



Title

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Course	Database Concepts and Applications
Session	
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1. Species Table

CREATE new table 'species' with the following fields
id

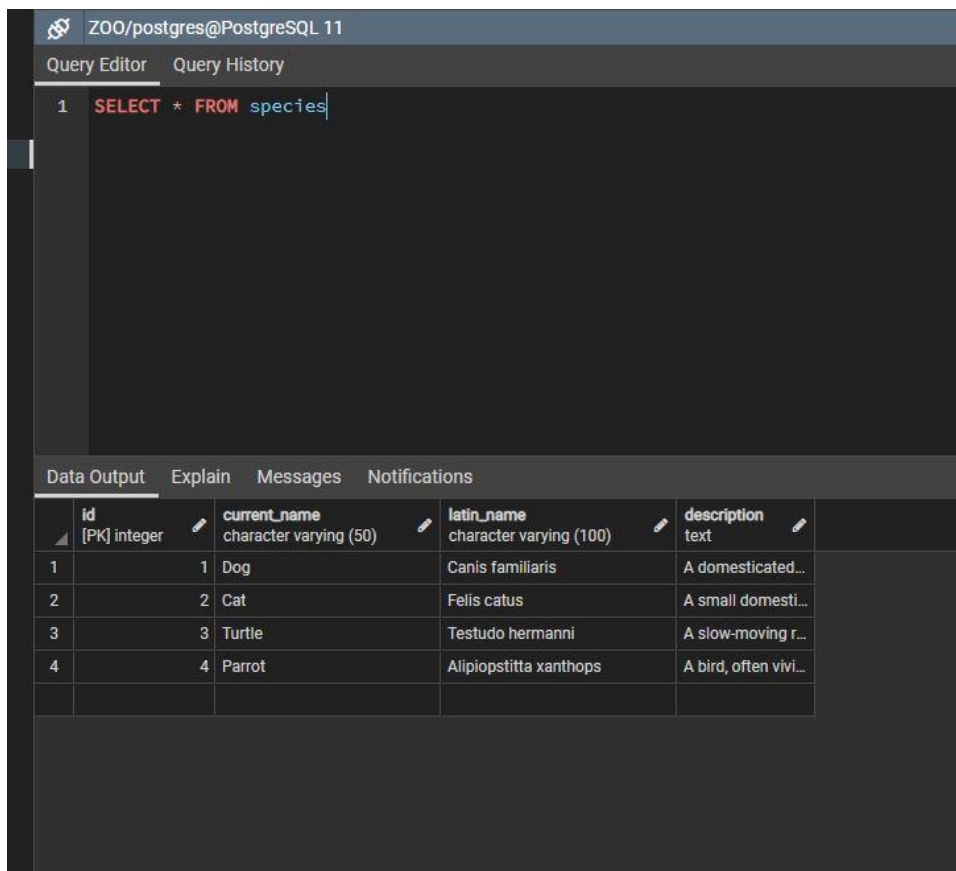
current_name

latin_name

description

Add a primary key to the table

INSERT into table created the following



The screenshot shows a PostgreSQL query editor interface. At the top, the title bar reads 'ZOO/postgres@PostgreSQL 11'. Below it, there are tabs for 'Query Editor' and 'Query History'. The 'Query Editor' tab is active, displaying a single query: '1 SELECT * FROM species'. Below the query editor, there are tabs for 'Data Output', 'Explain', 'Messages', and 'Notifications'. The 'Data Output' tab is active, showing a table with 5 columns: 'id', 'current_name', 'latin_name', and 'description'. The 'id' column is marked as a primary key [PK] integer. The 'current_name' column is a character varying (50). The 'latin_name' column is a character varying (100). The 'description' column is a text field. The table contains 4 rows of data:

	id [PK] integer	current_name character varying (50)	latin_name character varying (100)	description text
1	1	Dog	Canis familiaris	A domesticated...
2	2	Cat	Felis catus	A small domesti...
3	3	Turtle	Testudo hermanni	A slow-moving r...
4	4	Parrot	Alipiopstitta xanthops	A bird, often vivi...

