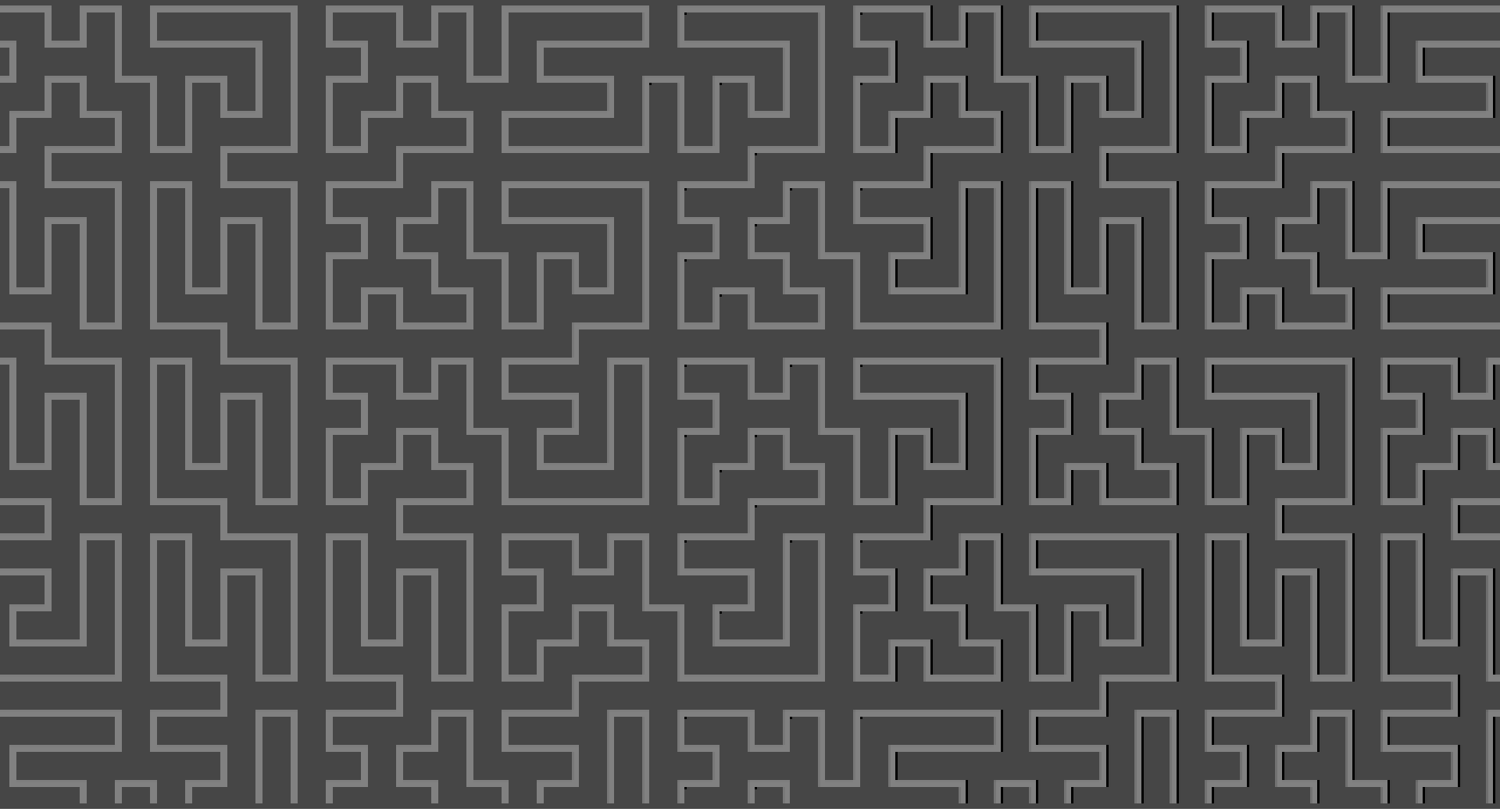
MOBILE DEVELOPMENT



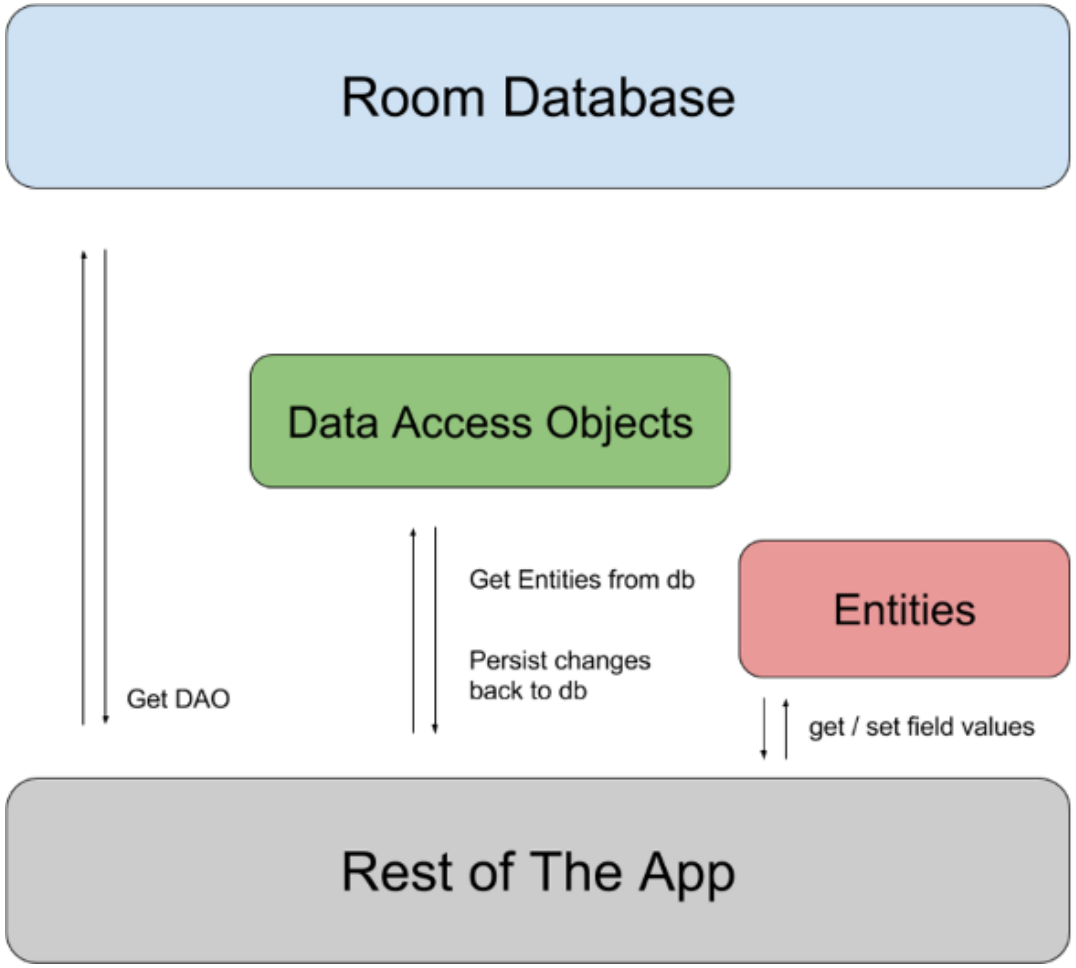
Room Database

Room Database

- Local Database
  - App provide content from local DB
  - Changes synced to server when app is back online

- Abstraction layer over SQLite
- Allow fluent database access

Room Architecture



2.3.0

Add Dependencies

```
def room_version = "2.3.0"
// Room dependencies
implementation
"android.arch.persistence.room:runtime:$room_version“

annotationProcessor
"android.arch.persistence.room:compiler:$room_version"
```

