ChatConnect - A Real-Time Chat and Communication App
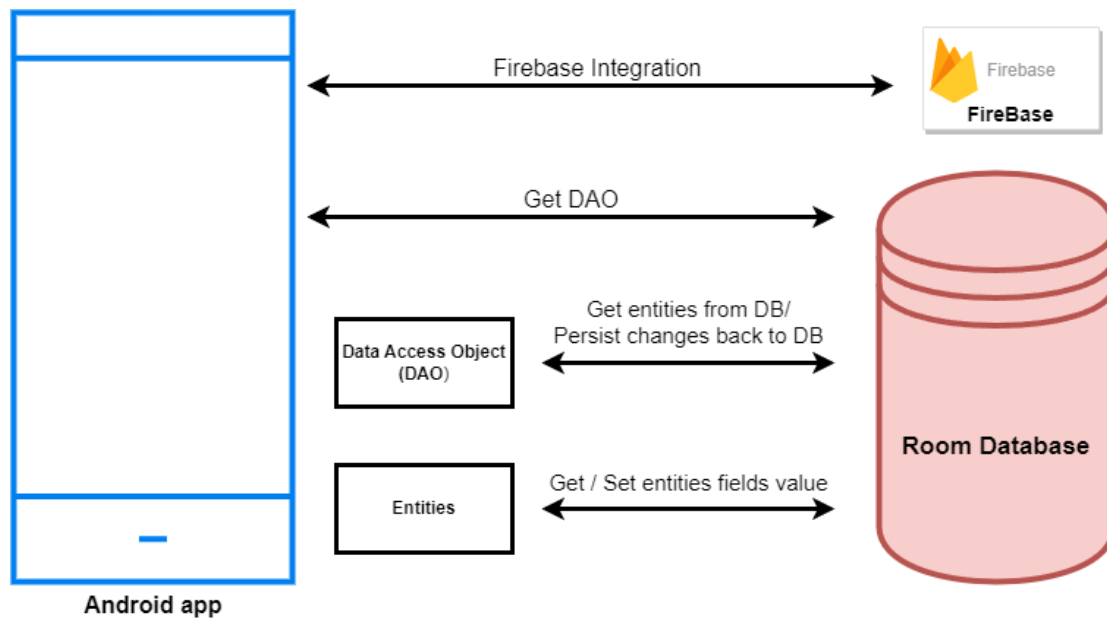
INTRODUCTION:

This project created a web application for users to instantly communicate with each other. An the most important part of building a good chat application is focus on the data flow on web. This project spends a good amount of research to find the most appropriate technology for deliver the data flow, which is REST API for account management, WebSocket for text chat and WebRTC for video and audio and find the result pleasant.

Kotlin is a modern programming language that helps developers be more productive. For example, Kotlin allows you to be more concise and write fewer lines of code for the same functionality compared to other programming languages. Apps that are built with Kotlin are also less likely to crash, resulting in a more stable and robust app for users. Essentially, with Kotlin, you can write better Android apps in a shorter amount of time. As a result, Kotlin is gaining momentum in the industry and is the language that the majority of professional Android developers use.

The benefits of a real-time chat application:

A chat application makes it easy to communicate with people anywhere in the world by sending and receiving messages in real time. With a web or mobile chat app, users are able to receive the same engaging and lively interactions through custom messaging features, just as they would in person. This also keeps users conversing on your platform instead of looking elsewhere for a messaging solution. Whether it's private chat, group chat, or large-scale chat, adding personalized chat features to your app can help ensure that your users have a memorable experience

Architecture:

Android app

PROJECT MODULES:

1. Login page
2. Register page
3. **Main page**

1. LOGIN PAGE:

A login application is the screen asking your credentials to login to some particular application. You must have seen it when logging into twitter.

2. REGISTER PAGE:

In this article ,we will take a look at adding a user registration form in android app so that users can register themselves in the app.

