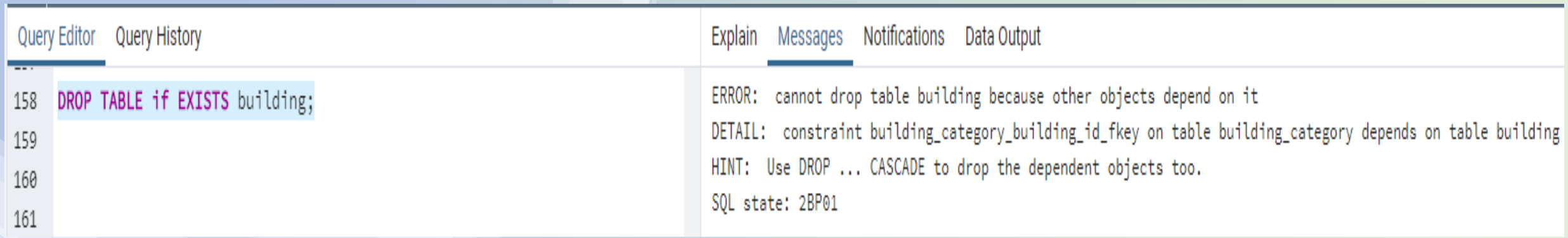
Query Editor | Query History

```
120 ------------------------------------------------------------------------------
121 --ALTER STATEMENTS--------------------------------------------------------------
122 ALTER TABLE building_category
123 ADD FOREIGN KEY
124 (building_id)
125 REFERENCES building;
126
127
128
129 UPDATE building
130 SET building_use='Commercial'
131 WHERE building_use='High-Rise Commercial';
132
133 UPDATE building
134 SET building_use='Commercial'
135 WHERE building_use='Medium-Rise Commercial';
136
137 select * from building;
```

Explain | Messages | Notifications | Data Output

	building_id [PK] integer	building_name character varying (30)	building_use character varying (100)
1	3	Hilton Hotel	Hotel
2	1	Trump Tower	Commercial
3	2	Salesforce Tower	Commercial

Show reasonable behavior when:
You combine Low to Medium Rise Commercial and High-Rise Commercial building types into a single “Commercial Category”



SHOW REASONABLE BEHAVIOR when You delete a building from the database

Since I altered the table to reference building category, I cannot delete buildings from the building table. Parents cannot be deleted leaving children behind. If I wanted to delete “building” I’d have to DROP CASCASE table.