Add a new column : species_id in animals

Replace old species name with new species id from specie table

Delete old species column

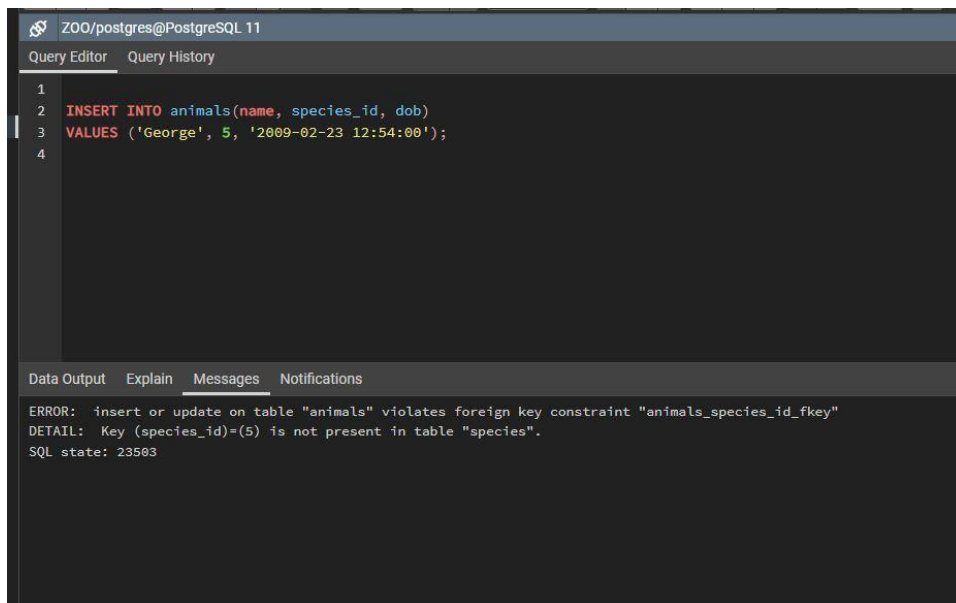
Add Foreign Key

ZOO/postgres@PostgreSQL 11										
Query Editor Query History										
1 SELECT * FROM animals										
Data Output Explain Messages Notifications										
	id [PK] integer	sex character (1)	dob timestamp without time zone	name character varying (30)	comments text	species_id integer	race_id integer	mother_id integer		
1	11	F	2015-02-20 15:45:00	Canaille	[null]		1	[null]		
2	15	F	2015-02-20 15:47:00	Anya	[null]		1	[null]		
3	16	F	2016-05-26 08:50:00	Louya	[null]		1	[null]		
4	24	M	2013-05-14 15:50:00	Zambo	[null]		1	[null]		
5	5	[null]	2017-10-03 16:44:00	Choupi	No left hear		2	[null]		
6	4	F	2016-08-03 05:12:00	[null]	[null]		3	[null]		
7	6	F	2016-06-13 08:17:00	Bobosse	No Shell		3	[null]		
8	9	[null]	2017-08-23 05:18:00	[null]	[null]		3	[null]		
9	45	F	2016-03-24 08:23:00	Tortilla	[null]		3	[null]		
10	46	F	2016-03-26 01:24:00	Scroupy	[null]		3	[null]		
11	47	F	2013-03-15 14:56:00	Lulla	[null]		3	[null]		
12	48	F	2015-03-15 12:02:00	Dana	[null]		3	[null]		
13	49	F	2016-05-25 19:57:00	Cheli	[null]		3	[null]		
14	50	F	2014-04-01 03:54:00	Chicaca	[null]		3	[null]		
15	51	F	2013-03-15 14:26:00	Redbul	Dont sleep		3	[null]		
16	52	M	2014-04-02 01:45:00	Spoutnik	[null]		3	[null]		
17	53	M	2015-03-16 08:20:00	Bubulle	[null]		3	[null]		
18	54	M	2015-03-15 18:45:00	Relou	fat		3	[null]		

Test:

INSERT INTO animals(name, species_id, dob)

VALUES ('George', 5, '2009-02-23 12:54:00') -it should fail



The screenshot shows a PostgreSQL query editor window titled "ZOO/postgres@PostgreSQL 11". The "Query Editor" tab is active, displaying the following SQL statement:

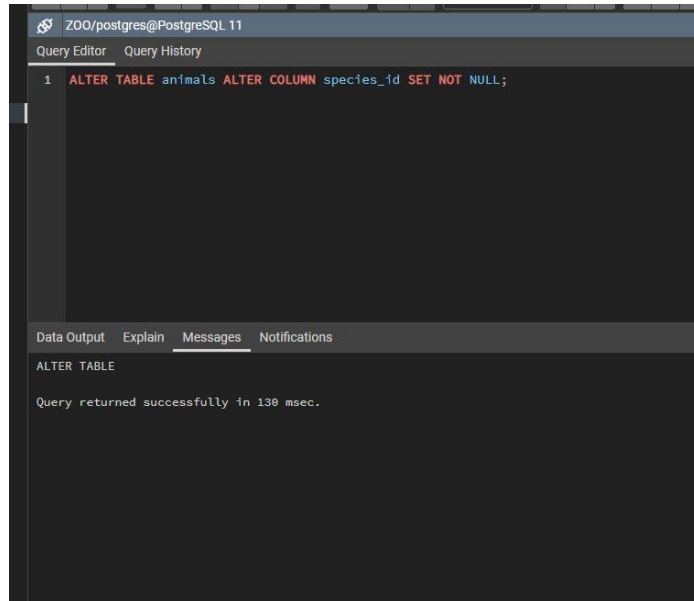
```
1
2 INSERT INTO animals(name, species_id, dob)
3 VALUES ('George', 5, '2009-02-23 12:54:00');
4
```

