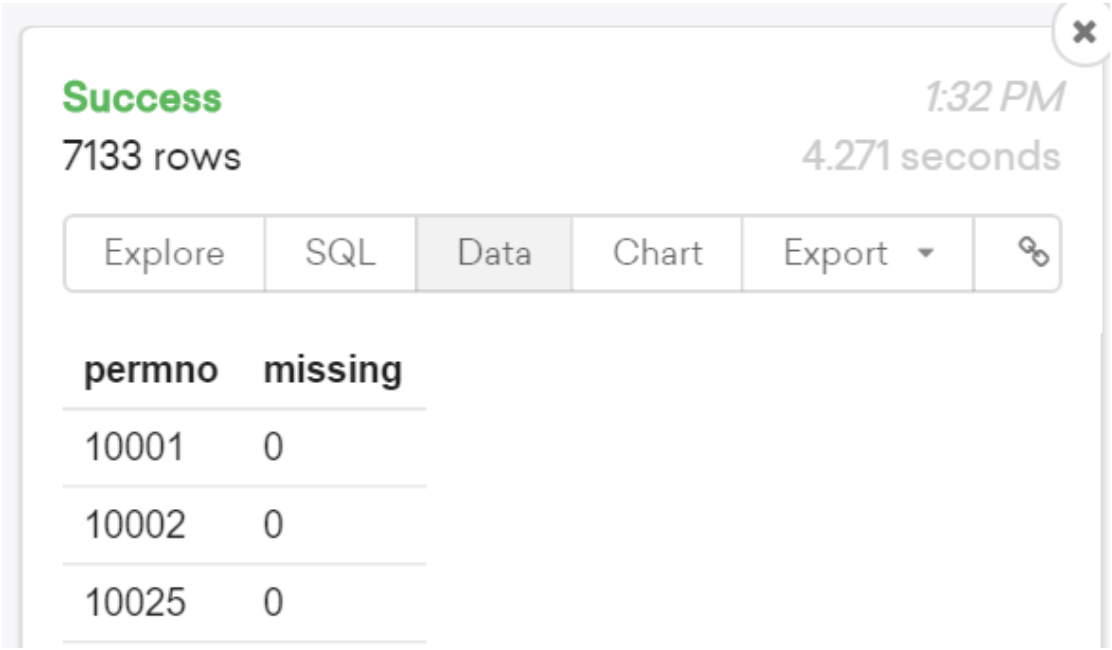
--question 5.1 #should answer why

```
select * FROM (select permno, max(prc) as max_2010 FROM stocks2016.d2010 group by permno) as df
    inner join
    (select * FROM (select permno, max(prc) as max_2011 FROM stocks2016.d2011 group by permno) as diff) as final
    on df.permno = final.permno;
```



