# Introduction to Database

## What is Database?

- Storage system
- Organized collection of data – fact, string, number – in effective manner
- Relational database stores data as tables (Rows and Columns)
- Database management makes easy for retrieval, manage and update
- Indexing is done for finding data on fast manner

## Popular Databases

- MySQL
- Oracle
- SQL Server
- PostgreSQL

  NOSQL – not only SQL but other type of structure also

- MongoDB
- Cassandra

# What is SQL?

## It is a language used to interact between the storage system

- Structured Query Language
- Language to communicate with the database
- Originally developed by IBM later used by many
- Contains SQL commands

# Features of SQL

- Easily access any data within database
- Fast in retrieving large volume of data
- Its versatile with all database systems from Oracle, MS-SQL Server, MySQL – it can be used in all databases
- Helps to manage database without lots of coding

# Applications of SQL

- Create database – create, alter, delete, drop, update
- Define structure – it could be integer, string, binary
- Maintain existing database
- Powerful to enter, modify and extract data in database
- Client/Server language to connect front-end and back-end
- Protect database from unauthorized access

# What is a table?

- A dimensional representation of data into rows and columns
- Contains a table name to identify
- Columns are called as Fields
- Rows are called as Records/Tuples