**Part 1: Understanding SQL**

* 1. Websites such as online stores use SQL to manage data. The websites use SQL to store and retrieve data on user accounts, product information, and order details. The websites record this information into the respective SQL database and retrieve it when needed. For instance, when users purchase products, the website records user information and the product purchased.
  2. In web applications, SQL stores, retrieve and manipulate data. Websites can use SQL to record information about their users and products or services obtained. Analysis of this data enables websites such as commercial stores to manage their inventory, establish a number of clients, and establish if the number of customers translates into profits.
  3. Using SQL for web applications contributes to data organization, improved efficiency in handling large data sets and easy data retrieval.
  4. Efficiency entails a faster process of data manipulation. With data organization, SQL promotes organized and logical storage of data, which enhances data integrity. Then, with data retrieval capabilities, SQL enables websites to handle, manage or manipulate complex data.
  5. Three database management systems are Microsoft SQL Server, PostgreSQL, and MySQL.

**Part 2: Database Fundamentals**

2.1. A database table refers to related data collected and organized into rows and columns. The rows and columns are similar to the spreadsheet.

2.2. Columns refer to the vertical entities of a table that contain each cell's data type. For instance, a column may include age, gender, or weight.

2.3. Data types in a data table maintain data integrity by defining the type of data to be stored. Three types of data are text, date, and number. Text stores alphanumerical characters such as addresses, date data applies to storing dates and time, then numbers store numerical values.

**Part 3: Expense Tracker Database Design**

**3.1. Planning**: Information needed includes date, amount, category, description and payment methods.

**3.2 Tables**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Expense Category** | **Expense Description** | **Amount** | **Payment method** |
| DATE | TEXT | TEXT | INT | TEXT |
| DATE | TEXT | TEXT | INT | TEXT |