# Room Persistence Library (Database)

Note: Originally began implementing database directly using SQLite API. We switched to using the Room Persistence Library in Sprint 7 (an abstraction of the SQLite API), allowing for greater simplicity, management, and ease of use.

## Entities

Each database entity will require two Java classes: an Entity class and a DAO class.

1. The Entity class:
   1. Should be annotated with @Entity
   2. Contains private variables corresponding to each entity attribute
   3. Contains “getters” and “setters” for each attribute
2. The DAO class:
   1. Is an interface that should be annotated with @Dao
   2. Contains methods used for accessing the database
   3. Should be named {e*ntity name*}Dao.java
      1. Ex. UserDao.java

## Database Class

The database has its own Java class, AppDatabase.java, which serves as the main access point for the underlying connection to the database.

**When adding an entity to the database, upon creating the *Entity* and *DAO* java classes,**

* **Be sure to include the entity associated with the database within the AppDatabase class annotation.**

At runtime, an instance of the database is acquired by calling [Room.databaseBuilder()](https://developer.android.com/reference/android/arch/persistence/room/Room.html#databaseBuilder(android.content.Context, java.lang.Class<T>, java.lang.String)) or [Room.inMemoryDatabaseBuilder()](https://developer.android.com/reference/android/arch/persistence/room/Room.html#inMemoryDatabaseBuilder(android.content.Context, java.lang.Class<T>)).

## Database Version History

An annotation processor argument has been added to the **build.gradle** file in the **app module**.

This means that any time the database schema is updated to a new version, the schema for that version will be exported in JSON format to **app/schemas** directory.

We are effectively keeping a backup of each database version, so if we ever need/want to revert back to an old version of our database, we simply need to find the desired database version/schema in the **app/schemas** directory.

For more information on the Room Persistence Library, see <https://developer.android.com/training/data-storage/room/index.html>