

PRACTICAL 10: STUDY OF TRANSACTION (COMMIT/ROLLBACK), LOCKS

1. Perform Commit and Rollback on a table.

COMMIT: Commit is a type of save command. Using commit we can save our changes permanently. When we any write function we use commit. If we don't do commit, the data will be lost.

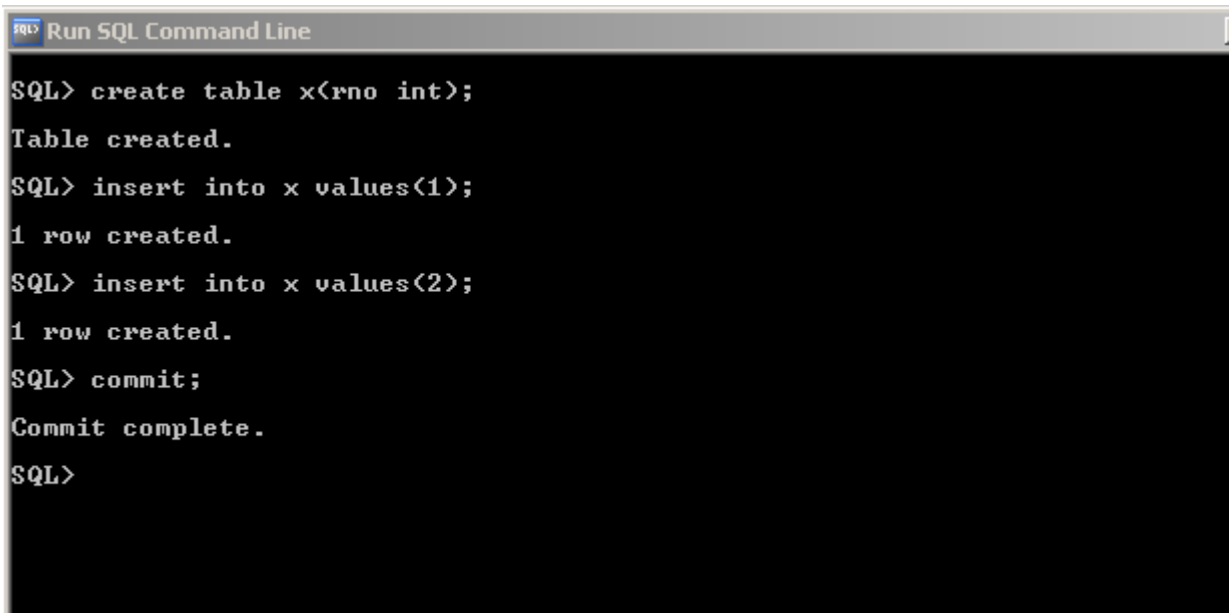
ROLLBACK: Rollback is a type of redo command. It is similarly like undo command.

For Example:

We have created a table x.

We have inserted 2 rows and run the commit command.

The changes will be saved.



```
SQL> create table x(rno int);
Table created.
SQL> insert into x values(1);
1 row created.
SQL> insert into x values(2);
1 row created.
SQL> commit;
Commit complete.
SQL>
```

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By mistakenly if we run the wrong command, we can use rollback.

```
SQL> delete from x where rno = 2;
1 row deleted.
SQL> select * from x;
      RNO
-----
        1
SQL> rollback;
Rollback complete.
SQL> select * from x;
      RNO
-----
        1
        2
SQL>
```

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```
SQL> select * from x;
```

RNO
1
2

```
SQL> update x  
2 set rno = 10;
```

2 rows updated.

```
SQL> select * from x;
```

RNO
10
10

```
SQL> rollback;
```

Rollback complete.

```
SQL> select * from x;
```

RNO
1
2

```
SQL>
```

```
SQL> select * from x;
```

RNO
1
2

```
SQL> update x  
2 set rno = 10;
```

2 rows updated.