Success

7133 rows

1:32 PM

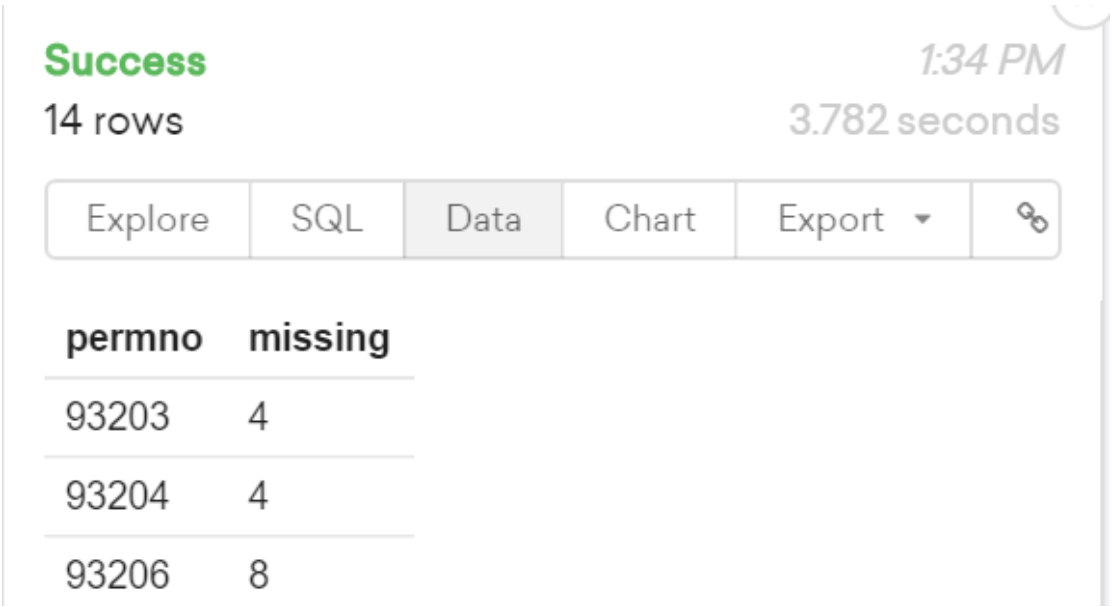
4.271 seconds

Explore | SQL | Data | Chart | Export

permno	missing
10001	0
10002	0
10025	0

--question 5.2 #？？？

```
select * FROM (select permno as p FROM stocks2016.d2010) as df left join (select permno FROM stocks2016.d2011) as final on df.p = final.permno;
```