The "Messages" tab is also active, showing the following error message:

```
ERROR: insert or update on table "animals" violates foreign key constraint "animals_species_id_fkey"
DETAIL: Key (species_id)=(5) is not present in table "species".
SQL state: 23503
```

Make column `species_id` not null

Add a unique index on columns `name` and `species_id`

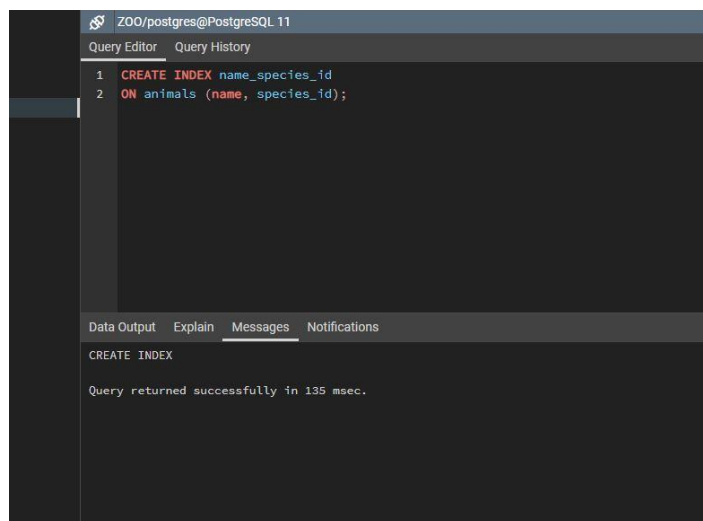


The screenshot shows a PostgreSQL query editor window titled "ZOO/postgres@PostgreSQL 11". The "Query Editor" tab is active, displaying a single SQL command: `1 ALTER TABLE animals ALTER COLUMN species_id SET NOT NULL;`. Below the editor, the "Messages" tab is selected, showing the output: `ALTER TABLE` and `Query returned successfully in 130 msec.`. Other tabs like "Data Output", "Explain", and "Notifications" are visible but not active.

```
1 ALTER TABLE animals ALTER COLUMN species_id SET NOT NULL;
```

ALTER TABLE

Query returned successfully in 130 msec.



The screenshot shows a PostgreSQL query editor window titled "ZOO/postgres@PostgreSQL 11". The "Query Editor" tab is active, displaying two SQL commands: `1 CREATE INDEX name_species_id` and `2 ON animals (name, species_id);`. Below the editor, the "Messages" tab is selected, showing the output: `CREATE INDEX` and `Query returned successfully in 135 msec.`. Other tabs like "Data Output", "Explain", and "Notifications" are visible but not active.

```
1 CREATE INDEX name_species_id
2 ON animals (name, species_id);
```

CREATE INDEX

Query returned successfully in 135 msec.

