Web Applications and SQL

1.1 Summary of Findings

SQL allows for the efficient storage and retrieval of product information, user accounts, and order details. This ensures that the website can quickly display the correct data to users and handle transactions smoothly.

Role of SQL in Web Applications

SQL (Structured Query Language) is essential for managing and manipulating databases in web applications. It allows developers to perform various operations such as querying, updating, and deleting data. This helps in maintaining accurate and organized data, which is critical for the functionality of web applications.

Benefits of Using SQL for Web Applications

1. Efficiency; SQL enables quick data retrieval and manipulation, which enhances the performance of web applications.

2. Data Organization: It provides a structured way to organize data, making it easier to maintain and update.

3. Data Integrity: SQL helps enforce data integrity constraints, ensuring that the data remains accurate and consistent.

Database Management Systems

1. MySQL

2. PostgreSQL

3. Microsoft SQL Server

Database Concepts

Database Tables

A database table is a structured set of data organized in rows and columns. Each row represents a unique record, and each column represents a field within the record. This structure is similar to a spreadsheet where data is entered into cells arranged in rows and columns, allowing for easy data management and retrieval.

Columns

Columns in a database table represent the different attributes or fields of the data being stored. Each column holds a specific type of data, such as text, numbers, or dates. For example, in a table storing employee information, columns might include employee\_id (number), name (text), and hire\_date (date).

Data Type

Data types are define the kind of data that can be stored in each column, ensuring data integrity and efficient storage.

1. Text: alphanumeric characters, such as names and addresses.

2. Number: numeric values, such as salaries and quantities.

3. Date: storing dates, such as birthdates and hire dates.

Expense Tracker Database Design

Planning:

1. Expense amount

2. Date

3. Category

4. Description

5. Payment method

Table: EXPENSES

|  |  |
| --- | --- |
| Column names |  |
| Expense\_id | 001 |
| amount | 1 |
| date | 20230518 |
| category | entertainment |
| description | Birthday party |
| Payment\_method | M-pesa |