Success

14 rows

1:34 PM

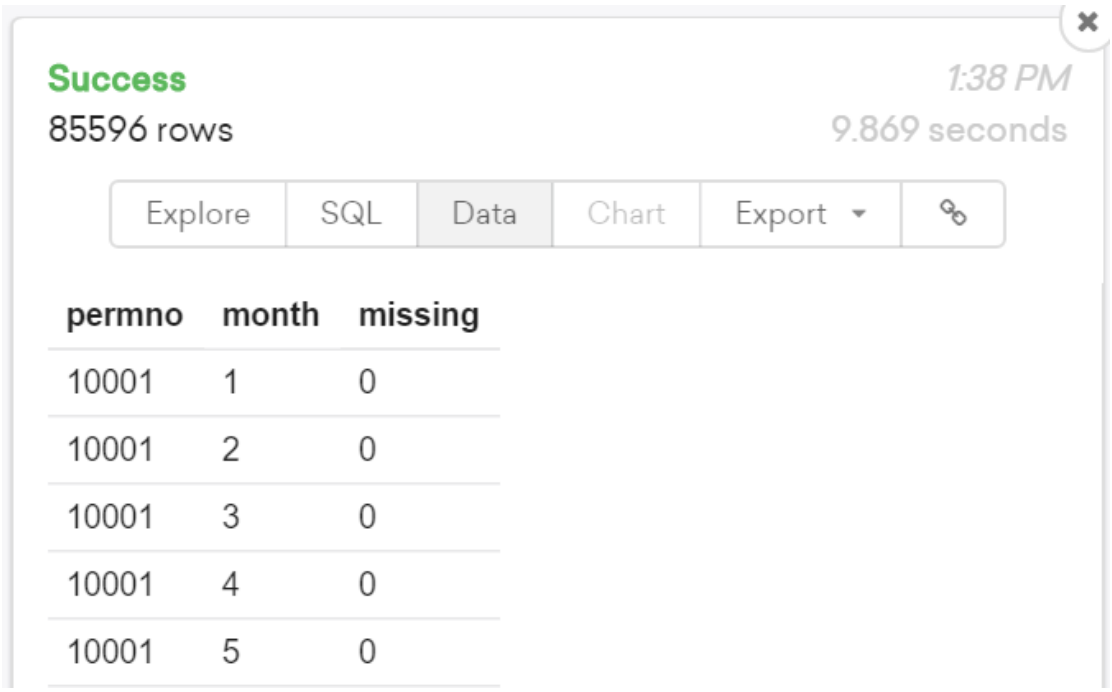
3.782 seconds

Explore | SQL | Data | Chart | Export

permno	missing
93203	4
93204	4
93206	8

--question 5.3

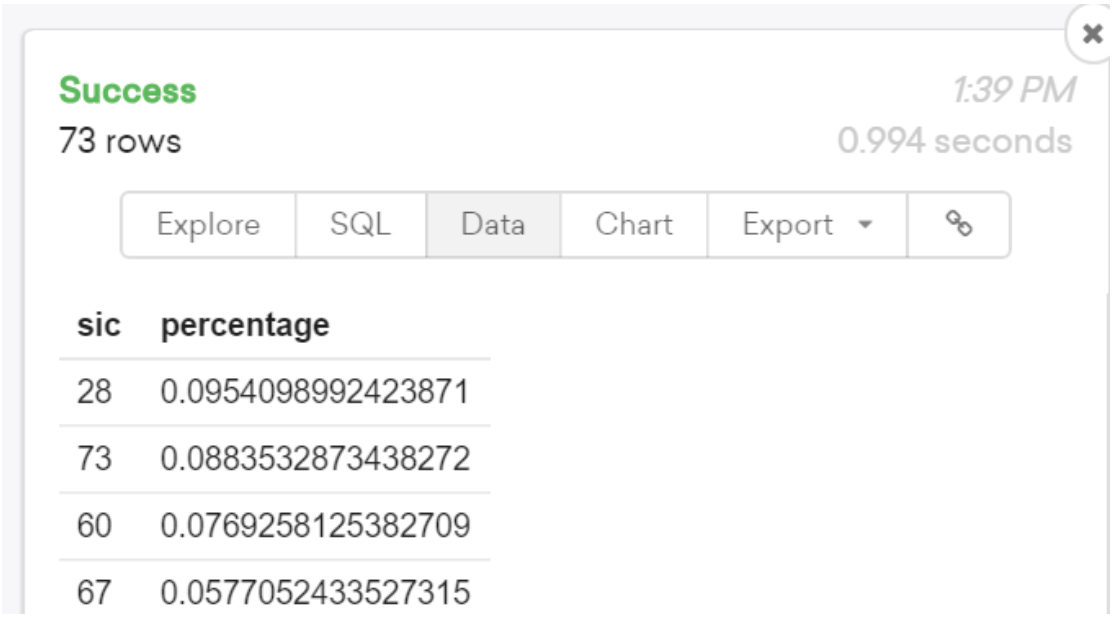
select permno, max(retdate::timestamp) as last, min(retdate::timestamp) as first FROM stocks2016.d2010 group by permno;



permno	month	missing
10001	1	0
10001	2	0
10001	3	0
10001	4	0
10001	5	0

--question 5B4 shrout * prc

```
select LHS.SIC, LHS.marketValue/RHS.SumOfValue as percentage FROM
(select sum(shrout*prc) as marketValue, trunc(hsic/100) as SIC
FROM stocks2016.d2010
where retdate = '2010-01-11'
and prc is not null
and shrout is not null
and hsic is not null
group by SIC) as LHS
cross join
(select sum(marketValue) as SumOfValue FROM (select sum(shrout*prc) as marketValue, trunc(hsic/100) as SIC
FROM stocks2016.d2010
where retdate = '2010-01-11' group by SIC) as sin ) as RHS
ORDER BY percentage desc;
--the largest one is sic 28
```

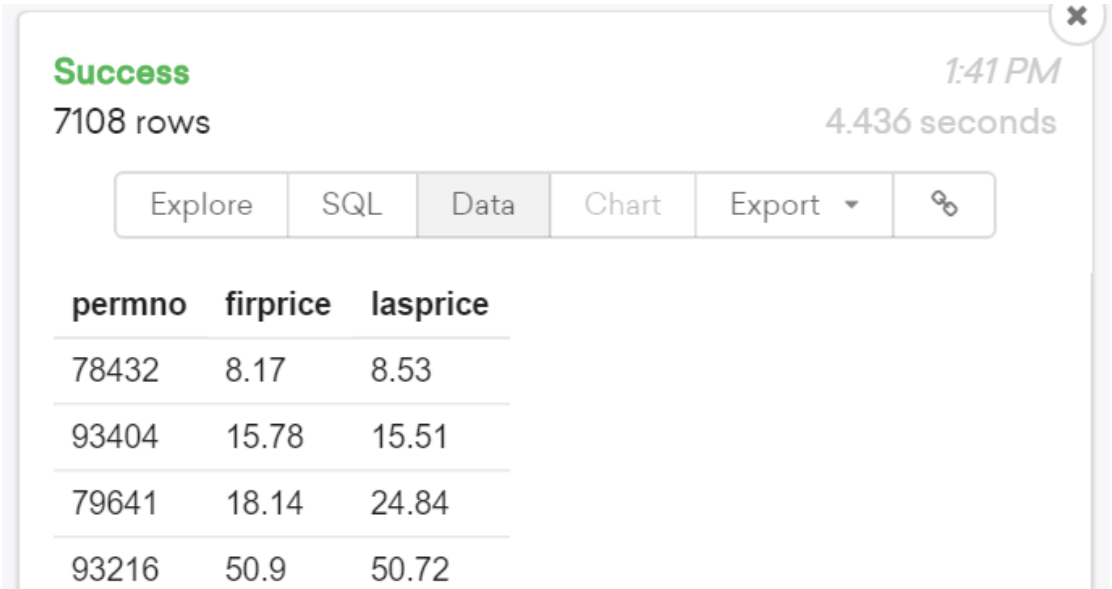


Success
73 rows
1:39 PM
0.994 seconds

Explore | SQL | Data | Chart | Export

sic	percentage
28	0.0954098992423871
73	0.0883532873438272
60	0.0769258125382709
67	0.0577052433527315

```
--question 5B5
select LHS.permno, RHS.FirPrice, RHS2.LasPrice FROM
(select permno, min(retdate) as FirstDay, max(retdate) as LastDay
FROM
stocks2016.d2010 group by permno) as LHS
left join
(select permno, retdate, prc as FirPrice FROM stocks2016.d2010) as RHS
on    LHS.permno = RHS.permno and LHS.FirstDay = RHS.retdate
left join
(select permno, retdate, prc as LasPrice FROM stocks2016.d2010) as RHS2
ON LHS.permno = RHS2.permno AND LHS.LastDay = RHS2.retdate;
```

