# Module 5): Data Storage and Persistence in Android

## • Theory Assignment:

### 1. SharedPreferences

- **Purpose:** Used to store small amounts of key-value pair data, such as user preferences or app settings.

- **Data Type:** Simple data types like strings, integers, Booleans, floats, and sets of strings.

- **Persistence:** Lightweight and quick for storing data that doesn't need relational handling.

- **When to Use:** Ideal for saving user preferences, theme settings, login tokens, or app configurations.

### 2. SQLite

- **Purpose:** A lightweight, relational database for structured data storage.

- **Data Type:** Supports tables, rows, and columns for complex data relationships.

- **Persistence:** Offers full SQL query support, making it suitable for structured and complex queries.

- **When to Use:** Great for apps requiring relational data handling, such as contact management, inventory systems, or local caching of server data.

### 3. Room

- **Purpose:** A modern abstraction over SQLite that simplifies database handling and ensures type safety.

- **Data Type:** Similar to SQLite but uses objects for data access through Data Access Objects (DAOs).

- **Persistence:** Includes compile-time checks, lifecycle management, and easier integration with Live data /Flow.

- **When to Use:** Best for apps needing robust and scalable database solutions with minimal boilerplate code. Ideal for handling offline-first apps or apps syncing complex relational data.