PLP PROGRAM 02/25/24

Week 1 Assignment DATABASE

Definition

1.1.1. Database:

A database is a structured collection of data organized for efficient retrieval, storage, and management. It can include tables, queries, reports, and other objects.

1.1.2. Table:

A table is a collection of related data organized in rows and columns.

1.1.3. Record:

A record is a single row in a database table. It contains data related to a specific entity or item and is comprised of fields.

1.1.4. Field:

A field is a single piece of data in a record.

1.1.5. Primary Key:

A primary key is a unique identifier for each record in a table.

1.1.6. SQL:

SQL (Structured Query Language) is a programming language used to manage and manipulate relational databases. It allows users to define, query, and modify data.

1.1.7. Query:

A query is a request for information from a database.

1.1.8. Index:

An index is a data structure that improves the speed of data retrieval operations on a database. It provides a quick reference to the location of data.

1.1.9. Normalization:

Normalization is the process of organizing data in a database to reduce redundancy and dependency by organizing tables and columns.

1.1.10. Database Management System (DBMS):

A Database Management System (DBMS) is software that provides an interface to interact with databases.

2. Discussions:

2.1.1. Purpose of a Primary Key:

The purpose of a primary key is to uniquely identify each record in a table. It ensures that each record is distinct and can be referenced by other tables, establishing relationships.

2.1.2. Difference between DBMS and Database:

A database is a structured collection of data, while a Database Management System (DBMS) is software that facilitates the creation, retrieval, and management of that data. The database is the actual repository, and the DBMS is the tool used to interact with and manage the database.

2.1.3. Importance of Normalization:

Normalization is essential in database design to eliminate data redundancy and dependency. It improves data integrity by organizing tables and columns, reducing the risk of anomalies such as insertion, update, and deletion errors.