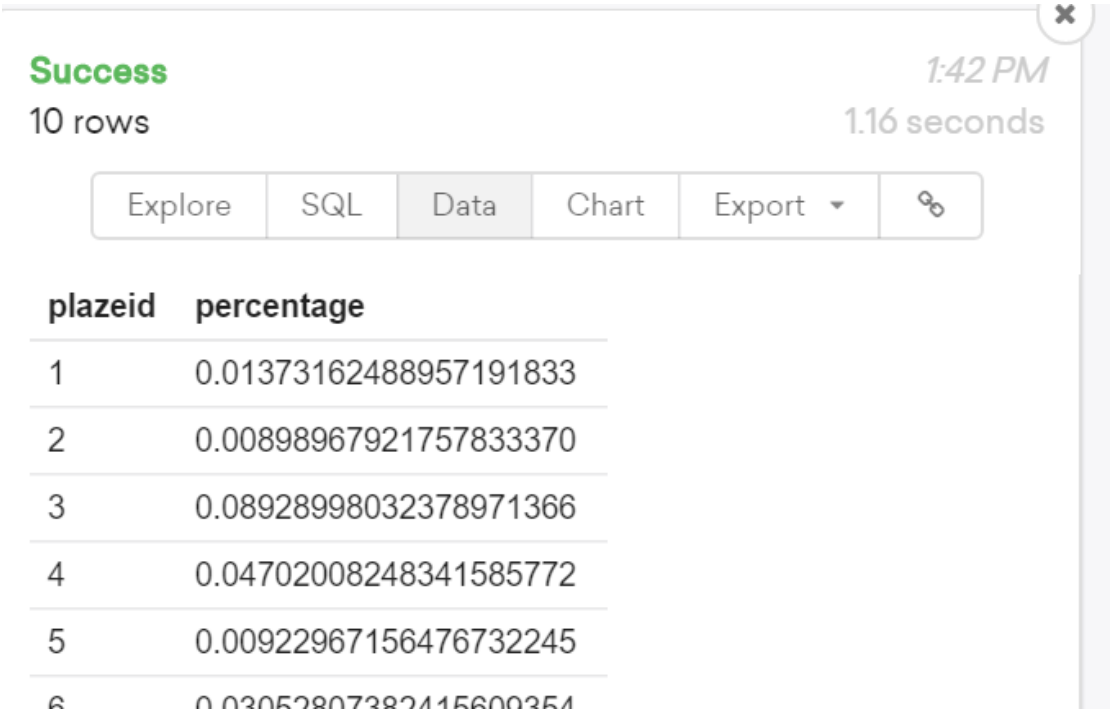


Success
7108 rows
1:41 PM
4.436 seconds

Explore | SQL | Data | Chart | Export

permno	firprice	lasprice
78432	8.17	8.53
93404	15.78	15.51
79641	18.14	24.84
93216	50.9	50.72

