

Welcome to Database Course

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Contents

- DB vs DBMS
- Introduction to MySQL
- Preparing Environment for MySQL
- Introduction to PhpMyAdmin

Why DBMS

- Development (Frontend, Backend, Database)
- Database Administrator
- Data Scientist
- Data Science (Research)
- Freelancing (Data Entry Operator, DB Administrator)

DATABASE MANAGEMENT SYSTEM (DBMS)

Why Use a DBMS?



Course Details

- Course Title: Database (**MySQL/** Oracle/ SQL Server)
- Durations:
 - 80 hours (25+ Lectures)
 - 10 hours Mentorship session (Industrial Resources)
- Assessment
 - Class attendance: 10%
 - Quiz and assignment: 10%
 - Assignment: 10%
 - Mid-term assessment: 20%
 - Final Evaluation: 25%
 - Project: 25%
- Class Routine
 - Friday (3.00pm-6.00pm): Networking Lab (NL)
 - Sunday (3.00pm-6.00pm): Networking Lab (NL)
 - Tuesday (3.00pm-6.00pm): Networking Lab (NL)

Skills to Achieve



- Understanding of DBMS
- Designing Database
- Implementing Database
- Database Operations
- MySQL
- SQL (Structured Query Language)
- ***Data Science with SQL***

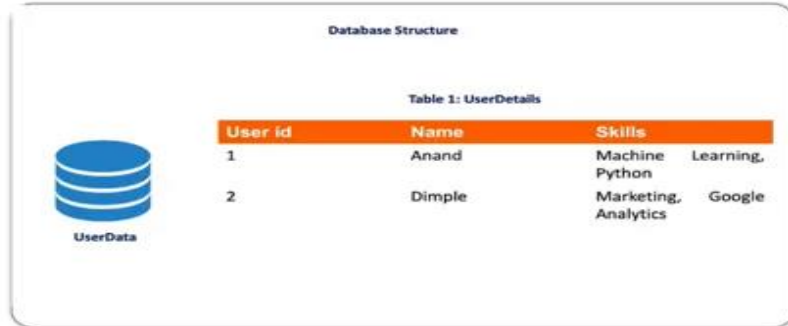


Prerequisite to Develop

Basic Computer Skills

Programming Skills (Not Mandatory)

How data is stored in database



Relational Database

```
{
  "id": 1,
  "name": "Anand",
  "skills": ["Machine Learning", "Python"]
},
{
  "id": 2,
  "name": "Dimple",
  "skills": ["Marketing", "Google Analytics"],
  "education": {
    "Graduation": {
      "School": "IIT Delhi",
      "CGPA": 9.8
    }
  }
}
```

No-SQL Database

DB VS DBMS



- **Data** is a collection of facts and figures that can be processed to produce information.

- **E.g.** recordable facts, text, numbers, images

- **Database** is a collection of related data

- **E.g.** TDB, MDB, GIS

- A **DBMS** is a **software** that allows creation, definition and manipulation of database

- It is a **tool** used to perform any kind of operation on data in database

- Provides protection and security to database

Example: MySQL, SQL Server, Oracle, MongoDB, PostgreSQL

Examples of Database



ORACLE





Uses of DBMS

- To develop software applications in less time
- Data independence and efficient use of data
- For uniform data administration
- For data integrity and security
- For concurrent access of data and data recovery from crashes
- To use user friendly declarative query language

Database Application Examples

- Airlines, Telecom , Universities/Education, Banking, Industry, Online Shopping
- **Enterprise Information**
 - Sales: customers, products, purchases
 - Accounting: payments, receipts, assets
 - Human Resources: Information about employees, salaries, payroll taxes.



Database Application Examples

- **Manufacturing:** management of production, inventory, orders, supply chain.
- **Banking and finance**
 - customer information, accounts, loans, and banking transactions.
 - Credit card transactions
 - Finance: sales and purchases of financial instruments (e.g., stocks and bonds; storing real-time market data)
- **Universities:** registration, result Processing





MySQL

- MySQL is a relational database management system
- MySQL is open-source
- MySQL is free
- MySQL is ideal for both small and large applications
- MySQL is very fast, reliable, scalable, and easy to use
- MySQL is cross-platform
- MySQL is compliant with the ANSI SQL standard
- Users of MySQL: Facebook, Twitter, Youtube, Uber, Github, and CMS like Wordpress, Drupal, Joomla, and large number of web developers around the world.



Preparing Environment for MySQL



ID	Name	Email	Date Joined
2001	Meena	meena@gmail.com	02 – January -2024
2002	Raju	raju@gmail.com	05 – December -2023
2003	Rohan	rohan@gmail.com	02 – January -2024
2004	Rita	rita@gmail.com	02 – January -2024
2005	Himu	himu@gmail.com	02 – January -2024