Android studio can
add automatically

Components of ROOM

Entity

- A class that Represents a table within the database

```
@Entity
public class Student {
    @PrimaryKey(autoGenerate = true)
    int sid;

    String name;
    int grade;
```

DAO

- Contains the methods used for accessing the database entity

```
@Dao
public interface StudentDao {
    @Insert
    void insertStudent(Student s);

    @Query("SELECT * FROM Student")
    List<Student> getAllStudents();

    @Query("DELETE FROM Student")
    void deleteAll();

    @Delete
    void deleteStudent(Student s);
}
```

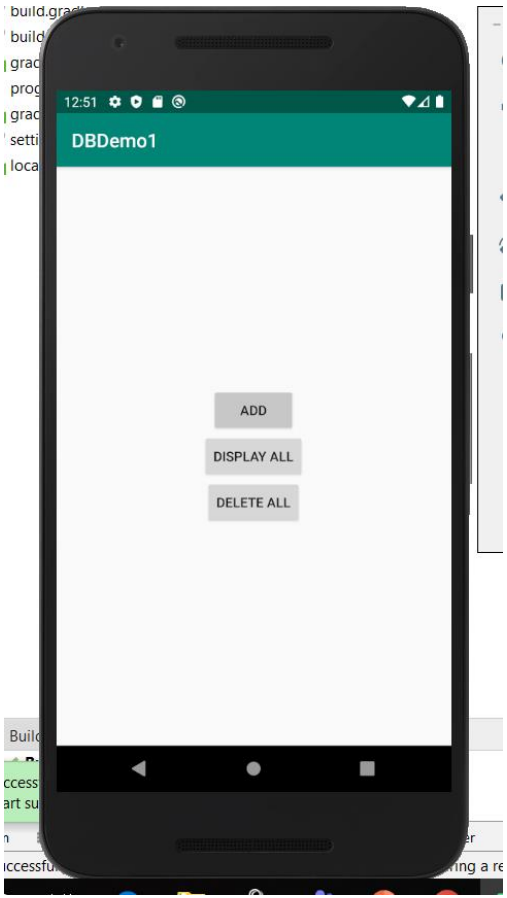
Database

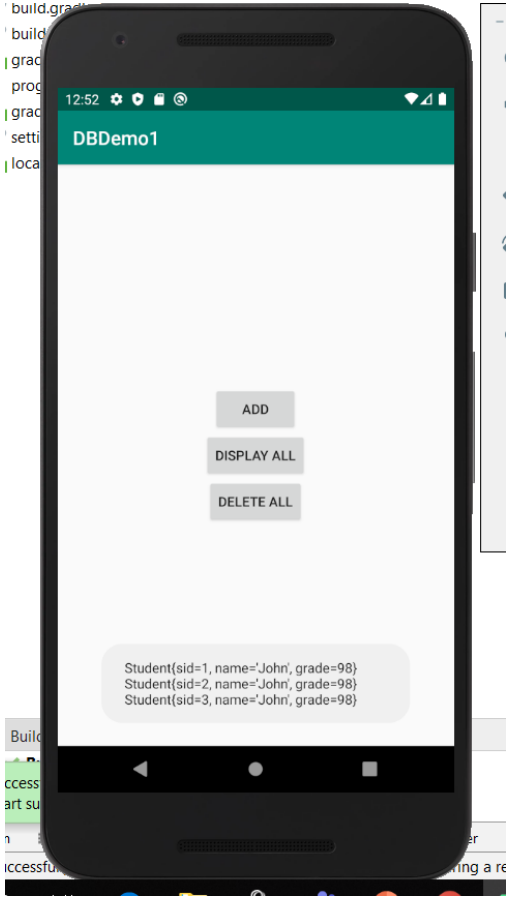
- Class annotated with @Database
- Be an abstract class that extends RoomDatabase
- Include listof entities associated with database
- Has abstract method with Zero argument and returns the class, annotated with @Dao