```
SQL> select * from x;
```

RNO
10
10

```
SQL> commit;
```

Commit complete.

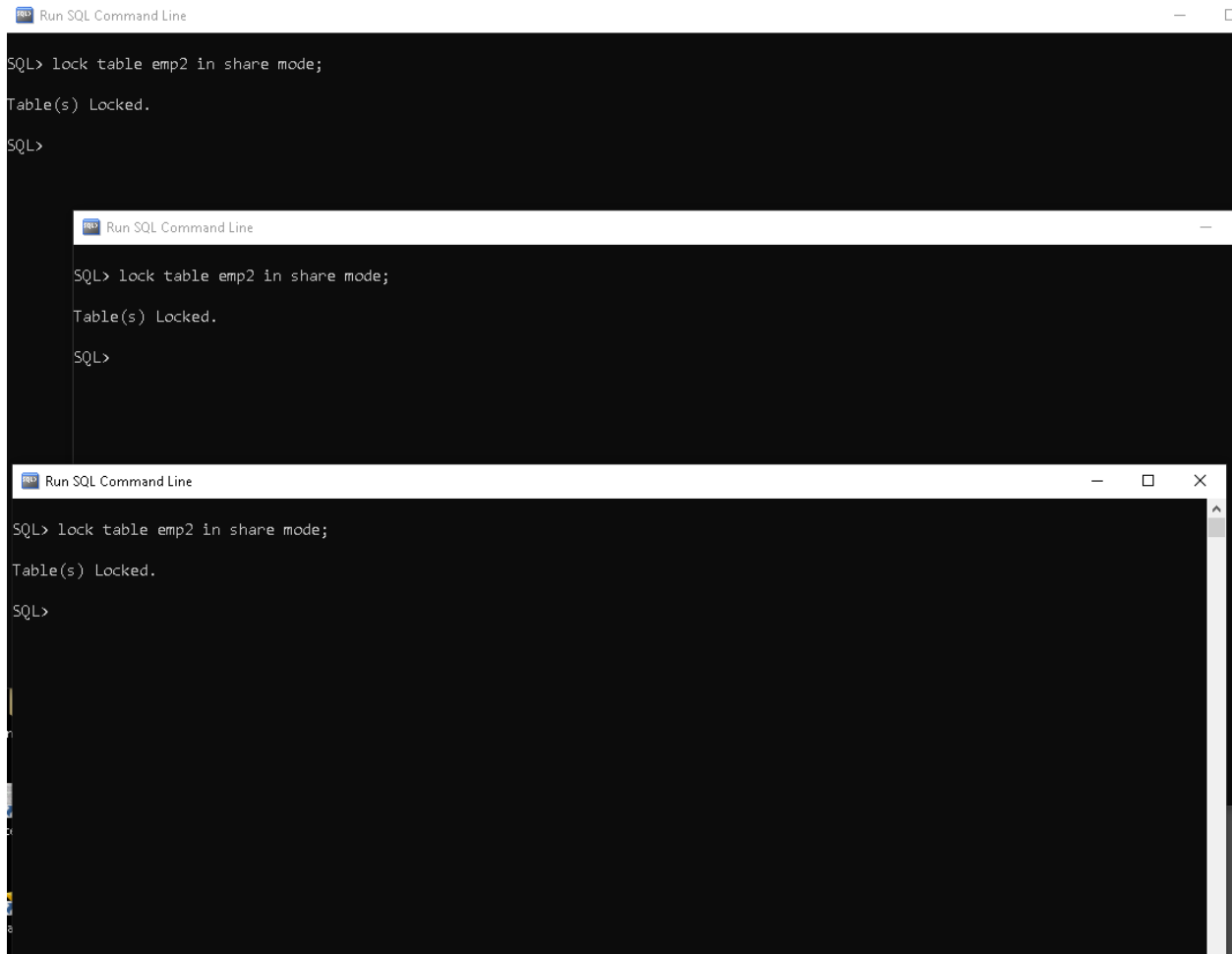
```
SQL> select * from x;
```

RNO
10
10

```
SQL>
```

2. Implementation of Share and Exclusive Lock Mode in employee table.

a) We can lock table many times in share mode.



The image displays three sequential screenshots of a 'Run SQL Command Line' window. Each screenshot shows the command 'SQL> lock table emp2 in share mode;' being entered and executed, followed by the response 'Table(s) Locked.' and the prompt 'SQL>'. The screenshots are arranged vertically, illustrating that the same table can be locked in share mode multiple times without error.

```
SQL> lock table emp2 in share mode;
Table(s) Locked.
SQL>
```

```
SQL> lock table emp2 in share mode;
Table(s) Locked.
SQL>
```

```
SQL> lock table emp2 in share mode;
Table(s) Locked.
SQL>
```

b) Once we lock the table in share mode in one instance, if we want to lock the same table in exclusive mode in another instance then it will wait for the first instance to be closed.

```
Run SQL Command Line

SQL> lock table emp2 in share mode;

Table(s) Locked.

SQL>
```

```
Run SQL Command Line

SQL> lock table emp2 in exclusive mode;
```

Once the first instance will be closed it will locked in exclusive mode.

```
Run SQL Command Line

SQL> lock table emp2 in exclusive mode;

Table(s) Locked.

