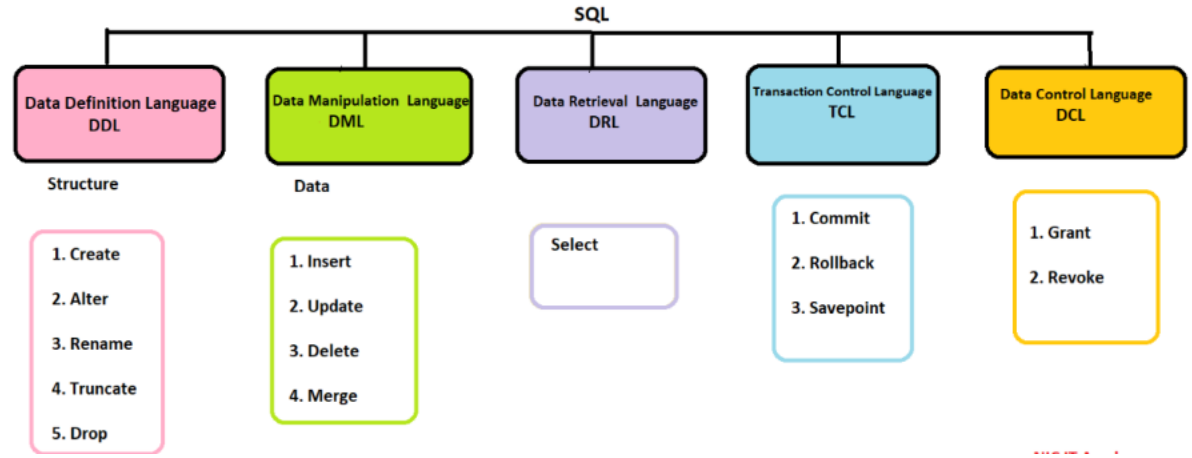
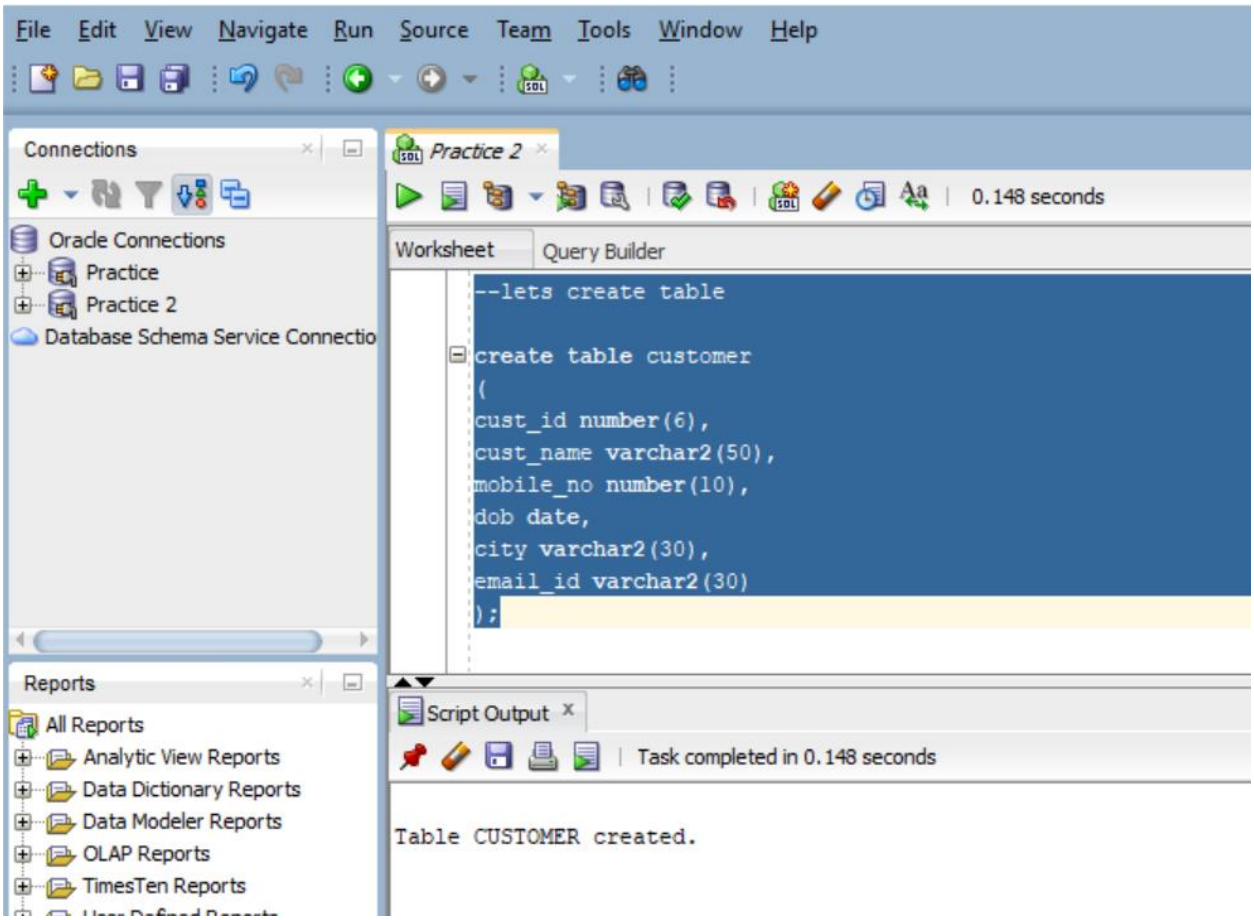
SQL can be classified into 5 different languages



