ST. XAVIER’S COLLEGE

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Maitighar, Kathmandu



DATABASE MANAGEMENT SYSTEM

Theory Assignment #8

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**Date of Submission:** September 27, 2015

# Data Definition Language

Data Definition Language (DDL) is a standard for commands that define the different structures in a database. DDL statements create, modify, and remove database objects such as tables, indexes, and users. Common DDL statements are CREATE, ALTER, and DROP.

## Domain Type in SQL

### Character Domain Types in SQL

* CHAR(n) Fixed length character string, with user-specified length n.

• VARCHAR(n) Variable length character strings, with user-specified maximum length n.

• Null values are allowed in all the domain types. Declaring an attribute to be NOT NULL prohibits null values for that attribute.

### Number Domain Types in SQL

• INT (also: INTEGER) Integer (a finite subset of the integers that is machine-dependent).

• SMALLINT Small integer (a machine-dependent subset of the integer domain type). •

DECIMAL(p,d) Fixed point number, with user-specified precision of p digits, with n digits to the right of decimal point.

• FLOAT(n) Floating point number, with user-specified precision of at least n digits.

• REAL (also: DOUBLE PRECISION) Floating point and double-precision floating point numbers, with machine-dependent precision.

### Date Domain Types of SQL

• DATE dates, containing a (4 digit) year, month and date – E.g. DATE ‘2001-7-27’ (ANSI Syntax) – E.g. TO\_DATE(‘01-JUL-27’,’YY-MON-DD’) (Oracle Syntax)

• TIMESTAMP date plus time of day – E.g. TIMESTAMP ‘2001-7-27 09:00:30.75’

1.3 schema definition in SQL

The structure of a database system described in a formal language supported by the database management system (DBMS). In a relational database, the schema defines the tables, the fields in each table, and the relationships between fields and tables.

Schemas are generally stored in a data dictionary. Although a schema is defined in text database language, the term is often used to refer to a graphical depiction of the database structure.

2. Data manipulation language

# Data Manipulation Language

A data manipulation language (DML) is a family of syntax elements similar to a computer programming language used for selecting, inserting, deleting and updating data in a database.

## The Select Clause

The SELECT clause lets you project your own record types, referencing table fields, functions, arithmetic expressions, etc. The DSL type provides several methods for expressing a SELECT clause:

-- The SELECT clause

SELECT BOOK.ID, BOOK.TITLE

SELECT BOOK.ID, TRIM(BOOK.TITLE)

// Provide a varargs Fields list to the SELECT clause:

Select<?> s1 = create.select(BOOK.ID, BOOK.TITLE);

Select<?> s2 = create.select(BOOK.ID, trim(BOOK.TITLE));

Some commonly used projections can be easily created using convenience methods:

-- Simple SELECTs

SELECT COUNT(\*)

SELECT 0 -- Not a bind variable

SELECT 1 -- Not a bind variable

// Select commonly used values

Select<?> select1 = create.selectCount();

Select<?> select2 = create.selectZero();

Select<?> select2 = create.selectOne();