INDIAN SCHOOL AL WADI AL KABIR
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Class: X	SUBJECT: COMPUTER SCIENCE
Handout-2	TOPIC: Introduction to MYSQL

SQL stands for Structured Query Language
SQL is a standard language for accessing and manipulating databases.

What Can SQL do?

- SQL can execute queries against a database
- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database.

MySQL Database:

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed, and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons:

- MySQL is released under an open-source license. So you have nothing to pay to use it.
- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.

- MySQL uses a standard form of the well-known SQL data language.
- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL is very friendly to PHP, the most appreciated language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).
- MySQL is customizable.

SQL GENERAL DATA TYPES

Each column in a database table is required to have a name and a data type.

The following table lists the general data types in SQL:

Data type	Description
CHARACTER(n)	A fixed-length string between 1 and 255 characters in length (for example CHAR(5)), right-padded with spaces to the specified length when stored. Defining a length is not required, but the default is 1.
VARCHAR(n)	Character string. Variable length. Maximum length n. A variable-length string between 1 and 255 characters in length. For example, VARCHAR(25). You must define a length when creating a VARCHAR field.
BINARY(n)	Binary string. Fixed-length n
BOOLEAN	Stores TRUE or FALSE values
SMALLINT	Integer numerical (no decimal). Precision 5
INTEGER	Integer numerical (no decimal). Precision 10
BIGINT	Integer numerical (no decimal).

	Precision 19
DECIMAL(p,s)	Exact numerical, precision p, scale s. Example: decimal(5,2) is a number that has 5 digits before the decimal and 2 digits after the decimal
FLOAT(p)	Approximate numerical, mantissa precision p. A floating number in base 10 exponential notation. The size argument for this type consists of a single number specifying the minimum precision
DOUBLE PRECISION	Approximate numerical, mantissa precision 16
DATE	Stores year, month, and day values
TIME	Stores hour, minute, and second values
TIMESTAMP	Stores year, month, day, hour, minute, and second values

INTRODUCTION TO DDL AND DML COMMANDS IN MYSQL

TYPES OF SQL COMMANDS:

- **Data Definition Language (DDL)**
  DDL or Data Definition Language actually consists of the SQL commands that can be used to define the database schema. It simply deals with descriptions of the database schema and is used to create and modify the structure of database objects in database.
  Some of the most fundamental DDL commands discussed during following hours include the following:

  - CREATE – is used to create the database or its objects (like table, index, function, views, store procedure and triggers).
  - DROP – is used to delete objects from the database.
  - ALTER-is used to alter the structure of the database.

- RENAME –is used to rename an object existing in the database

Create a table	CREATE TABLE [table name] (column_1 datatype, column_2 datatype, column_3 datatype);
Delete a table	DROP TABLE [table name];
Alter table by deleting the existing column	ALTER TABLE [table name] drop column [column name];
Alter table by adding a new column to existing table.	ALTER TABLE [table name] add column [new columnname] data_type;
Alter table by modifying the data type of existing column	ALTER TABLE [table name] MODIFY C_N new_data_type;
Alter table by renaming it	ALTER TABLE [table name] RENAME TO [new table name];
To rename the table	Rename table [table name1] to [table name2];

- **Data Manipulation Language (DML)**

The SQL commands that deals with the manipulation of data present in database belong to DML or Data Manipulation Language and this includes most of the SQL statements.
Syntax of DML Commands:

Select – to retrieve data from a database.	Select * from [table name]; Select [column name1], [column name2]…. from [table name];
Inserting data into table	INSERT INTO *table-name* VALUES (*value1*, *value2*, *value3*, ...);
Updating the information in an existing table	Update [table name] set C_N= value where condition;
Deleting the table	Delete from [table name];