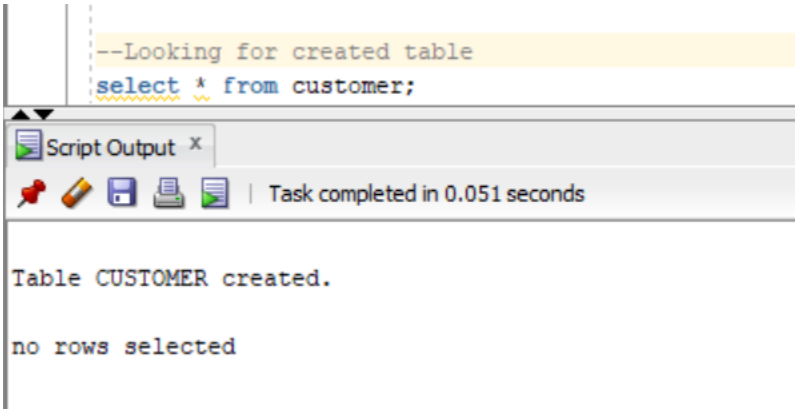
No need to commit in DDL, it will automatically gets committed once we saved database. But, in DML, we will need manual commit.

Creating table: DDL



Now, if we want to see the created table, whether it get created or not, also we can check:

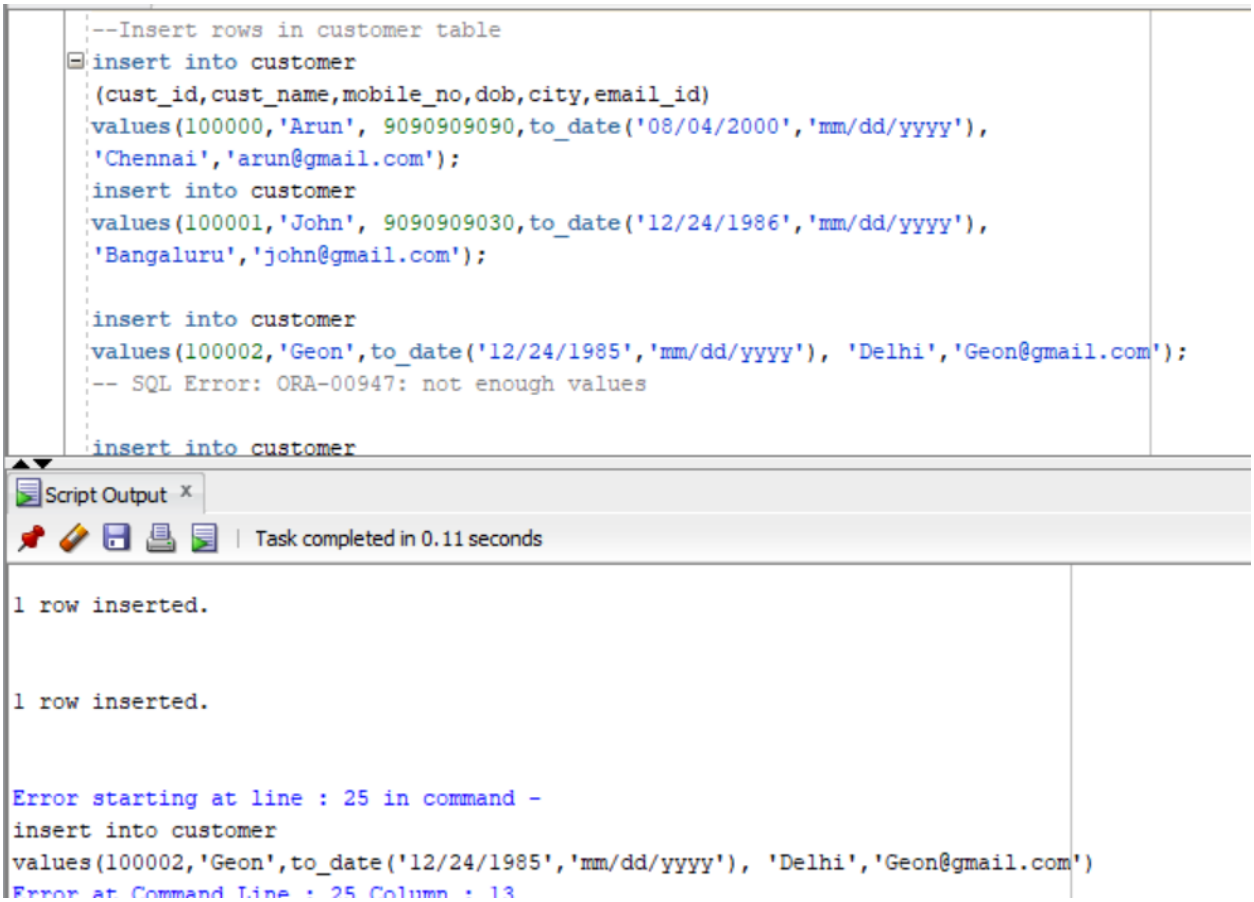
Selecting created table: DRL



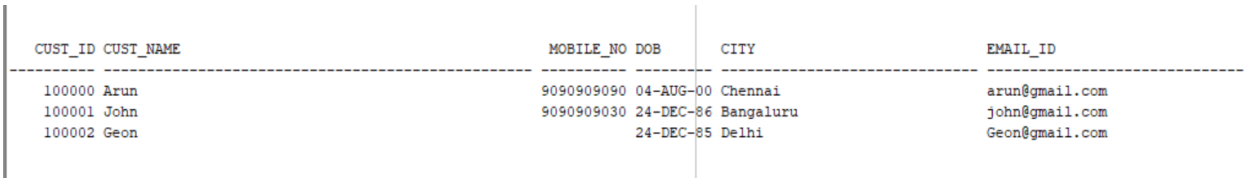
No row got selected, because, we have to inserted any rows here till now.

Inserting rows in table now: DML

Our rows got inserted, we tried to insert 4 rows but we got error in one rows and 3 got inserted:



First before looking the error, lets check inserted row using **data retrieval language (select).** When we before used to select statement – we got output no row selected, because, at that time, we have not inserted any values, but, now we have 3 values.



CUST_ID	CUST_NAME	MOBILE_NO	DOB	CITY	EMAIL_ID
100000	Arun	9090909090	04-AUG-00	Chennai	arun@gmail.com
100001	John	9090909030	24-DEC-86	Bangaluru	john@gmail.com
100002	Geon		24-DEC-85	Delhi	Geon@gmail.com

Now, lets check error as well as why there is no mobile number in third row for Geon (look in above screenshot)?

For clearness: I am pasting how I inserting rows or what values?

--Insert rows in customer table

--First row

insert into customer (cust_id,cust_name,mobile_no,dob,city,email_id)

values(100000,'Arun', 9090909090,to_date('08/04/2000','mm/dd/yyyy'), 'Chennai','arun@gmail.com');

--Second row

insert into customer values(100001,'John', 9090909030,to_date('12/24/1986','mm/dd/yyyy'),

'Bangaluru','john@gmail.com');

--Third row

insert into customer values(100002,'Geon',to_date('12/24/1985','mm/dd/yyyy'), 'Delhi','Geon@gmail.com');

--Fourth row

insert into customer (cust_id,cust_name,dob,city,email_id)

values(100002,'Geon',to_date('12/24/1985','mm/dd/yyyy'), 'Delhi','Geon@gmail.com');

Find out error?

