FILE HANDLING

File handling allows you to create, read, update, and delete files. Python provides built-in functions to work with files using the open() function.

1. Opening a File
The open() function is used to open a file.

Syntax:
```
file = open("filename", "mode")
```

Modes:

MODE	DESCRIPTION
'r'	Read mode (default)
'w'	Write mode (overwrites the file)
'a'	Append mode (adds to the file)
'x'	Create mode (creates a file, fails if it exists)
'b'	Binary mode (e.g., images, PDFs)
't'	Text mode (default)

2. Reading a File

```
file = open("example.txt", "r")
content = file.read()  # Reads the entire file
print(content)

file.close()  # Always close the file
```
Other read methods:

```
file.readline()  # Reads one line
file.readlines()  # Reads all lines into a list
```
3. Writing to a File

```
file = open("example.txt", "w")
file.write("Hello, world!")  # Overwrites file content
file.close()
```

To append data:

```
file = open("example.txt", "a")
file.write("\nNew line added!")
file.close()
```

MYSQL

MySQL is an open-source Relational Database Management System (RDBMS) that is widely used for storing and managing structured data. It uses SQL (Structured Query Language) to interact with databases.

WHAT IS 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
* MySQL was first released in 1995
* MySQL is developed, distributed, and supported by Oracle Corporation
* MySQL is named after co-founder Ulf Michael "Monty" Widenius's daughter

DATABSE:

A database is a structured collection of data that allows for efficient storage, retrieval, and management of information. Databases are used in various applications, such as websites, banking systems, e-commerce, and more.

TYPES OF DATABASES

1. Relational Databases (RDBMS)

* RDBMS stands for Relational Database Management System.
* RDBMS is a program used to maintain a relational database.
* RDBMS is the basis for all modern database systems such as MySQL, Microsoft SQL

Server, Oracle, and Microsoft Access.
* RDBMS Uses SQL queries to access the data in the database.
* Store data in tables with rows and columns.
* Use SQL (Structured Query Language) for querying.
Example: MySQL, PostgreSQL, SQL Server, Oracle.

--A relational database defines database relationships in the form of tables. The tables are related to each other - based on data common to each.

2. NoSQL Databases

Store data in various formats (documents, key-value, graphs, columns).
Ideal for handling large-scale unstructured data.
Example: MongoDB (Document-based), Redis (Key-Value), Neo4j (Graph-based).

SQL
* SQL is the standard language for dealing with Relational Databases.
* SQL is used to insert, search, update, and delete database records.

SOME OF THE MOST IMPORTANT SQL COMMANDS
SELECT - extracts data from a database
UPDATE - updates data in a database
DELETE - deletes data from a database
INSERT INTO - inserts new data into a database
CREATE DATABASE - creates a new database
ALTER DATABASE - modifies a database
CREATE TABLE - creates a new table
ALTER TABLE - modifies a table
DROP TABLE - deletes a table
CREATE INDEX - creates an index (search key)
DROP INDEX - deletes an index