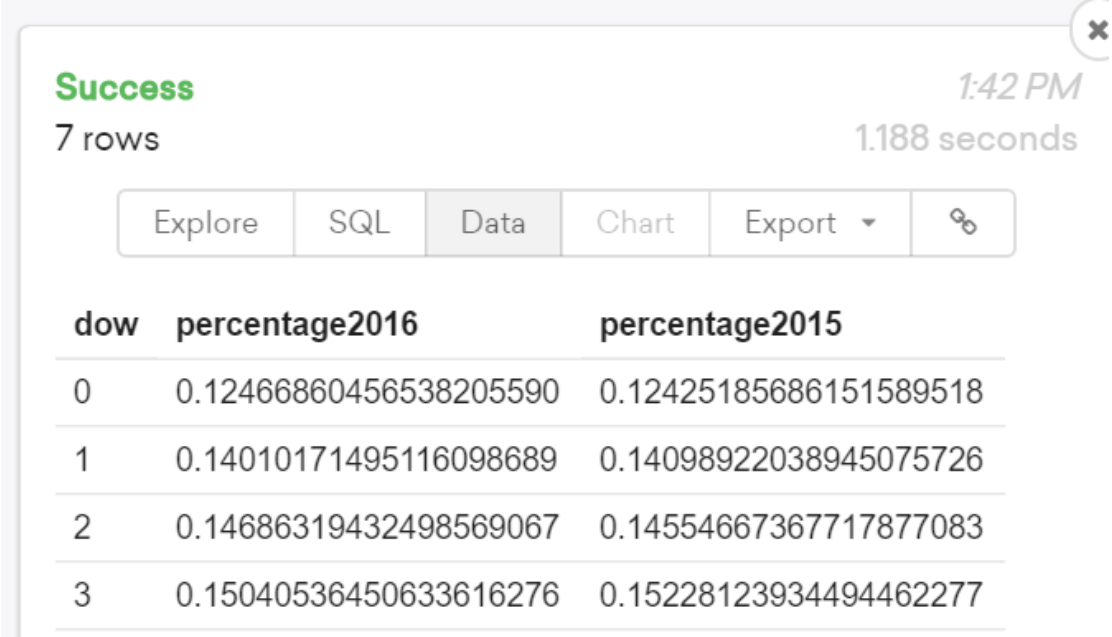
--question 5B6
select LHS.PlazeID, (RHS.later - LHS.origin)/LHS.origin as percentage
FROM
(select PlazeID, avg(ez) as origin
FROM
MTA where date_part('year',date)=2015 and
date_part('dow', date) = 1
group by PlazeID) as LHS
left join
(select PlazeID, avg(ez) as later
FROM
MTA where date_part('year', date) = 2016 and
date_part('dow',date)= 1
group by PlazeID) as RHS
on LHS.PlazeID = RHS.PlazeID;



plazeid	percentage
1	0.01373162488957191833
2	0.00898967921757833370
3	0.08928998032378971366
4	0.04702008248341585772
5	0.00922967156476732245
6	0.03052807382415609354

--question 5B7
select LHS.DOW, LHS.Ez2016/RHS2.sum2016 as percentage2016,
RHS3.Ez2015/RHS4.sum2015 as percentage2015 FROM
(select date_part('dow', date) as DOW,
sum(ez) as Ez2016 FROM MTA
where date_part('year',date) = 2016
and PlazeID = 1
group by DOW) as LHS
cross join

```
(select sum(ez) as sum2016 FROM MTA
where date_part('year', date)= 2016
and PlazeID =1) as RHS2
left join
(select date_part('dow',date) as DOW, sum(ez) as Ez2015 FROM MTA
where date_part('year',date) =2015
and PlazeID = 2
group by date_part('dow',date))
as RHS3 on LHS.DOW = RHS3.DOW
cross join
(select sum(ez) as sum2015 FROM MTA
where date_part('year',date) = 2015
and PlazeID = 2) as RHS4;
```



dow	percentage2016	percentage2015
0	0.12466860456538205590	0.12425185686151589518
1	0.14010171495116098689	0.14098922038945075726
2	0.14686319432498569067	0.14554667367717877083
3	0.15040536450633616276	0.15228123934494462277

```
--question 5B8
select hour, max(ez) FROM MTA where PlazeID = 1 and Direction = 'O' group by hour;
```

Success
24 rows
1:43 PM
0.451 seconds

Explore | SQL | Data | Chart | Export

hour	max
13	2520
14	2605
20	2556
9	2463

--question 5B9
select concat(date_part('dow',date), hour) as DowHour,
max(ez) FROM MTA where PlazeID =1 and Direction = 'O'
group by DowHour;