2. Races

CREATE new table 'races' with the following fields

id

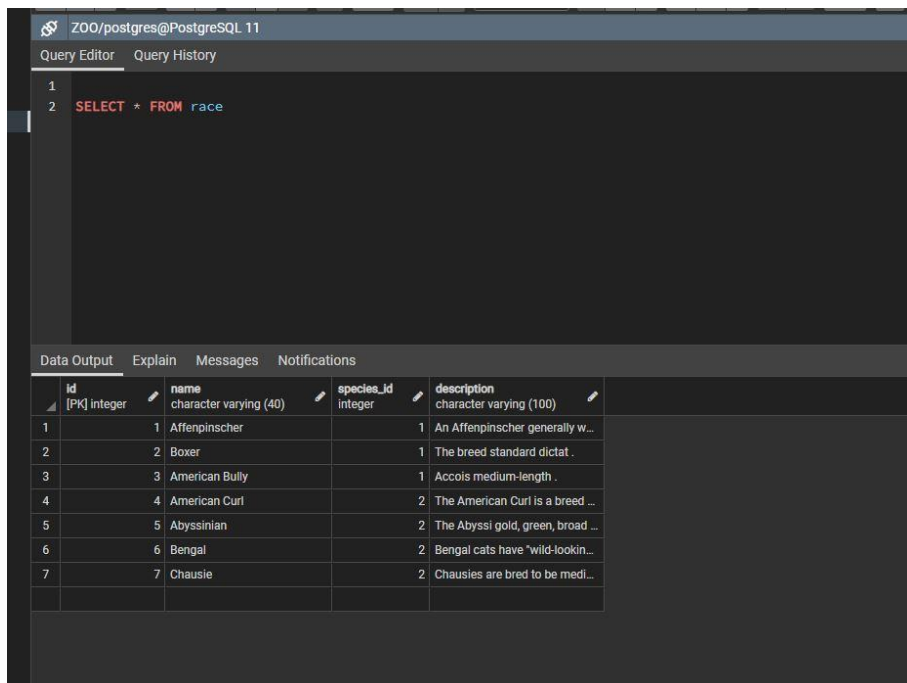
name

species_id

description

Add a primary key to the table

Add the reference key of specie



The screenshot shows a PostgreSQL query editor with a query that selects all data from a table named 'race'. Below the query editor, the 'Data Output' tab is active, displaying a table with 7 rows and 5 columns: id, name, species_id, and description. The 'id' column is marked as a primary key. The data shows various cat breeds and their descriptions, grouped by species_id (1 and 2).

id	name	species_id	description
1	Affenpinscher	1	An Affenpinscher generally w...
2	Boxer	1	The breed standard dictat .
3	American Bully	1	Accois medium-length .
4	American Curl	2	The American Curl is a breed ...
5	Abyssinian	2	The Abyssini gold, green, broad ...
6	Bengal	2	Bengal cats have "wild-lookin...
7	Chausie	2	Chausies are bred to be medi...

ZOO/postgres@PostgreSQL 11

Query EditorQuery History

```
1 ALTER TABLE animals
2 ADD COLUMN race_id INTEGER REFERENCES race(id);
```

Data OutputExplainMessagesNotifications

ALTER TABLE

Query returned successfully in 125 msec.

ZOO/postgres@PostgreSQL 11

Query EditorQuery History

```
1
2 SELECT * FROM animals
```

Data OutputExplainMessagesNotifications

id	sex	date	name	comments	species_id	race_id	mother_id	father_id
[PK] integer	enum character (1)	date timestamp without time zone	name character varying (20)	comments text	integer	integer	integer	integer
29	26 M	2015-03-10 13:40:00	Moka	[null]	1	1	[null]	[null]
30	28 M	2016-05-14 06:30:00	Fieno	[null]	2	1	[null]	[null]
31	12 F	2016-05-26 08:54:00	Call	[null]	1	2	[null]	[null]
32	14 F	2016-05-26 08:56:00	File	[null]	1	2	[null]	[null]
33	19 F	2016-05-26 09:02:00	Java	[null]	1	2	[null]	[null]
34	7 F	2015-12-06 05:18:00	Caroline	[null]	1	2	[null]	[null]
35	23 M	2014-04-12 05:23:00	Cartouche	[null]	1	3	[null]	[null]
36	17 F	2015-02-10 12:45:00	Wetva	[null]	1	3	[null]	[null]
37	21 F	2015-03-10 13:43:00	Pataude	[null]	1	3	[null]	[null]
38	27 M	2013-05-14 15:40:00	Pilou	[null]	1	3	[null]	[null]
39	33 M	2015-04-20 03:22:00	Capou	[null]	2	4	[null]	[null]
40	35 M	2016-05-14 06:42:00	Boucun	[null]	2	4	[null]	[null]
41	37 F	2016-05-14 06:45:00	Boule	[null]	2	4	[null]	[null]
42	41 F	2015-04-20 03:20:00	Silba	mute	2	4	[null]	[null]
43	44 F	2014-04-01 18:17:00	Nikita	[null]	3	4	[null]	[null]
44	31 M	2014-03-12 12:07:00	Farceur	[null]	2	4	[null]	[null]
45	43 F	2013-05-19 16:16:00	Cawette	[null]	2	6	[null]	[null]
46	40 F	2013-05-19 15:59:00	Feta	Sneily	2	6	[null]	[null]