3. MAIN NEWS HEADLINES PAGE:

This application will show the news about the world.this is better conventional newspaper as you can see news anytime and anywhere now.
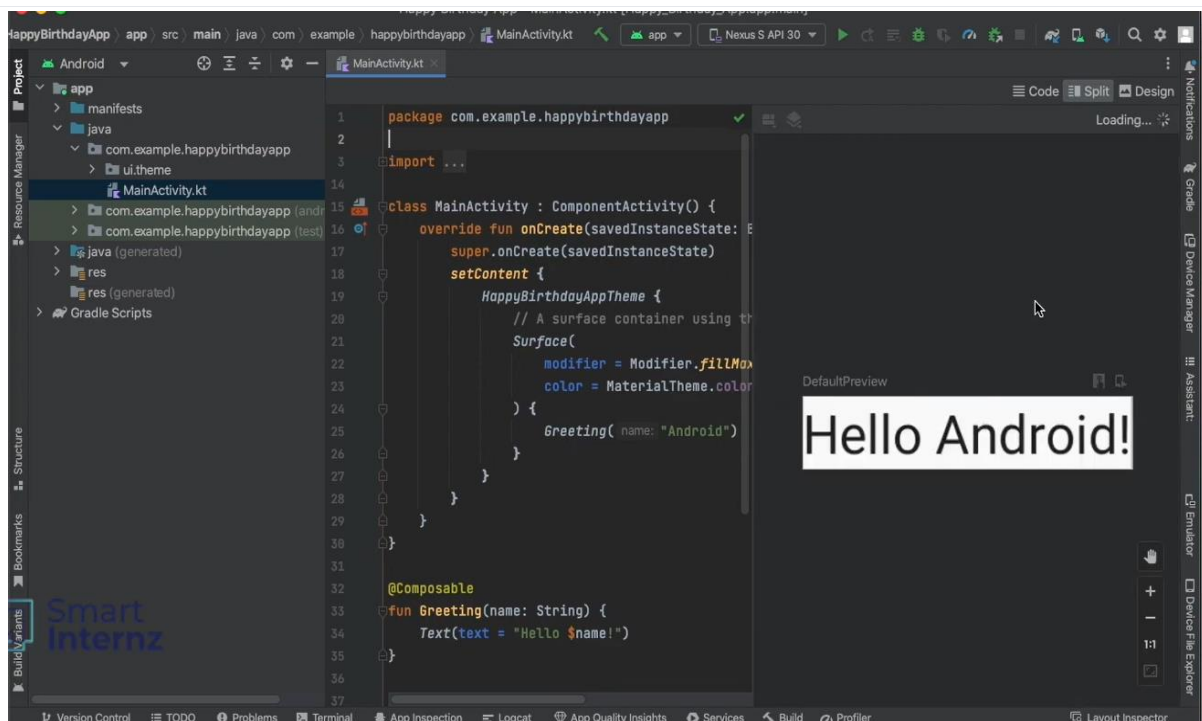
OPERATORS IN KOTLIN:

Operators are used to perform operations on variables and values. Knowledge in operators is pretty essential while building business logic in the app using composable function.

```
Fun main()
    var a = 5
    var b = 6
    var sum = a + b
    println(sum)
```
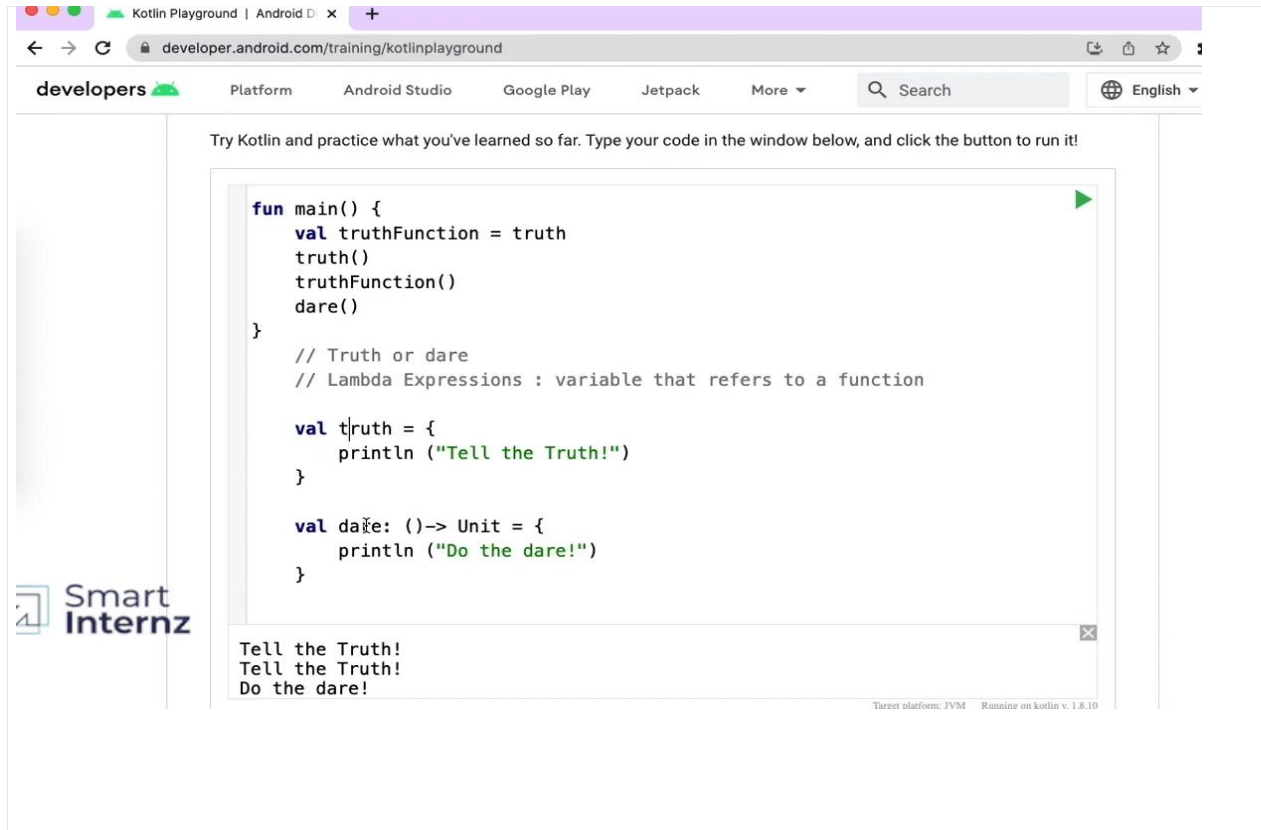
OUTPUT:

```
Sum = 11
```

First app in android:

Kotlin Fundamentals in Lambda Expressions:

Lambda expressions provide a variety of ways to make your code more concise. You explore a few of them in this section because most of the lambda expressions that you encounter and write are written with shorthand syntax.
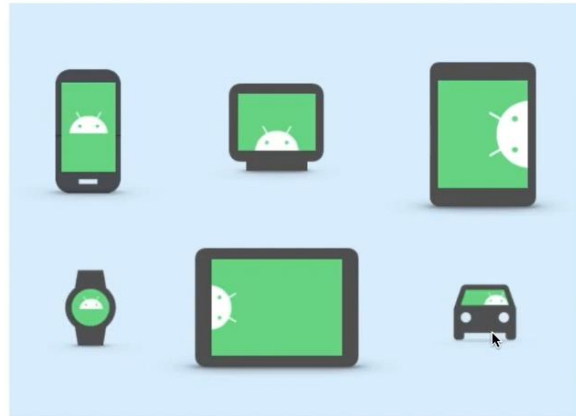

Introduction to Layouts:

A layout defines the structure for a user interface in your app, such as in an activity. All elements in the layout are built using a hierarchy of View and ViewGroup objects. A View usually draws something the user can see and interact with. Whereas a ViewGroup is an invisible container that defines the layout structure for View and other ViewGroup objects

Android devices

- Android devices come in many different form factors.
- More and more pixels per inch are being packed into device screens.
- Developers need the ability to specify layout dimensions that are consistent across devices.