SQL>
```

c) We can't make the same table in exclusive mode again in another instances. It will wait for the first instance to be closed.

But we can make the same table in share mode in another instances. As we saw in example (a).

Run SQL Command Line

```
SQL> lock table emp2 in exclusive mode;  
Table(s) Locked.  
SQL>
```

Run SQL Command Line

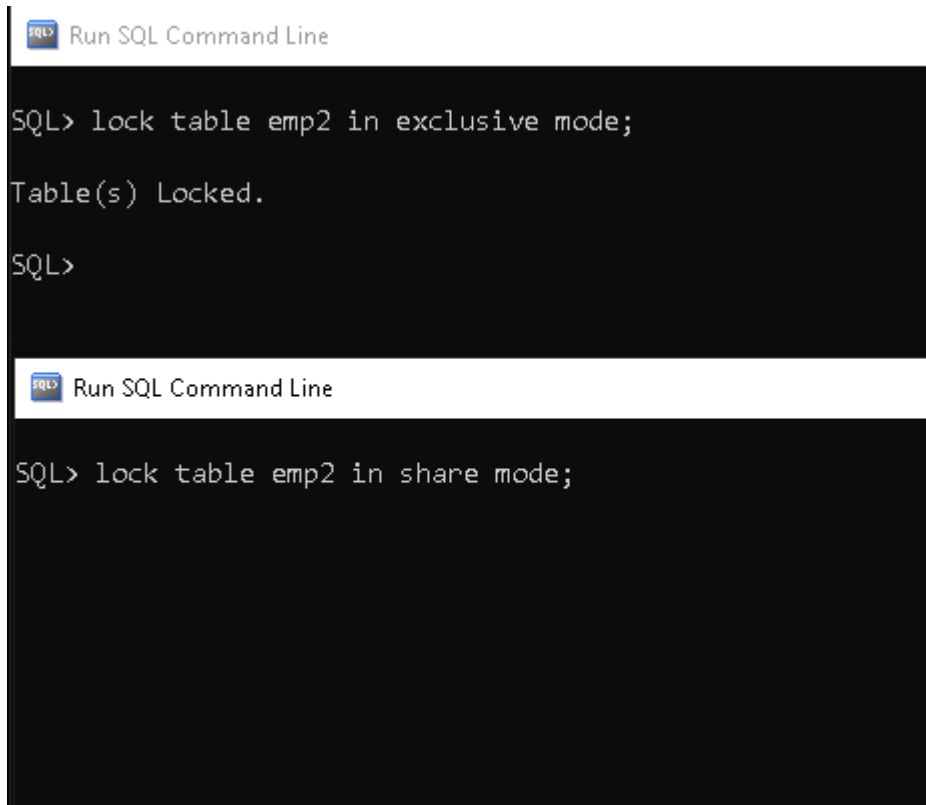
```
SQL> lock table emp2 in exclusive mode;
```

Once the first instance will be deleted, it will locked the table.

Run SQL Command Line

```
SQL> lock table emp2 in exclusive mode;  
Table(s) Locked.  
SQL>
```

d) When we want to lock the table in share mode which is already in exclusive mode, so it will wait for first instances to be removed or deleted.

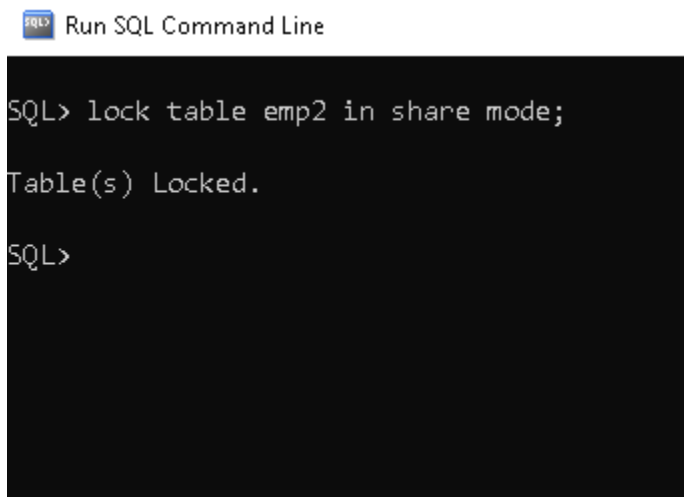


The screenshot shows two instances of the 'Run SQL Command Line' window. The top window shows the command 'lock table emp2 in exclusive mode;' being executed, resulting in 'Table(s) Locked.' and the prompt 'SQL>'. The bottom window shows the command 'lock table emp2 in share mode;' being entered, but no output is visible yet.

```
SQL> lock table emp2 in exclusive mode;
Table(s) Locked.
SQL>
```

```
SQL> lock table emp2 in share mode;
```

Once the first instance will be deleted, it will locked the table.



The screenshot shows the 'Run SQL Command Line' window with the command 'lock table emp2 in share mode;' being executed, resulting in 'Table(s) Locked.' and the prompt 'SQL>'. This indicates that the table is now locked in share mode.

```
SQL> lock table emp2 in share mode;
Table(s) Locked.
SQL>
```