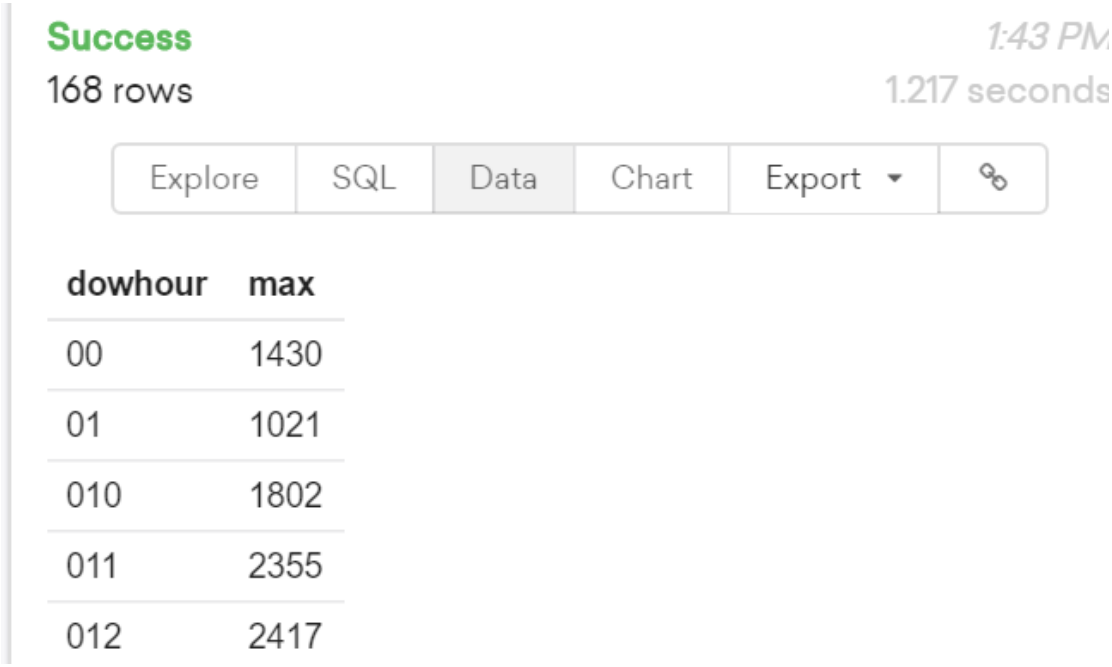
Success
168 rows
1:43 P
1.217 secon

Explore | SQL | Data | Chart | Export

dowhour	max
00	1430
01	1021
010	1802
011	2355
012	2417
013	2397

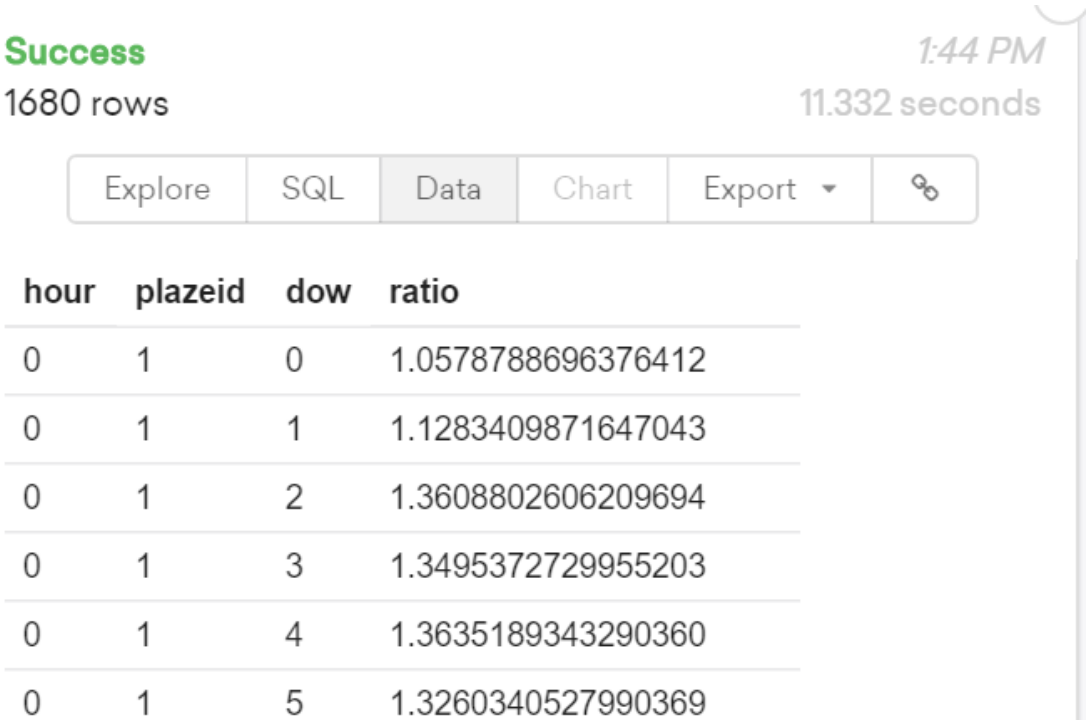
--question 5B10
select LHS.hour, LHS.MaxIn1, RHS.MinOut2, RHS2.Max3 FROM
(select hour, max(ez) as MaxIn1 FROM MTA

```
where PlazeID = 1 and Direction = 'I'
group by hour) as LHS
left join
(select hour, min(ez) as MinOut2 FROM MTA
where PlazeID = 2 and Direction = 'O'
group by hour) as RHS
on LHS.hour = RHS.hour
left join
(select hour, max(ez) as Max3 FROM MTA
where PlazeID = 3 group by hour) as RHS2
on LHS.hour = RHS2.hour;
```