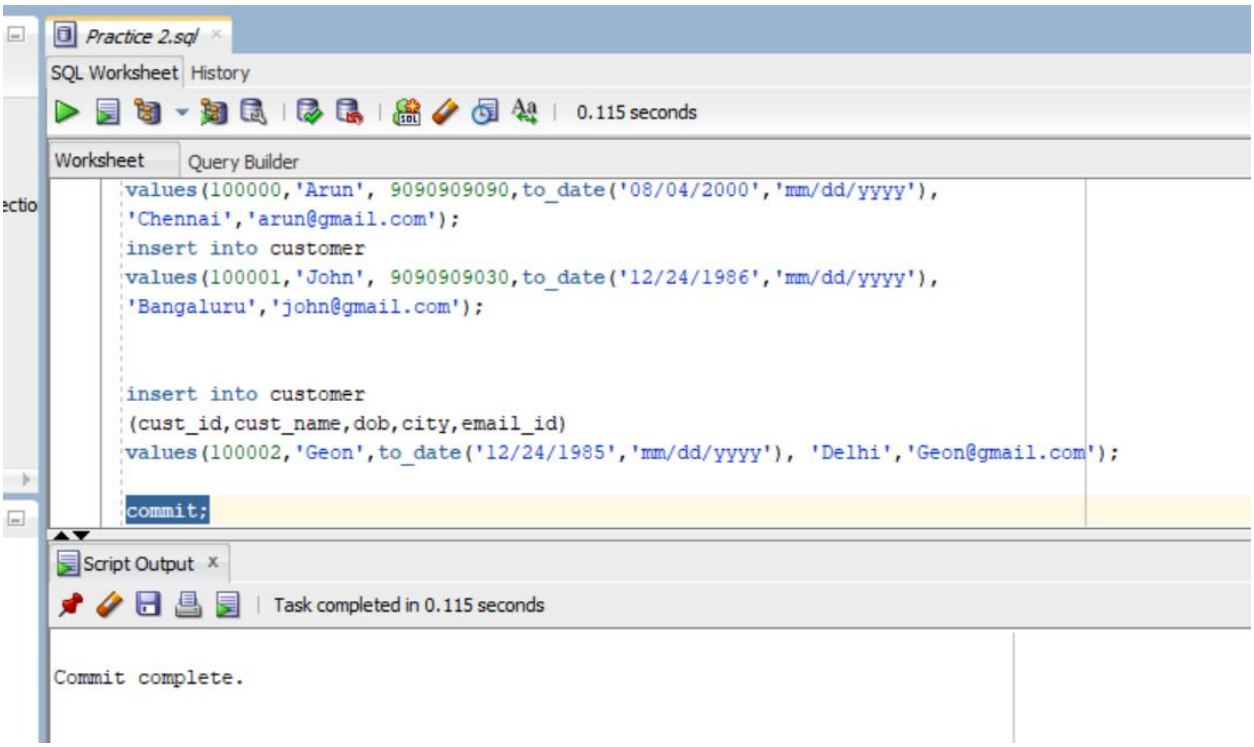
- Look first row and second row is okay, we have all values and all column so it got inserted. In third, we missed mobile number, we do not have values. But fourth got inserted because, in fourth we have to provided column name too. – see there is no column name mobile_no.

CUST_ID	CUST_NAME	MOBILE_NO	DOB	CITY	EMAIL_ID
100000	Arun	9090909090	04-AUG-00	Chennai	arun@gmail.com
100001	John	9090909030	24-DEC-86	Bangaluru	john@gmail.com
100002	Geon		24-DEC-85	Delhi	Geon@gmail.com

Now,

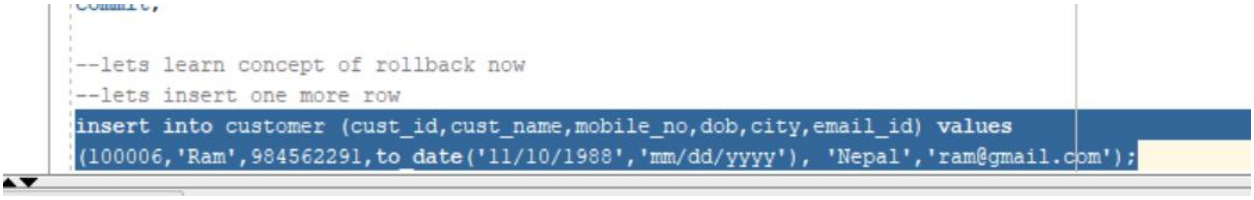
What I say before? In DDL no need to commit but in DML we have to commit.