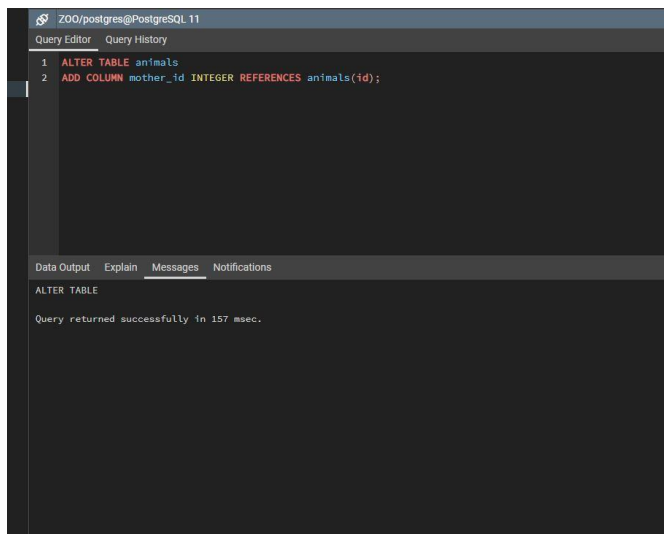
23°C Mostly cloudy

3. Parents

Add fields: `mother_id` and `father_id`

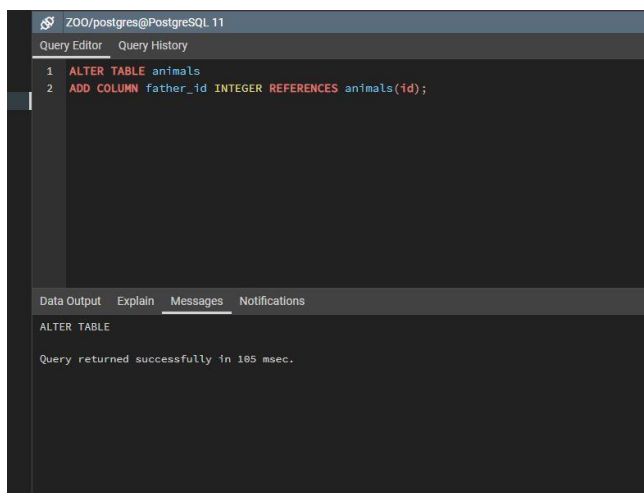
Add Foreign Key to both (reference table is the same table)

Give some animals a mother and a father (`insert_race.txt`)




```
ZOO/postgres@PostgreSQL 11
Query Editor  Query History
1 ALTER TABLE animals
2 ADD COLUMN mother_id INTEGER REFERENCES animals(id);

Data Output  Explain  Messages  Notifications
ALTER TABLE
Query returned successfully in 157 msec.
```



```
ZOO/postgres@PostgreSQL 11
Query Editor  Query History
1 ALTER TABLE animals
2 ADD COLUMN father_id INTEGER REFERENCES animals(id);

Data Output  Explain  Messages  Notifications
ALTER TABLE
Query returned successfully in 105 msec.
```



ZOO/postgres@PostgreSQL 11

Query Editor
Query History

```

1
2 SELECT * FROM animals

```

Data Output
Explain
Messages
Notifications

	id [PK] integer	sex character (1)	dob timestamp without time zone	name character varying (30)	comments text	species_id integer	race_id integer	mother_id integer	father_id integer
43	44	F	2014-04-01 18:17:00	Nikkita	[null]		3	4	[null]
44	31	M	2014-03-12 12:07:00	Farceur	[null]		2	4	[null]
45	43	F	2013-05-19 16:16:00	Cawette	[null]		2	6	[null]
46	40	F	2013-05-19 15:59:00	Feta	Smelly		2	6	[null]
47	30	M	2015-02-20 15:45:00	Filou	[null]		2	6	[null]
48	32	M	2013-05-19 16:17:00	Caribou	[null]		2	6	[null]
49	42	F	2014-03-12 11:54:00	Cracotte	[null]		2	6	[null]
50	34	M	2013-05-19 16:56:00	Raccou	no tail		2	6	[null]
51	39	F	2014-03-12 12:00:00	Milla	[null]		2	6	[null]
52	8	M	2015-09-11 15:38:00	Bagherra	[null]		2	6	[null]
53	36	F	2013-05-19 16:06:00	Callune	[null]		2	7	[null]
54	38	F	2015-04-20 03:26:00	Zara	[null]		2	7	[null]
55	29	M	2014-03-12 12:05:00	Zonko	[null]		2	7	[null]
56	1	M	2017-04-05 13:43:00	Rox	Bite hard		1	1	18
57	10	M	2017-07-21 15:41:00	Bobo	[null]		1	[null]	7
58	3	F	2017-09-13 15:02:00	Snory	[null]		2	4	41
59	2	[null]	2017-03-24 02:23:00	Roucky	[null]		2	[null]	40