Database

```
@Database(entities = {Student.class}, version = 1, exportSchema = false)

public abstract class StudentDB extends RoomDatabase {
    private static StudentDB studentDB =null;

    public abstract StudentDao studentDao();

    public static StudentDB getInstance(Context context){
        if(studentDB==null){
            studentDB = Room.databaseBuilder(context.getApplicationContext(),
                    StudentDB.class, "StudentDB").allowMainThreadQueries().build();
        }
        return studentDB;
    }

}
```

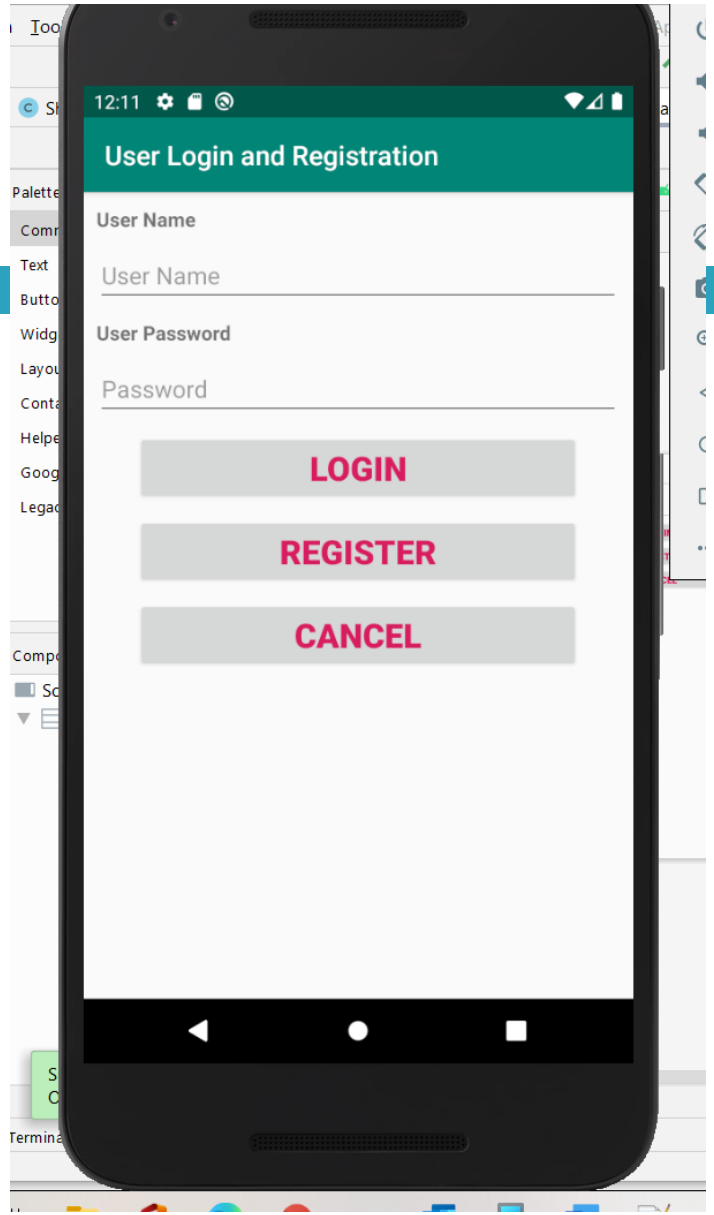
Demo 1


12:51
DBDemo1
ADD
DISPLAY ALL
DELETE ALL


12:52
DBDemo1
ADD
DISPLAY ALL
DELETE ALL
Student{sid=1, name='John', grade=98}
Student{sid=2, name='John', grade=98}
Student{sid=3, name='John', grade=98}