Commit: TCL



Commit will help to save our query.

Rollback: TCL



NOTE: to_date is for format, like what is format of date -mm/dd/yyyy.

Now, if we do rollback, what will happen?

```
rollback;
```

Script Output | Task completed in 0.014 seconds

```
Error report -
SQL Error: ORA-00907: missing right parenthesis
00907. 00000 -  "missing right parenthesis"
*Cause:
*Action:

1 row inserted.


Rollback complete.
```

It shows rollback complete, but what happen, the row we just inserted will not got saved? Because before than that for other values, we have commit.

Let's see by running **Data retrieval language - Select**

```
insert into customer (cust_id,cust_name,mobile_no,dob,city,email_id) values
(100006,'Ram',984562291,to_date('11/10/1988','mm/dd/yyyy'), 'Nepal','ram@gmail.com');

rollback;

--lets again select data from customer to see imapact of rollback
select * from customer;
```

Script Output | Task completed in 0.095 seconds

CUST_ID	CUST_NAME	MOBILE_NO	DOB	CITY	EMAIL_ID
100000	Arun	9090909090	04-AUG-00	Chennai	arun@gmail.com
100001	John	9090909030	24-DEC-86	Bangaluru	john@gmail.com
100002	Geon		24-DEC-85	Delhi	Geon@gmail.com

Yes, it does not saved, so let's **insert (DML)** again same data and this time **commit (TCL)** it and again **select (DRL)** it.

```
--we rollback so it does not saved new row, so lets insert again and lets commit it
insert into customer (cust_id,cust_name,mobile_no,dob,city,email_id) values
(100006,'Ram',984562291,to_date('11/10/1988','mm/dd/yyyy'), 'Nepal','ram@gmail.com');

--commit
commit;

--select to see whether it got inserted or not after we commit
select * from customer;
```

Script Output | Task completed in 0.023 seconds

CUST_ID	CUST_NAME	MOBILE_NO	DOB	CITY	EMAIL_ID
100000	Arun	9090909090	04-AUG-00	Chennai	arun@gmail.com
100001	John	9090909030	24-DEC-86	Bangaluru	john@gmail.com
100002	Geon		24-DEC-85	Delhi	Geon@gmail.com
100006	Ram	984562291	10-NOV-88	Nepal	ram@gmail.com

Update (DML)

We all know that, we have forgot to add mobile column and its values in row 3, lets update it. Here we are just updating or changing one row of table so update is Data manipulation language means data changing language, manipulation means change.

```
--adding mobile_no in row 3 or updating row 3
update customer
set mobile_no=1212121212 where cust_id=100002;
```

Script Output | Task completed in 0.016 seconds

```
100000 Arun    9090909090 04-AUG-00 Chennai    arun@gmail.com
100001 John    9090909030 24-DEC-86 Bangaluru  john@gmail.com
100002 Geon               24-DEC-85 Delhi      Geon@gmail.com
100006 Ram      984562291 10-NOV-88 Nepal      ram@gmail.com

1 row updated.
```

```
--adding mobile_no in row 3 or updating row 3
update customer
set mobile_no=1212121212 where cust_id=100002;
--to save commit it
commit;
--see again table
select * from customer;
```

Script Output | Task completed in 0.021 seconds

CUST_ID	CUST_NAME	MOBILE_NO	DOB	CITY	EMAIL_ID
100000	Arun	9090909090	04-AUG-00	Chennai	arun@gmail.com
100001	John	9090909030	24-DEC-86	Bangaluru	john@gmail.com
100002	Geon	1212121212	24-DEC-85	Delhi	Geon@gmail.com
100006	Ram	984562291	10-NOV-88	Nepal	ram@gmail.com

ALTER (DDL)

NOTE: Always remember if we are just updating table then its DML, and if we are changing structure of table or creating table then its DDL.

```
--using alert, we are changing cust_id number from 6 to 8
alter table customer
modify cust_id number(8);
```

