Part A

Question 1

[1pt] List car rental companies which have a mileage of at least 27 miles/gallon.

```
select *
from bycar
where MILEAGE>=27;
```

Script Output | Query Result

SQL | All Rows Fetched: 3 in 0.015 seco

	TID	RENTALCOMPANY	MILEAGE
1	16	Personal	30
2	20	Personal	29
3	21	Personal	27

Question 2

[1pt] List trip IDs taken on train costing strictly more than $150.

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Worksheet | Query Builder

```
select  TID
from trips
where TRAVELMODE='Train' and Fare>150;
```

Query Result

SQL | All Rows Fetched: 5 in 0.018 seconds

	TID
1	4
2	6
3	10
4	12
5	24

OR

Start Page | CSC452_Retake

Worksheet | Query Builder

```
select  bytrain.TID
from bytrain, trips
where trips.tid = bytrain.TID and trips.FARE>150;
```

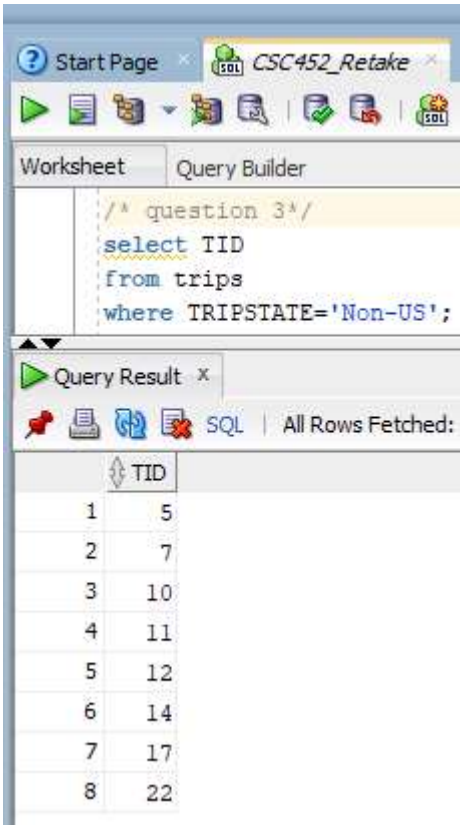
Query Result

SQL | All Rows Fetched: 5 in 0.018 seconds

	TID
1	4
2	6
3	10
4	12
5	24

Question 3

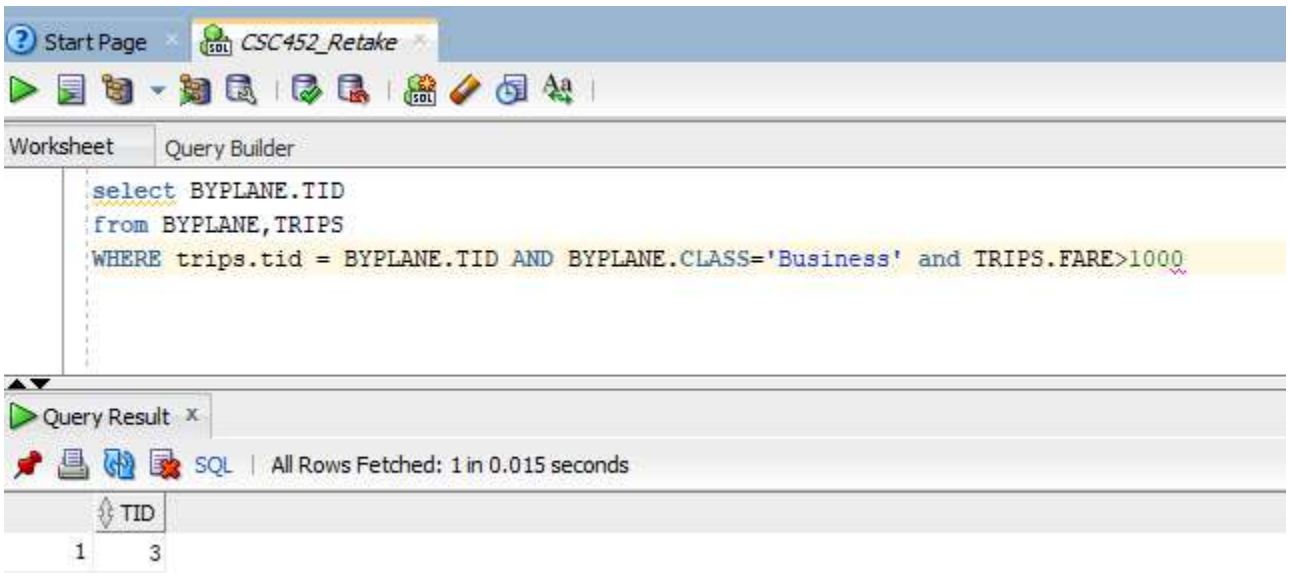
1. [1pt] Find trip IDs and their fare that are not taken in the US i.e., `Non-US` trips.



