Concurrency control using Locks

Aim: To study locking and unlocking the data item.

Theory:

The technique employed by the Oracle engine to protect table data when several people are accessing it is called concurrency control which is implemented by the method called as Locking. Locks are the mechanisms used to ensure data integrity while allowing maximum concurrent access to data.

The two types of locks supported by Oracle are:

1. Shared Locks:
    - Shared locks are placed on resources whenever a read operation (select) is performed.
    - Multiple shared locks can be simultaneously set on a resource.
2. Exclusive Locks:
    - Exclusive locks are placed on resources whenever Write operations(INSERT,UPDATE and DELETE) are performed.
    - Only one exclusive lock can be placed on a resource at a time i.e; the first user who acquires an exclusive lock will continue to have the sole ownership of the resource, and no other user can acquire an exclusive lock on that resource.

Syntax:

```
lock table <tablename> [,<tablename>]…
in {row share|row exclusive|share update|
share|share row exclusive|exclusive}
[nowait]
```

Locks are released when transaction is commited or rolled back.