Script Output | Task completed in 0.076 seconds

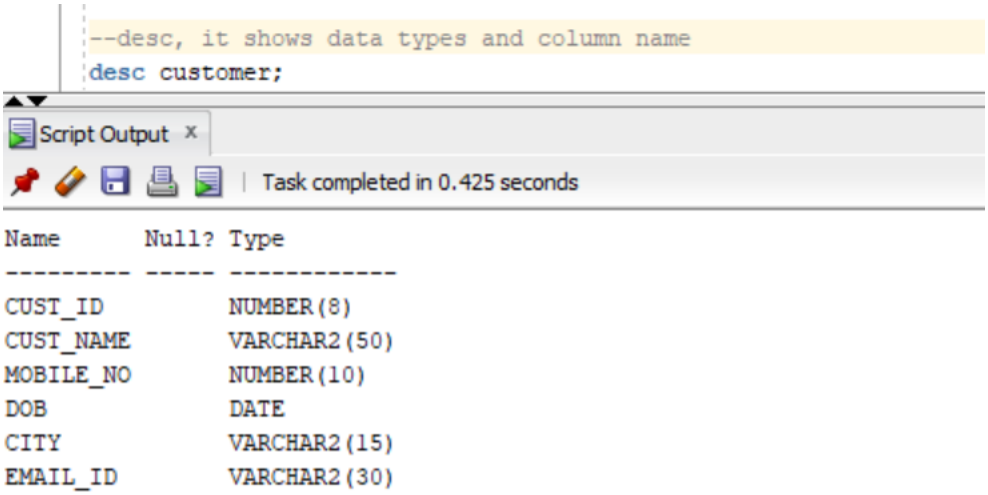
```
100000 Arun    9090909090 04-AUG-00 Chennai
100001 John    9090909030 24-DEC-86 Bangaluru
100002 Geon    1212121212 24-DEC-85 Delhi
100006 Ram      984562291 10-NOV-88 Nepal

Table CUSTOMER altered.
```

Why Alter is DDL?

- In Data Manipulation Language (DML), commands are used to modify data in a database. DML statements control access to the database data. In contrast, DDL commands are used to create, delete or alter the structure of objects in a database but not its data.

Desc

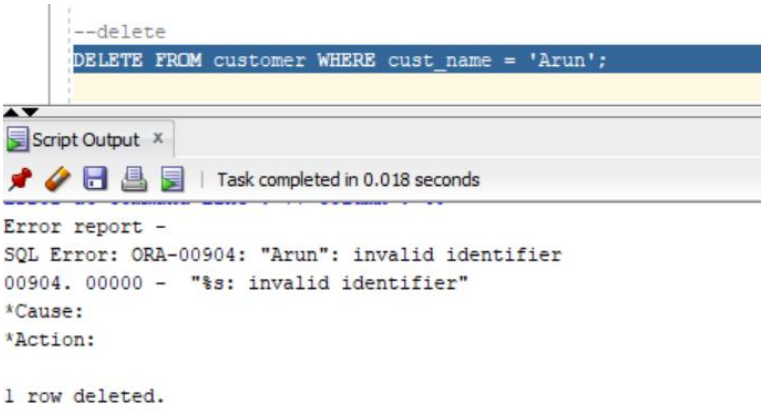


Truncate, drop (DDL) and Delete (DML)

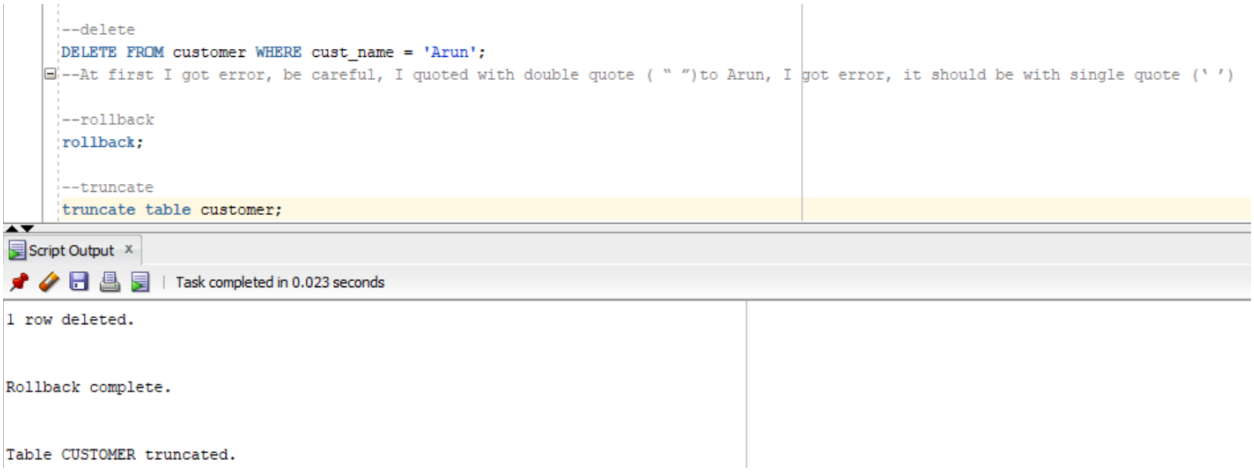
TRUNCATE and DROP are DDL statements because they are used to modify the structure of the database itself. TRUNCATE is used to quickly remove all rows from a table, but it doesn't log individual row deletions, making it more efficient for large-scale data removal. DROP is used to delete entire database objects, such as tables. It cannot rollback.