	TID
1	5
2	7
3	10
4	11
5	12
6	14
7	17
8	22

Question 4

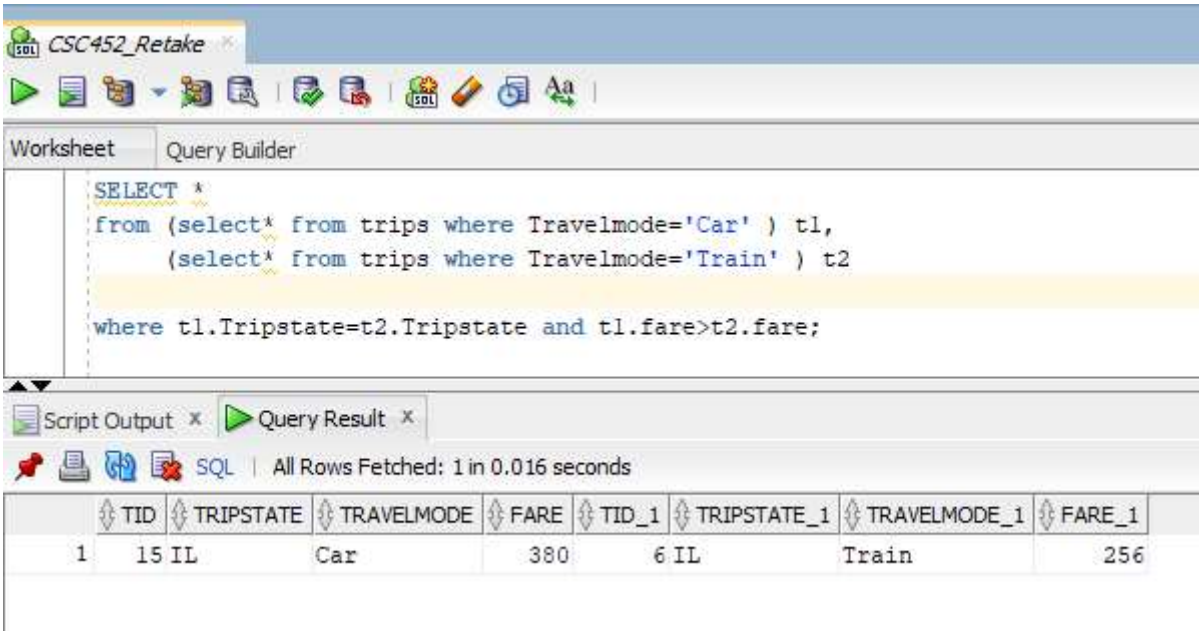
[1pt] Find the business class plane trip IDs that are greater than $1000.



