Assignment Module 5 – Data Storage and Persistence in Android

Difference Between SharedPreferences vs. SQLite vs. Room in Android

1. **SharedPreferences**
    - Stores **key-value pairs** (simple data like booleans, strings, and numbers).
    - Best for **lightweight, app-specific settings** (e.g., user preferences, theme settings).
    - Not ideal for complex or structured data.

2. **SQLite**
    - A **full-fledged relational database** for structured data storage.
    - Uses **SQL queries** for CRUD operations.
    - Best for **large, complex datasets** requiring relationships and indexing.
    - Requires **manual management** of queries and schema changes.

3. **Room (SQLite Wrapper)**
    - An **ORM (Object-Relational Mapping) library** built over SQLite.
    - Uses **annotations & DAO** for database operations, reducing boilerplate.
    - Provides **compile-time verification** of SQL queries.
    - Best for **modern, scalable database handling** in Android.

When to Choose What?

- **Use SharedPreferences** : For storing small, simple key-value pairs.
- **Use SQLite** : When you need full control over SQL queries and database structure.
- **Use Room** : When you need a modern, efficient way to work with SQLite with less boilerplate and better performance.