Department of Mathematics & Computing

MCC513: Database Management Systems Practical

NLHC Computer Lab-3

Experiment 1: Introduction to MySQL, Database creation, Table creation.

- Create a new database (Select an example of your own wish)
- View all databases
- Learn about data types of attributes and create a new table in the database with different data types
- Use of alter command to add and drop attributes
- Modify attribute name
- Use of desc command to display information about a table
- Rename a table
- Create more tables for your database

Experiment 2: Data insertion, update/modification/Delete and retrieval through MySQL. Basic SQL structure. Query implementation

- Insert tuples in the table including null values in the tuple
- Update values in the table
- Delete tuples in the table
- Query to view all tuples of the table
- Run basic queries to view particular attributes of a table
- Run basic queries to use basic comparison operators
- Run basic queries to view find certain tuples of a table
- Run queries using order by, limit operators

Experiment 3: Enforcing integrity constraints (Domain, Key constraints (Primary/Foreign keys), NOT NULL, UNIQUE, DEFAULT, Check)

- Create a table with appropriate primary key
- Alter a table to add primary key
- Drop a primary key
- Add a foreign key while create a table
- Alter table to add a foreign key
- Drop a foreign key
- Include constraints like null/not noll, unique, default, check
- Drop a constraint

Experiment 4: Creating and updating View. Query implementation using View

- Learn about the objective of using views
- Learn to create views
- Insert, delete, update data in views
- Run queries on views

Experiment 5: Use of aggregate functions (AVG, COUNT, MIN, MAX, SUM)

- Learn about aggregate functions
- Run queries to find sum, average, count, count-distinct, minimum, maximum
- Run queries using aggregate function with null values

Experiment 6: Use of Join operator (Natural join, Outer join (left, right and full)

- Run queries to find natural join, join, outer join, right join, left join of two or more tables
- Run queries to use union, union all, intersect operators
- Run queries to use intersect, in, between, not between operators

Experiment 7: Query optimization through Nested Query (Use of logical connectives, set comparison operators, Union, Intersect, Except, Exists clauses)

- Run Basic queries involving nested/subqueries
- Use of in/not in operator for nested queries
- Use of all, some, exists, not exists for nested queries

Experiment 8: Use of Group By and Having clause, Trigger creation

- Learn about group by operator and run queries using group by operator
- Run queries using group by and having operators
- Use of aggregate operators with group by and having operators

Experiment 9: Index creation through SQL

- Learn to create index in MYSQL
- View index
- Change ordering of index key
- Compare time taken to search with and without using index

Experiment 10-13: Mini-projects implementation in RDBMS environment

- Make a relational model of a database of your choice with minimum 5 tables and use appropriate foreign keys in the relational model
- Create the database on MYSQL
- Construct appropriate primary, foreign keys, add additional constraints learned in previous class
- Create appropriate view on the database
- Create index for appropriate tables
- Run basic queries of updating, insertion, deletion
- Run queries that involve aggregate operators, group by, having operators
- Try some subqueries and operators used in subqueries
- Use other operators studied in previous practicals