	TID
1	3

Question 5

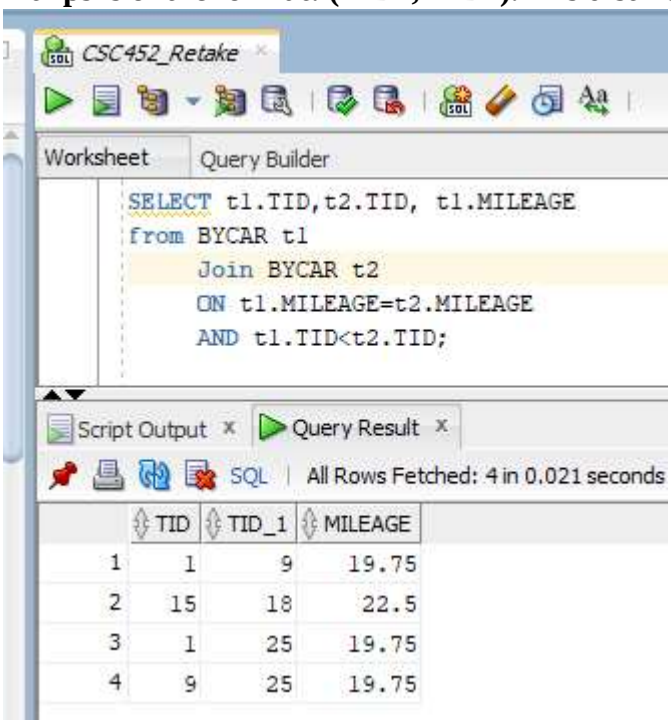
[2pt] Find any car trip more expensive than a trip taken on a train in the same state or outside the country.



	TID	TRIPSTATE	TRAVELMODE	FARE	TID_1	TRIPSTATE_1	TRAVELMODE_1	FARE_1
1	15	IL	Car	380	6	IL	Train	256

Question 6

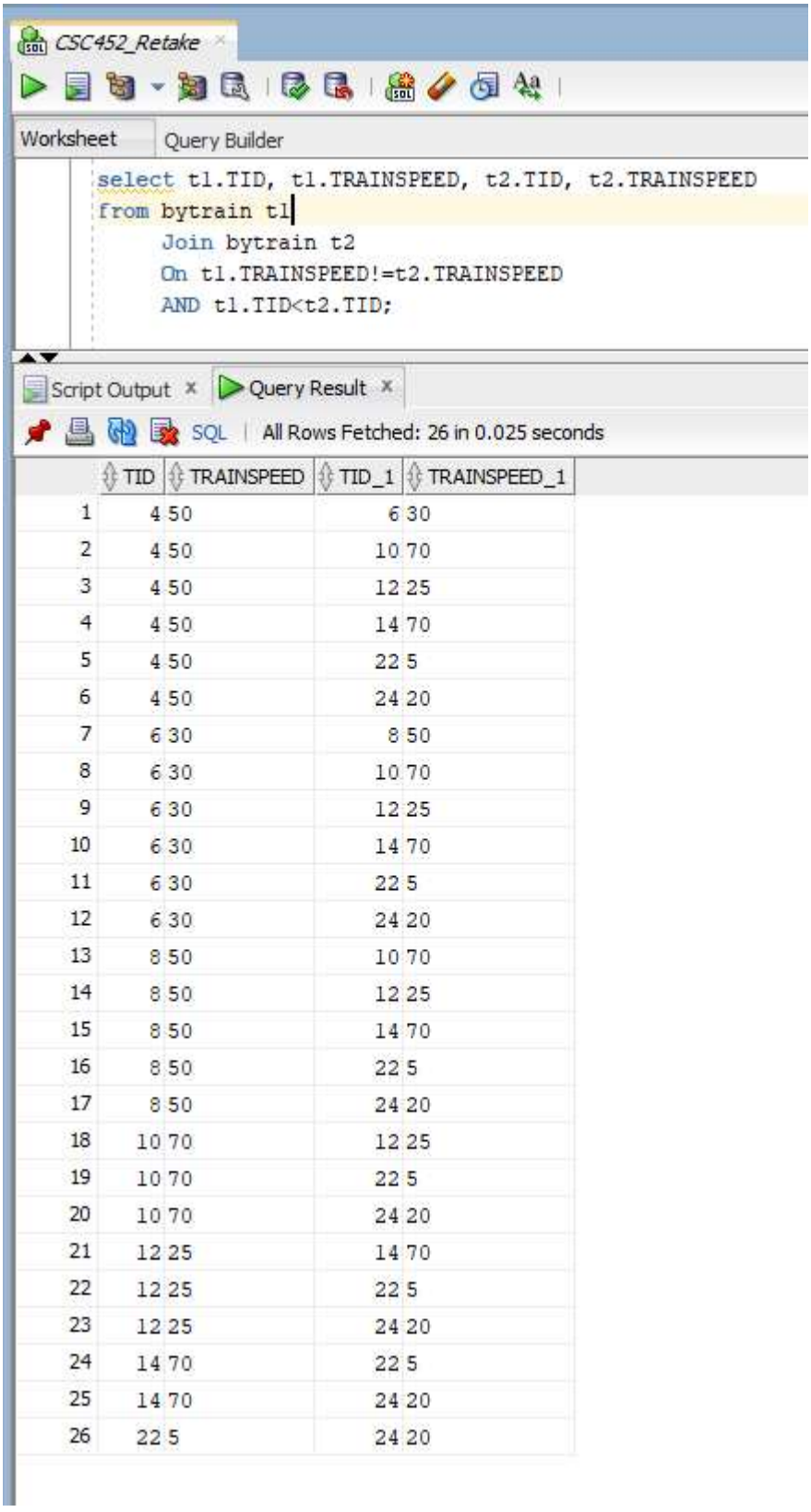
[2pt] List pairs of distinct trips that have exactly the same value of mileage. **Note a pair of distinct trips is of the format: (TID1, TID2).This distinct pair is not the same as the pair (TID2, TID1)**



