

Selecting or Projecting Data

Let us understand different aspects of projecting data. We primarily using **SELECT** to project the data.

- We can project all columns using ***** or some columns using column names.
- We can provide aliases to a column or expression using **AS** in **SELECT** clause.
- **DISTINCT** can be used to get the distinct records from selected columns. We can also use **DISTINCT *** to get unique records using all the columns.
- As part of **SELECT** clause we can have aggregate functions such as **count**, **sum** etc.

```
%load_ext sql
```

The sql extension is already loaded. To reload it, use:
%reload_ext sql

```
%env  
DATABASE_URL=postgresql://itversity_retail_user:retail_password@localhost:5432/itversity_retail_db
```

```
env:  
DATABASE_URL=postgresql://itversity_retail_user:retail_password@localhost:5432/itversity_retail_db
```

```
%sql SELECT * FROM orders LIMIT 10
```

* postgresql://itversity_retail_user:***@localhost:5432/itversity_retail_db
10 rows affected.

order_id	order_date	order_customer_id	order_status
1	2013-07-25 00:00:00	11599	CLOSED
2	2013-07-25 00:00:00	256	PENDING_PAYMENT
3	2013-07-25 00:00:00	12111	COMPLETE
4	2013-07-25 00:00:00	8827	CLOSED
5	2013-07-25 00:00:00	11318	COMPLETE
6	2013-07-25 00:00:00	7130	COMPLETE
7	2013-07-25 00:00:00	4530	COMPLETE
8	2013-07-25 00:00:00	2911	PROCESSING
9	2013-07-25 00:00:00	5657	PENDING_PAYMENT
10	2013-07-25 00:00:00	5648	PENDING_PAYMENT

```
%%sql  
  
SELECT * FROM information_schema.columns  
WHERE table_catalog = 'itversity_retail_db'  
AND table_name = 'orders'
```

* postgresql://itversity_retail_user:***@localhost:5432/itversity_retail_db
4 rows affected.

table_catalog	table_schema	table_name	column_name	ordinal_position	column_default
itversity_retail_db	public	orders	order_id	1	No
itversity_retail_db	public	orders	order_date	2	No
itversity_retail_db	public	orders	order_customer_id	3	No
itversity_retail_db	public	orders	order_status	4	No

```
%%sql
```

```
SELECT order_customer_id, order_date, order_status
FROM orders
LIMIT 10
```

```
* postgresql://itversity_retail_user:***@localhost:5432/itversity_retail_db
10 rows affected.
```

order_customer_id	order_date	order_status
11599	2013-07-25 00:00:00	CLOSED
256	2013-07-25 00:00:00	PENDING_PAYMENT
12111	2013-07-25 00:00:00	COMPLETE
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7130	2013-07-25 00:00:00	COMPLETE
4530	2013-07-25 00:00:00	COMPLETE
2911	2013-07-25 00:00:00	PROCESSING
5657	2013-07-25 00:00:00	PENDING_PAYMENT
5648	2013-07-25 00:00:00	PENDING_PAYMENT

```
%%sql
```

```
SELECT order_customer_id,
       to_char(order_date, 'yyyy-MM'),
       order_status
FROM orders
LIMIT 10
```

```
* postgresql://itversity_retail_user:***@localhost:5432/itversity_retail_db
10 rows affected.
```

order_customer_id	to_char	order_status
11599	2013-07	CLOSED
256	2013-07	PENDING_PAYMENT
12111	2013-07	COMPLETE
8827	2013-07	CLOSED
11318	2013-07	COMPLETE
7130	2013-07	COMPLETE
4530	2013-07	COMPLETE
2911	2013-07	PROCESSING
5657	2013-07	PENDING_PAYMENT
5648	2013-07	PENDING_PAYMENT

```
%%sql
```

```
SELECT order_customer_id,
       to_char(order_date, 'yyyy-MM') AS order_month,
       order_status
FROM orders
LIMIT 10
```

```
* postgresql://itversity_retail_user:***@localhost:5432/itversity_retail_db
10 rows affected.
```

order_customer_id	order_month	order_status
11599	2013-07	CLOSED
256	2013-07	PENDING_PAYMENT
12111	2013-07	COMPLETE
8827	2013-07	CLOSED
11318	2013-07	COMPLETE
7130	2013-07	COMPLETE
4530	2013-07	COMPLETE
2911	2013-07	PROCESSING
5657	2013-07	PENDING_PAYMENT
5648	2013-07	PENDING_PAYMENT

```
%%sql
```

```
SELECT DISTINCT to_char(order_date, 'yyyy-MM') AS order_month
FROM orders
```

```
* postgresql://itversity_retail_user:***@localhost:5432/itversity_retail_db
13 rows affected.
```

order_month

2014-01
2014-05
2013-12
2013-11
2014-04
2014-07
2014-03
2013-08
2013-10
2013-07
2014-02
2013-09
2014-06

```
%sql SELECT count(1) FROM orders
```

```
* postgresql://itversity_retail_user:***@localhost:5432/itversity_retail_db
1 rows affected.
```

count

68883

```
%%sql
```

```
SELECT count(DISTINCT to_char(order_date, 'yyyy-MM')) AS distinct_month_count
FROM orders
```

```
* postgresql://itversity_retail_user:***@localhost:5432/itversity_retail_db
1 rows affected.
```

distinct_month_count

13