Assigment No. 02

- Title: Implementation of views, sequence, synonym using JDBC.

- Problem Statement:
  Design and develop SQL DDL statement which demonstrate use of SQL such as creation of table, views, squnce, synonym.

- Objectives:
  1) To learn and implement views, index, sequence synonym using JDBC.
  2) To learn about database connectivity in JDBC.
  3) To create and implement simple and complex view.

- Outcomes:
  After implementing the assignment we are able to
  1) Execute and implement simple and complex view.
  2) Also able to implement index, sequence.

- Theory:
  View - It is a visual table
  a) Simple View - For single table
  Syntax -
  Create view view_name as select col,col2 from tables where condition.

b) Complex View - for one or more tables
Syntax:
Create view view_name as select col1, col2, ...
From table inner join tables on condition;

- Synonyms
1) They are not available in MySQL
2) Synonyms are very powerful feature of oracle. They are auxiliary names that relate to other database objects - tables, procedures, views.
3) They can be created as PRIVATE or PUBLIC.

Syntax:
Create (Public) Synonyms synonym_name for object_name;

INDEX
A database index is a data structure that improves speed of operations in a table. While creating index, it should be taken into consideration which are columns will be used to make SQL queries and create one or more indexes on those columns.

Types of Index:
a) Unique index: means two rows cannot have same index value.
Syntax: create unique index, index_name on table_name (col1, col2, ...)

b) Simple Index
- To create a simple index, we need to omit unique keyword it allows duplicate views

To view indexes on table
show index from index_table;

Sequence:
- A sequence is a set of integers 1, 2, 3, ... than that are generated in order on a specific command.
- Simple thing in mysql to use sequences is to define column as auto increment.

Creation Create table insert (id int unsigned not null auto increment, primary key (id), home varchar (20) not null);

inserting value
- insert into insert values (NULL, 'Housefly');
- to obtain last recent_id, we can use LAST_INSERT

JDBC -
JDBC stands for Java Database connectivity which is standard API for database independent connectivity between Java programs language and wide range of database.

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Steps include:
- Make connection to database
- Creating SQL statements
- Executing SQL queries
- Verifying and modifying resulting records.

SQL Constraints:

ON DELETE CASCADE

These constraint means that if parent record is deleted, child records are also deleted. It must be present while creating the table.

eg: Create table child (id int, parent_id int, foreign_key (parent_id) refereres parent (id) ON DELETE CASCADE);

PRIMARY KEY:

This constraint uniquely identifies a row in the table.

Syntax:

Create table order (order_no int, primary key, int foreign key (sid) references customer)

Create table customer (sid int not null primary key, ...);

FOREIGN KEY:

It is not a key attribute that translates its values from table's primary key

Syntax:

Create table order (order_no int, primary key, int foreign key (sid) references customer)

Test Cases:

	Input	Expected o/p	Actual o/p	Result
1)	Create view V1 as select C_no, C_fname, city from customer	view is created	view is created	Success
2)	drop view V1	view is deleted	view is deleted	success
3)	drop view V2	view does not exist	view does not exist	success
4)	Create index i1 on customer (C_NO)	index is created	index is created	success
5)	Using auto_increment for sequence in C_NO	sequence created	sequence created	success

Conclusion:

We successfully implemented SQL queries through JAVA program using JDBC. We also created views, indexes and sequences.