	TID	TID_1	MILEAGE
1	1	9	19.75
2	15	18	22.5
3	1	25	19.75
4	9	25	19.75

Question 7

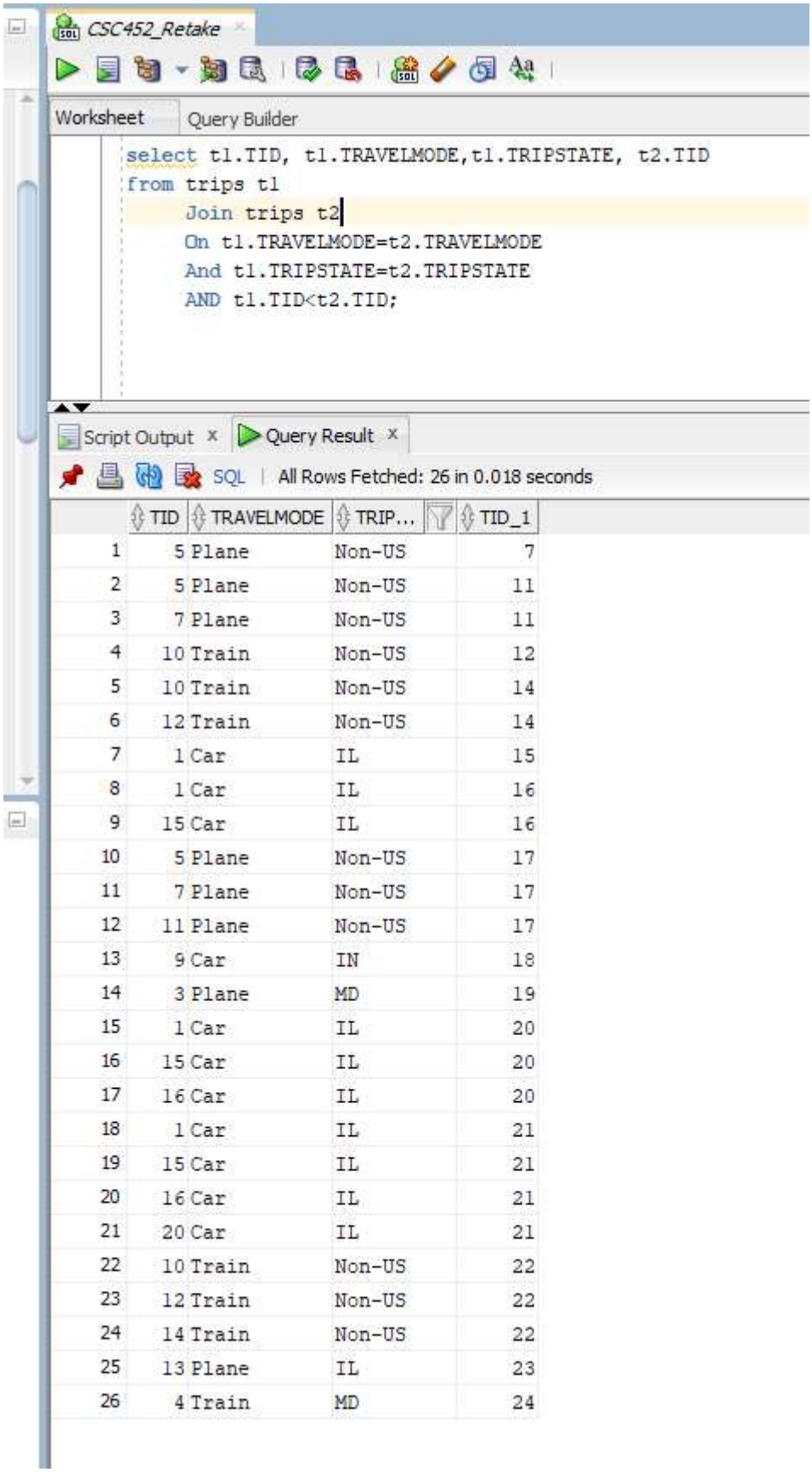
[2pt] List pairs of distinct train trips that do not have the same speed.