DELETE is a DML statement because it is used to manipulate data within a table. It allows you to remove specific rows from a table based on a given condition. It can be rollback

Let's see by example:

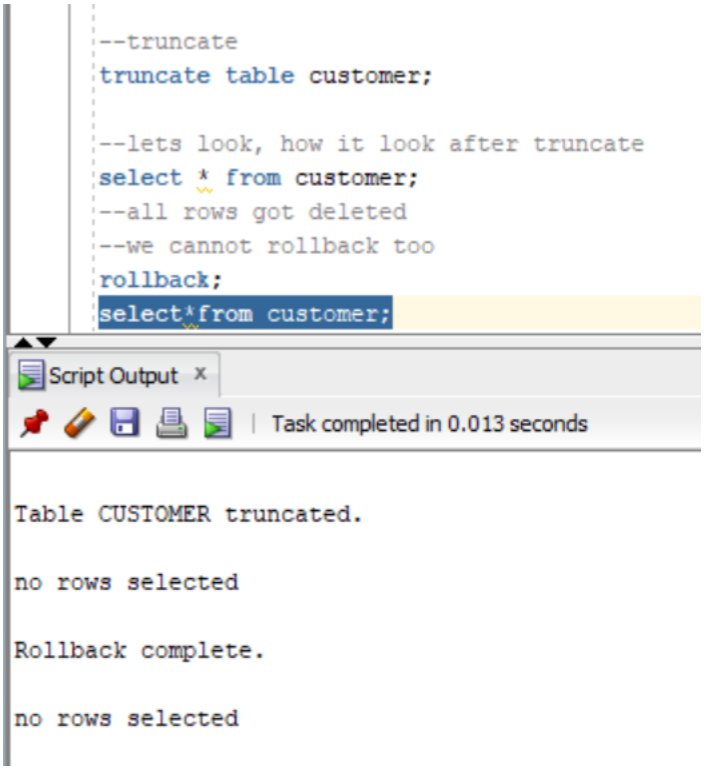


NOTE: At first I got error, be careful, I quoted with double quote (“ ”)to Arun, I got error, it should be with single quote (‘ ’)



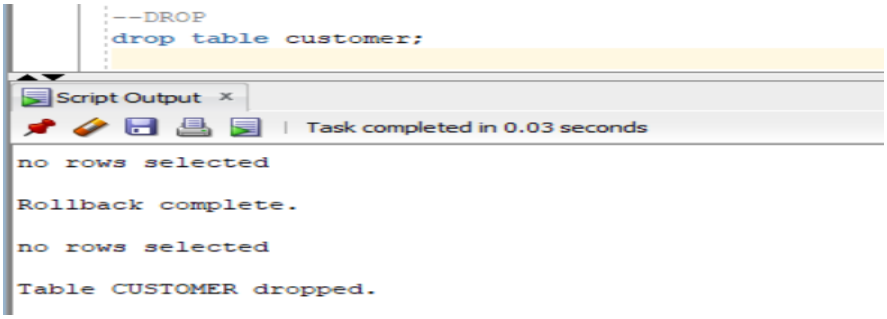
Let’s see how it looks after truncate.

Select (DML)



No rows are there after truncate, its like a new, only have customer table.

Now, drop will delete customer table.



Now, in next tutorial again we will make table – this time we will create two table and we will look all again like – insert, delete, drop, alter, update, select, rollback. As well as we will look into primary and foreign key plus constraints concept.