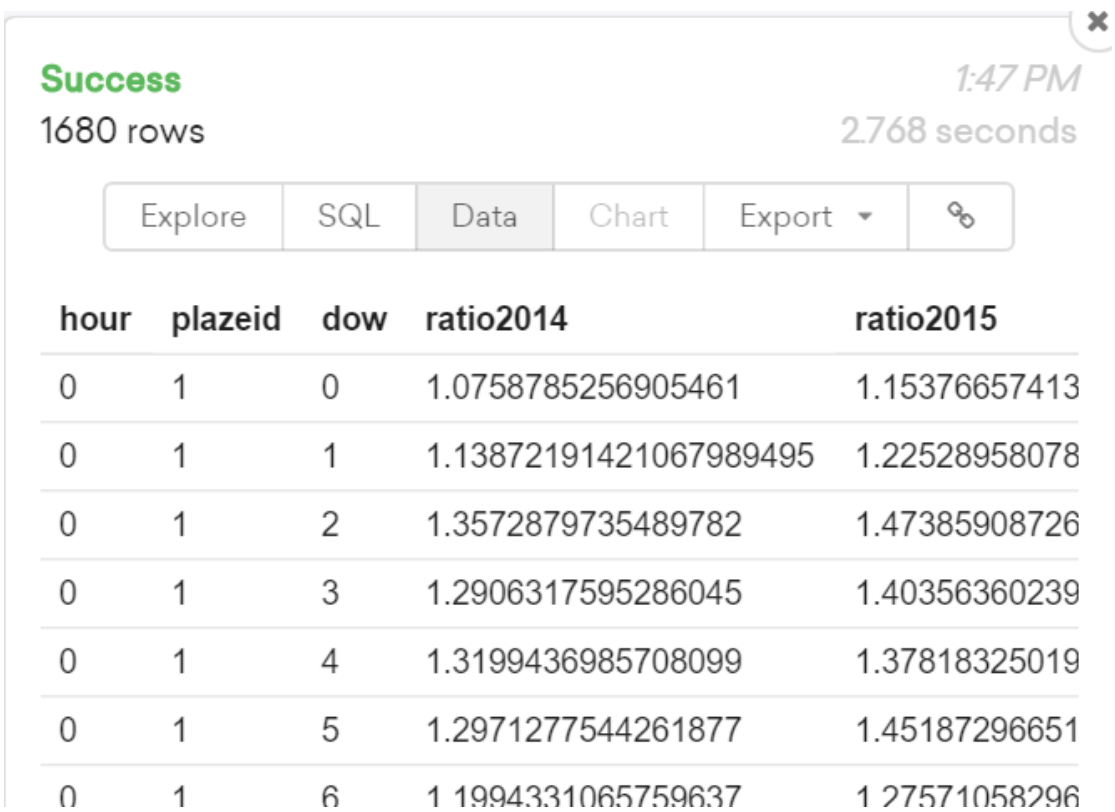
dowhour	max
00	1430
01	1021
010	1802
011	2355
012	2417

```
--question5b11
select LHS.hour, LHS.PlazeID,LHS.dow, case when RHS.Out = 0 then 0 else LHS.In/RHS.Out end as ratio
FROM
(select hour, PlazeID, date_part('dow',date) as dow, sum(case when Direction = 'I' then ez+Cash else 0 end) as In
FROM MTA group by hour, PlazeID,dow) as LHS
left join
(select hour, PlazeID, date_part('dow',date) as dow, sum(case when Direction = 'O' then ez+Cash else 0 end) as Out
FROM MTA group by hour, PlazeID,dow) as RHS
on LHS.hour = RHS.hour and LHS.PlazeID = RHS.PlazeID and LHS.dow = RHS.dow;
```