	TID	TRAINSPEED	TID_1	TRAINSPEED_1
1	4	50	6	30
2	4	50	10	70
3	4	50	12	25
4	4	50	14	70
5	4	50	22	5
6	4	50	24	20
7	6	30	8	50
8	6	30	10	70
9	6	30	12	25
10	6	30	14	70
11	6	30	22	5
12	6	30	24	20
13	8	50	10	70
14	8	50	12	25
15	8	50	14	70
16	8	50	22	5
17	8	50	24	20
18	10	70	12	25
19	10	70	22	5
20	10	70	24	20
21	12	25	14	70
22	12	25	22	5
23	12	25	24	20
24	14	70	22	5
25	14	70	24	20
26	22	5	24	20

Question 8

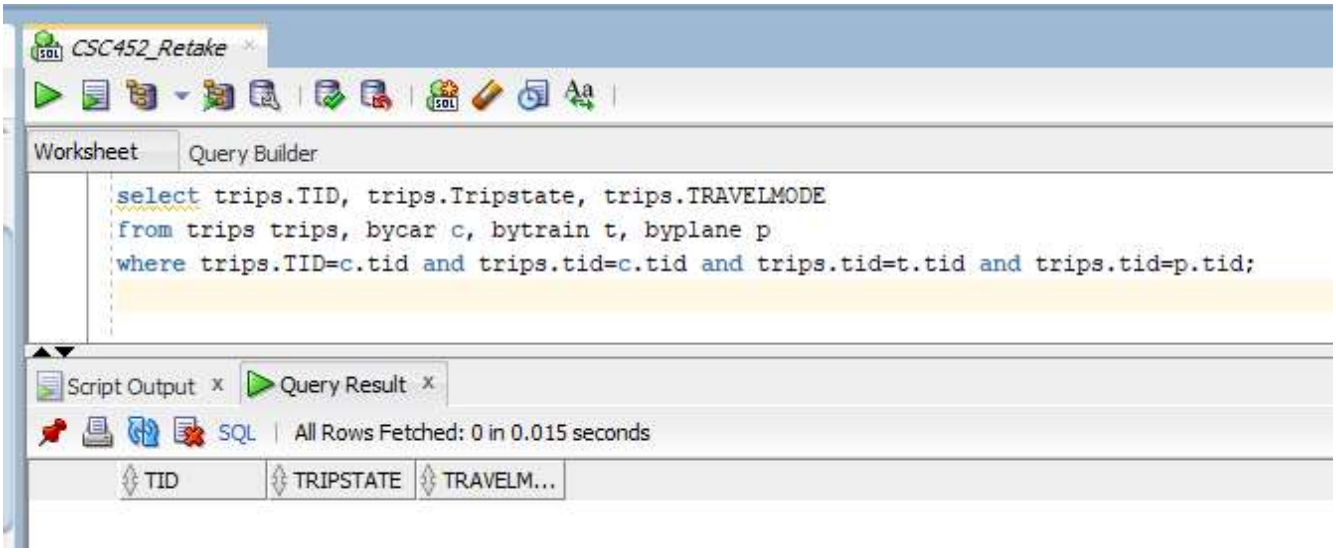
[2pt] Find those pair of trips in the same state with the same mode of travel. List such pairs only once. In other words, given a pair (TID1,TID2) do NOT list (TID2,TID1).