Introduction Connect to Internet

Add permissions to the manifest

In `AndroidManifest.xml`:

```xml
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.sampleapp">

    <uses-permission android:name="android.permission.USE_BIOMETRIC" />

    <application>
        <activity
            android:name=".MainActivity" ... >
            ...
        </activity>
    </application>
</manifest>
```

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Introduction to Data Persistence

Data persistence—storing or persisting data on the device—is a big part of Android development. Persistent data ensures user-generated content isn't lost when the app is closed, or data downloaded from the internet is saved so it doesn't need to be redownloaded later.

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Example SQLite commands

Create   `INSERT INTO colors VALUES ("red", "#FF0000");`

Read   `SELECT * from colors;`

Update   `UPDATE colors SET hex="#DD0000" WHERE name="red";`

Delete   `DELETE FROM colors WHERE name = "red";`

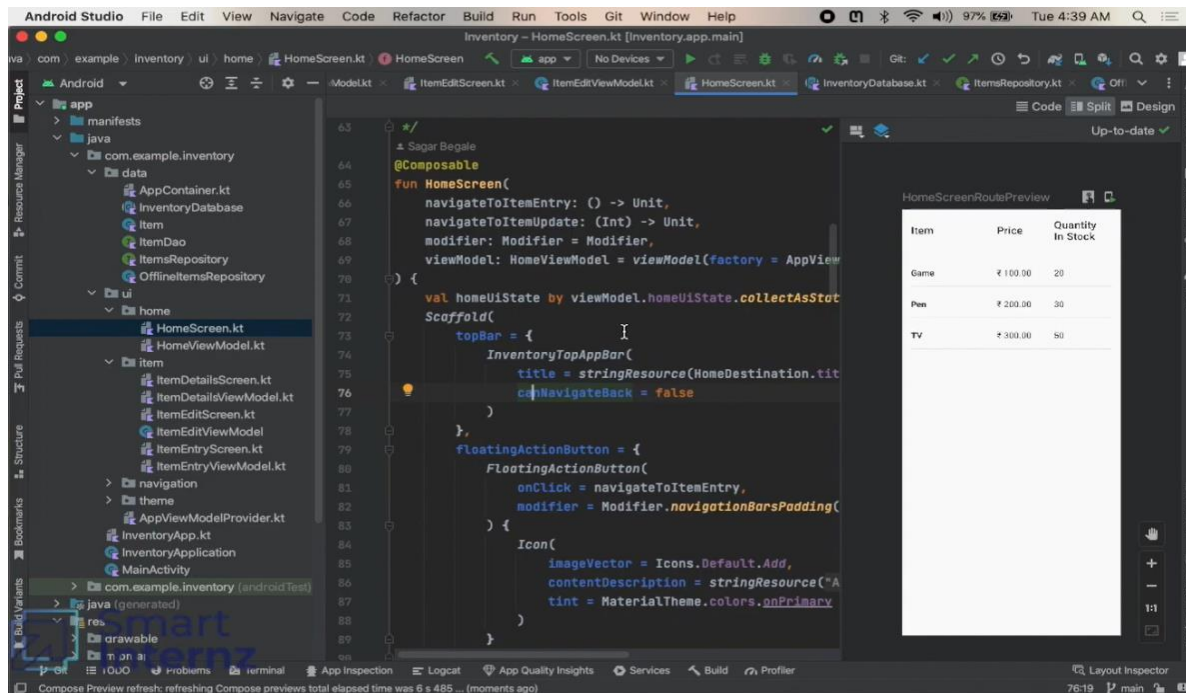Smart Internz   Android Development with Kotlin

Room Concept in Android:

Room is a persistence library that's part of Android Jetpack. Room is an abstraction layer on top of a SQLite database. SQLite uses a specialized language (SQL) to perform database operations. Instead of using SQLite directly, Room simplifies the chores of database setup, configuration, and interactions with the app. Room also provides compile-time checks of SQLite statements.

Conclusion:

The chat app provides a better and more flexible chat system. Developed with the latest technology in the way of providing a reliable system. The main advantage of the system is instant messaging, real-world communication, added security, group chat, etc. This application may find the best demand in the market for most organizations that aim to have independent applications.