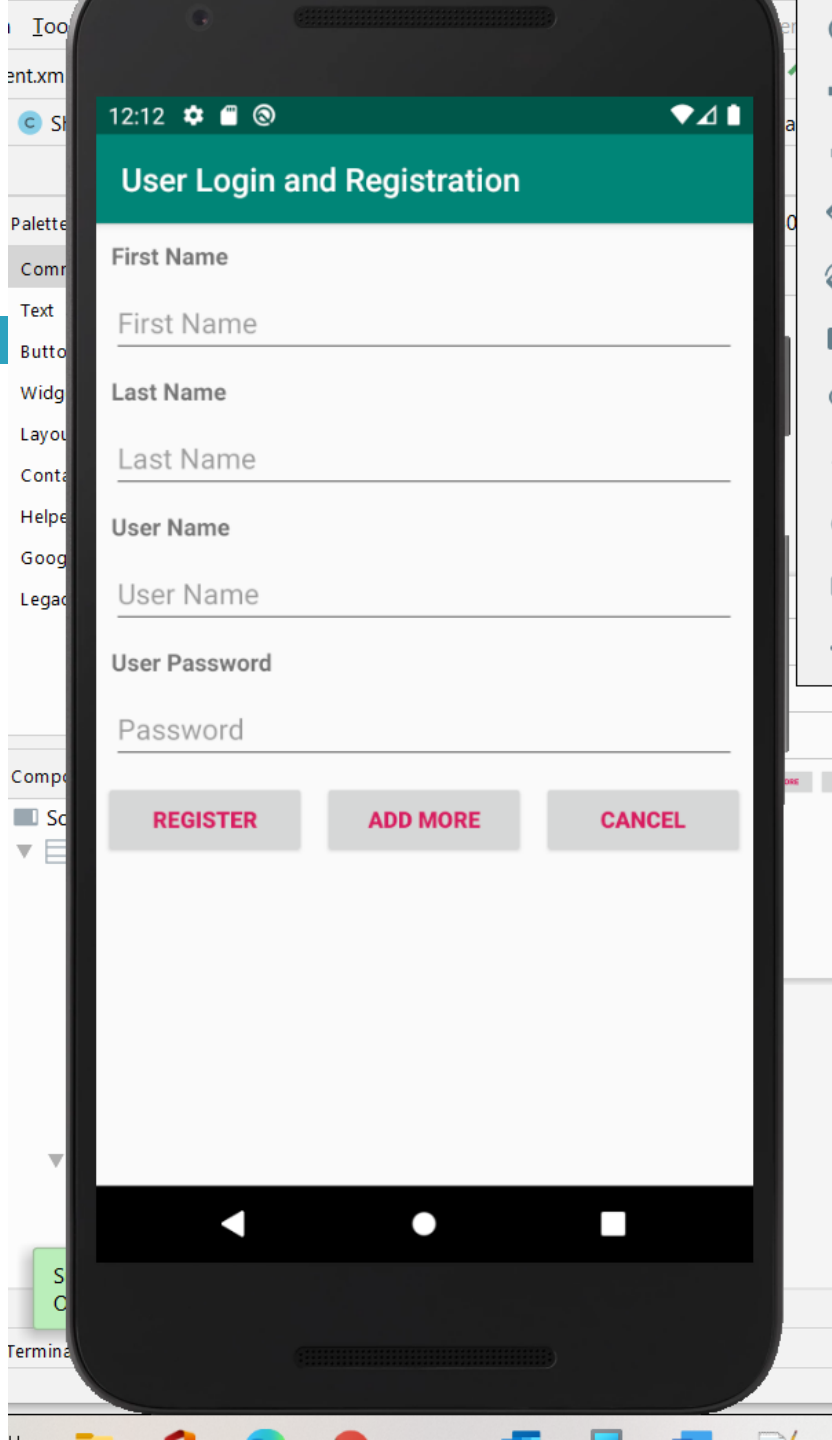
Exercise

- Use interface which you designed during week 1and implement save data to Local Room database .



Exercise

- Design interfaces for login and registration app then the app should read and Write data to local Room Database.



Exercise

- Add Another Activity
- The activity should list all users First name, Last Name and UserName using RecyclerView