

Perl Assignment No.6

Q1.What is commit operation and rollback operation?

Ans: Commit is the operation which gives a green signal to database to finalize the changes and after this operation no change can be reverted to its original position. Here is a simple example to call commit API:

```
$dbh->commit or die $dbh->errstr;
```

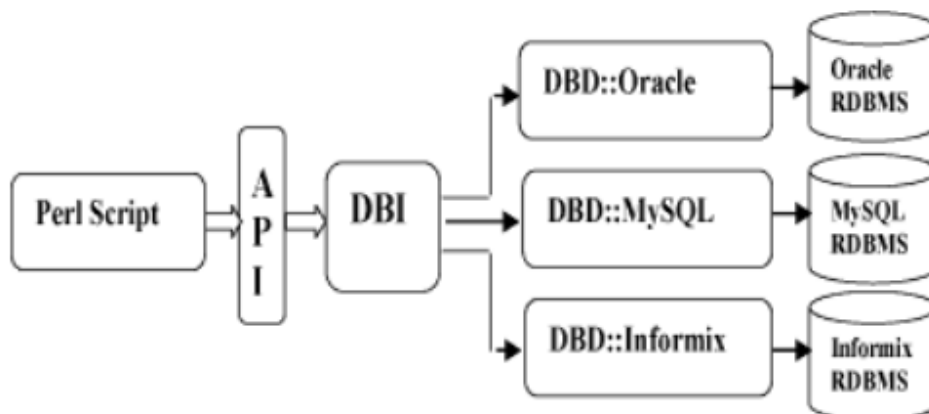
If you are not satisfied with all the changes or you encounter an error in between of any operation , you can revert those changes to use rollback API. Here is a simple example to call rollback API.

```
$dbh->rollback or die $dbh->errstr;
```

Q2. Explain in brief architecture of DBI Application.

Ans:

DBI is independent of any database available in backend. You can use DBI whether you are working with Oracle, MySQL or Informix, etc. This is clear from the following architecture diagram:



Here DBI is responsible of taking all SQL commands through the API, (i.e., Application Programming Interface) and to dispatch them to the appropriate driver for actual execution. And finally, DBI is responsible of taking results from the driver and giving back it to the calling script.

Q3. Define database connection and insert and read operation.

Ans: For connecting to and querying a database, Perl provides a module called DBI. DBI stands for Database Independent Interface for Perl, which means DBI provides an abstraction layer between the Perl code and the underlying database, allowing you to switch database implementations really easily.

Insert Operation:

INSERT operation is required when you want to create some records into a table. Here we are using table TEST_TABLE to create our records. So once our database connection is established, we are ready to create records into TEST_TABLE. Following is the procedure to create single record into TEST_TABLE.

- Preparing SQL statement with INSERT statement. This will be done using prepare() API.
- Executing SQL query to select all the results from the database. This will be done using execute() API.
- Releasing Statement handle. This will be done using finish() API.
- If everything goes fine then commit this operation otherwise you can rollback complete transaction. Commit and Rollback are explained in next sections.

Read Operation:

READ Operation on any database means to fetch some useful information from the database, i.e., one or more records from one or more tables. So once our database connection is established, we are ready to make a query into this database. Following is the procedure to query all the records having AGE greater than 20. This will take four steps –

- Preparing SQL SELECT query based on required conditions. This will be done using prepare() API.
- Executing SQL query to select all the results from the database. This will be done using execute() API.
- Fetching all the results one by one and printing those results. This will be done using fetchrow_array() API.
- Releasing Statement handle. This will be done using finish() API.

Q4. Explain Update Operation with example.

Ans: UPDATE Operation on any database means to update one or more records already available in the database tables. Following is the procedure to update all the records having SEX as 'M'. Here we will increase AGE of all the males by one year. This will take three steps –

- Preparing SQL query based on required conditions. This will be done using prepare() API.
- Executing SQL query to select all the results from the database. This will be done using execute() API.
- Releasing Statement handle. This will be done using finish() API.

- If everything goes fine then commit this operation otherwise you can rollback complete transaction. See next section for commit and rollback APIs.

Ex.

```
my $sth = $dbh->prepare("UPDATE TEST_TABLE
                        SET AGE = AGE + 1
                        WHERE SEX = 'M'");
$sth->execute() or die $DBI::errstr;
print "Number of rows updated : " + $sth->rows;
$sth->finish();
$dbh->commit or die $DBI::errstr;
```

Q5. Explain Delete Operation with example.

Ans: DELETE operation is required when you want to delete some records from your database. Following is the procedure to delete all the records from TEST_TABLE where AGE is equal to 30. This operation will take the following steps.

- Preparing SQL query based on required conditions. This will be done using prepare() API.
- Executing SQL query to delete required records from the database. This will be done using execute() API.
- Releasing Statement handle. This will be done using finish () API.
- If everything goes fine then commit this operation otherwise you can rollback complete transaction.

Ex.

```
$age = 30;
my $sth = $dbh->prepare("DELETE FROM TEST_TABLE
                        WHERE AGE = ?");
$sth->execute( $age ) or die $DBI::errstr;
print "Number of rows deleted : " + $sth->rows;
$sth->finish();
$dbh->commit or die $DBI::errstr;
```