hour	plazeid	dow	ratio
0	1	0	1.0578788696376412
0	1	1	1.1283409871647043
0	1	2	1.3608802606209694
0	1	3	1.3495372729955203
0	1	4	1.3635189343290360
0	1	5	1.3260340527990369

```
--question5b12
select LHS.hour, LHS.PlazeID,LHS.dow, case when RHS.Out = 0 then null else LHS.In/RHS.Out end as ratio2014,
case when RHS3.Out = 0 then null else RHS2.In/RHS3.Out end as ratio2015
FROM
(select hour, PlazeID, date_part('dow',date) as dow, sum(case when Direction = 'I' then ez+Cash else 0 end) as In
FROM MTA where date_part('year',date) = 2014 group by hour, PlazeID,dow) as LHS
left join
(select hour, PlazeID, date_part('dow',date) as dow, sum(case when Direction = 'O' then ez+Cash else 0 end) as Out
FROM MTA where date_part('year', date)=2014 group by hour, PlazeID,dow) as RHS
on LHS.hour = RHS.hour and LHS.PlazeID = RHS.PlazeID and LHS.dow = RHS.dow
left join
(select hour, PlazeID, date_part('dow',date) as dow, sum(case when Direction = 'I' then ez+Cash else 0 end) as In
FROM MTA where date_part('year',date) = 2015 group by hour, PlazeID,dow) as RHS2
on LHS.hour = RHS2.hour and LHS.PlazeID = RHS2.PlazeID and LHS.dow = RHS2.dow
left join
(select hour, PlazeID, date_part('dow',date) as dow, sum(case when Direction = 'O' then ez+Cash else 0 end) as Out
FROM MTA where date_part('year', date)=2015 group by hour, PlazeID,dow) as RHS3
on LHS.hour = RHS3.hour and LHS.PlazeID = RHS3.PlazeID and LHS.dow = RHS3.dow;
```



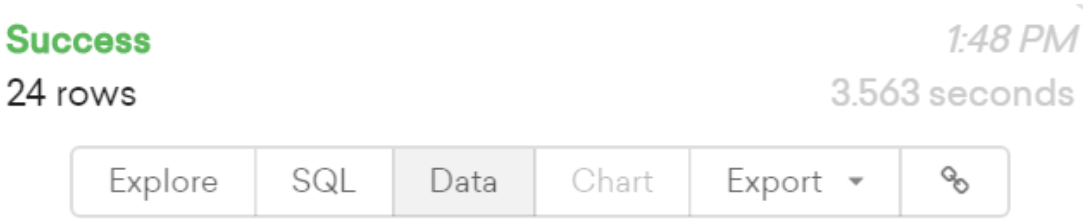
Success
1680 rows
1:47 PM
2.768 seconds

Explore | SQL | Data | Chart | Export

hour	plazeid	dow	ratio2014	ratio2015
0	1	0	1.0758785256905461	1.15376657413
0	1	1	1.13872191421067989495	1.22528958078
0	1	2	1.3572879735489782	1.47385908726
0	1	3	1.2906317595286045	1.40356360239
0	1	4	1.3199436985708099	1.37818325019
0	1	5	1.2971277544261877	1.45187296651
0	1	6	1.1994331065759637	1.27571058296

```
--question5b13
select LHS.hour, LHS.dow, case when RHS.Out = 0 then 0 else LHS.In/RHS.Out end as ratio
FROM
(select hour, date_part('dow',date) as dow, sum(ez) + sum(cash) as In
FROM MTA where date in (select date
FROM
(select date, sum(ez)+sum(cash) as total FROM MTA group by date) as a
where total in
(select max(total)
FROM (select date, sum(ez)+sum(cash) as total
FROM MTA
group by date) as b)) and Direction = 'I'
group by hour, dow) as LHS
left join
(select hour, date_part('dow',date) as dow, sum(ez) + sum(cash) as Out
FROM MTA
where date in (select date
FROM
(select date, sum(ez)+sum(cash) as total FROM MTA group by date) as a
where total in
(select max(total)
FROM (select date, sum(ez)+sum(cash) as total
```

```
FROM MTA
group by date) as b)) and Direction = 'O'
group by hour, dow) as RHS
on LHS.hour = RHS.hour and LHS.dow = RHS.dow;
```



hour	dow	ratio
0	5	1.2135191637630662
1	5	1.3367202268431002
2	5	1.2027215631542219
3	5	1.0860759493670886
4	5	1.0811113600717006
5	5	1.4489927825056555
6	5	1.7360456627065773

```
--question5b14
select permno, sum(index)-sum(exist) as missing FROM
(select LHS.permno, case when RHS3.data is null then 0 else 1 end as exist,
case when RHS.fullDay < RHS2.FirstDay then 0 else 1 end as index
FROM
(select distinct permno FROM stocks2016.d2010) as LHS
cross join
(select distinct retdate as fullDay FROM stocks2016.d2010) as RHS
left join
(select permno as stockName, retdate as data FROM stocks2016.d2010) as RHS3
on LHS.permno = RHS3.stockName and RHS.fullDay = RHS3.data
left join
(select permno, min(retdate) as FirstDay FROM stocks2016.d2010
group by permno) as RHS2
on LHS.permno = RHS2.permno) as whole
group by permno;
```

Success *1:48 PM*

7108 rows 5.981 seconds

Explore | SQL | Data | Chart | Export |

permno	missing
10001	0
10002	0
10025	0
10026	0
10028	0
10032	0
10044	0
10051	0
10065	0
10078	236