	TID	TRAVELMODE	TRIP...	TID_1
1	5	Plane	Non-US	7
2	5	Plane	Non-US	11
3	7	Plane	Non-US	11
4	10	Train	Non-US	12
5	10	Train	Non-US	14
6	12	Train	Non-US	14
7	1	Car	IL	15
8	1	Car	IL	16
9	15	Car	IL	16
10	5	Plane	Non-US	17
11	7	Plane	Non-US	17
12	11	Plane	Non-US	17
13	9	Car	IN	18
14	3	Plane	MD	19
15	1	Car	IL	20
16	15	Car	IL	20
17	16	Car	IL	20
18	1	Car	IL	21
19	15	Car	IL	21
20	16	Car	IL	21
21	20	Car	IL	21
22	10	Train	Non-US	22
23	12	Train	Non-US	22
24	14	Train	Non-US	22
25	13	Plane	IL	23
26	4	Train	MD	24

Question 9

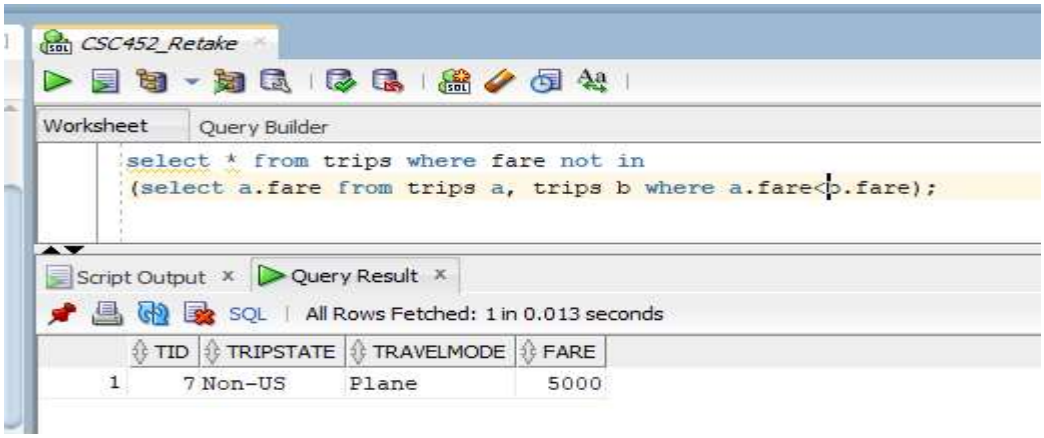
[4ptFind a state in which trips have been taken by all three modes of transportation: train, plane, and car.



Question 10

[4pt] Find the details of a) the most costly trip, b) the cheapest trip, taken by either the car, train, or plane. Write two separate queries for (a) and (b). **Write the last query as a self-join with basic SQL operators (Filter, Project, Rename, Join (cross-join, natural join), Union, Intersect, and Difference). Do not use ALL, ANY, DISTINCT, GROUP BY, HAVING, MAX, MIN, ORDER BY.**

a)



b)