



# Android Persistence Storage: Room Database



Belal Khan

 @probelalkhan

 in/probelalkhan



# Course Overview

- Getting Started
- Implement Room Database
  - Setup Room database
  - Create database **tables** and implement **DAOs**
  - Perform **CRUD** operations
  - Understand **migrations**
  - Define **database relationships** between objects
  - **Test** and **Debug** code
  - Integrate Room in an app with **MVVM** architecture
- Code challenges



# Course Prerequisites

- Kotlin programming language
- Jetpack Compose fundamentals
- Familiar with Android Studio and using emulator



# What is Room?

- Room is a Database Object Mapping library that makes it easy to access database on Android applications.



# Why Room?

- Compile time verification of SQL Queries.



# Compile time verification of SQL Queries

```
val db: SQLiteDatabase =  
    context.openOrCreateDatabase("invoice_db", Context.MODE_PRIVATE, null)  
val result: Cursor = db.rawQuery("SELECT * FROM intvoices", arrayOf())  
  
/* Work with the result */  
  
/* Don't forget to free up the cursor */  
result.close()
```



```
@Query("SELECT * FROM intvoices")  
fun getInvoices(): List<Invoice>
```



# Why Room?

- Removes boiler plate codes.



# Removes Boiler Plate Code

```
val invoices = mutableListOf<Invoice>()
if (result.moveToFirst()){
    do{
        val invoiceId = result.getInt(result.getColumnIndex("id"));
        val invoiceName = result.getString(result.getColumnIndex("name"))
        val invoice = Invoice(invoiceId, invoiceName)
        invoices.add(invoice)
    }while(result.moveToNext());
}
```

```
@Query("SELECT * FROM invoices")
fun getInvoices(): List<Invoice>
```





# Why Room?

- ORM (Object Relational Mapping) Feature.



# Object Relational Mapping Feature

```
@Query("SELECT * FROM invoices")  
fun getInvoices(): List<Invoice>
```



# Why Room?

- Easy migration when schema change is required.
- Easy to integrate with existing Jetpack Components and Coroutines.



# What you will build?

- Easy Invoice
  - A simple personal invoice manager; for small businesses.



# Cloning the Sample Project

<https://github.com/droidcon-academy/android-room-database-course-materials>



# Summary

- Overview of this course
- Advantages of Room over SQLite with Examples
- The final project of this course
- The starter project of this course





# Room Fundamentals

Up Next

