

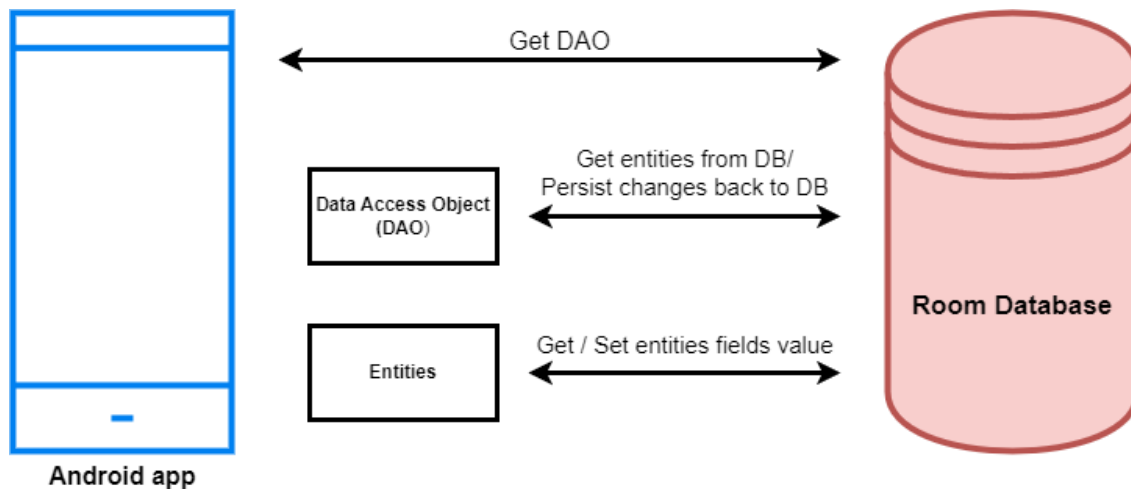


**Money Matters: A Personal Finance Management  
App  
Project Based Experiential Learning Program**

# Money Matters: A Personal Finance Management App

The app allows user to keep track of their expenses and accounts, and provides an overview of their financial status. Users can set a budget for various expenses and view their progress towards it.

## Architecture



## Learning Outcomes :

By end of this project:

- You'll be able to work on Android studio and build an app.
- You'll be able to integrate the database accordingly.

## Project Workflow:

- Users register into the application.
- After registration , user logins into the application.
- User enters into the main page

## Tasks:

- 1.Required initial steps
- 2.Creating a new project.
- 3.Adding required dependencies.
- 4.Creating the database classes.
- 5.Building application UI and connecting to database.
- 6.Using AndroidManifest.xml
- 7.Running the application.

### Task 1:

Required initial steps :

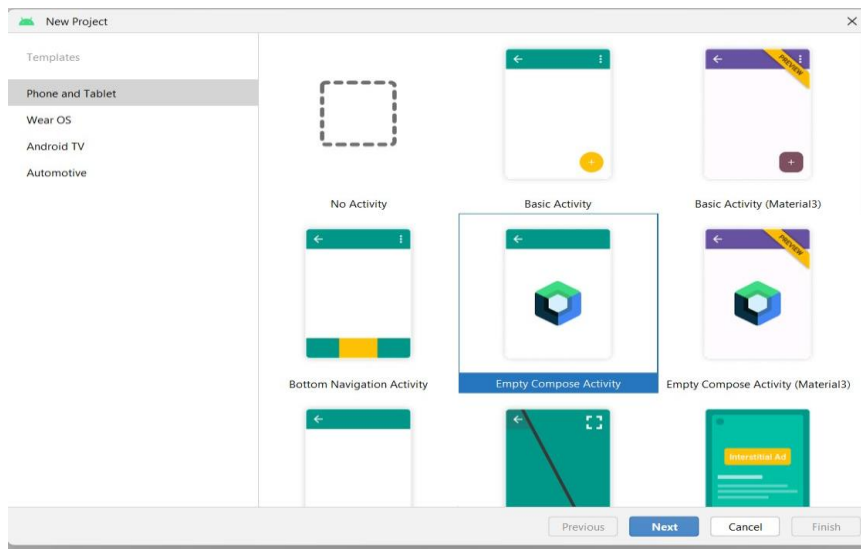
<https://developer.android.com/studio/install>

### Task 2 :

Creating a new project.

Step 1 : Android studio > File > New > New Project > Empty Compose Activity

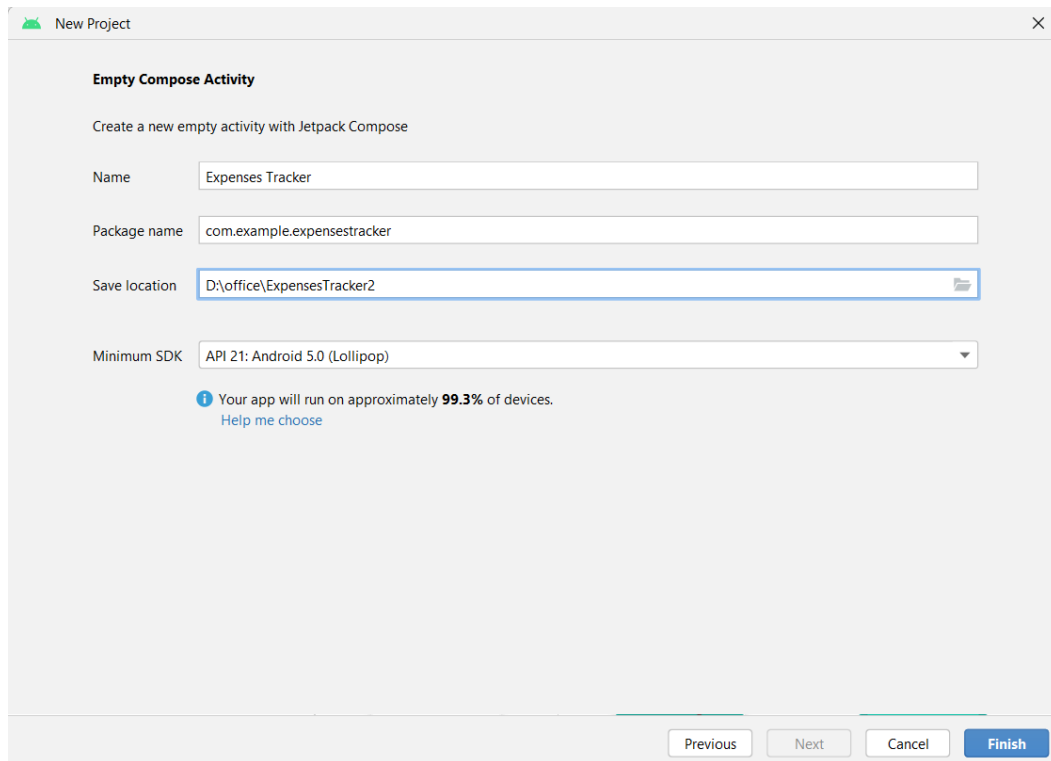
Step 2 : Click on **Next** button.



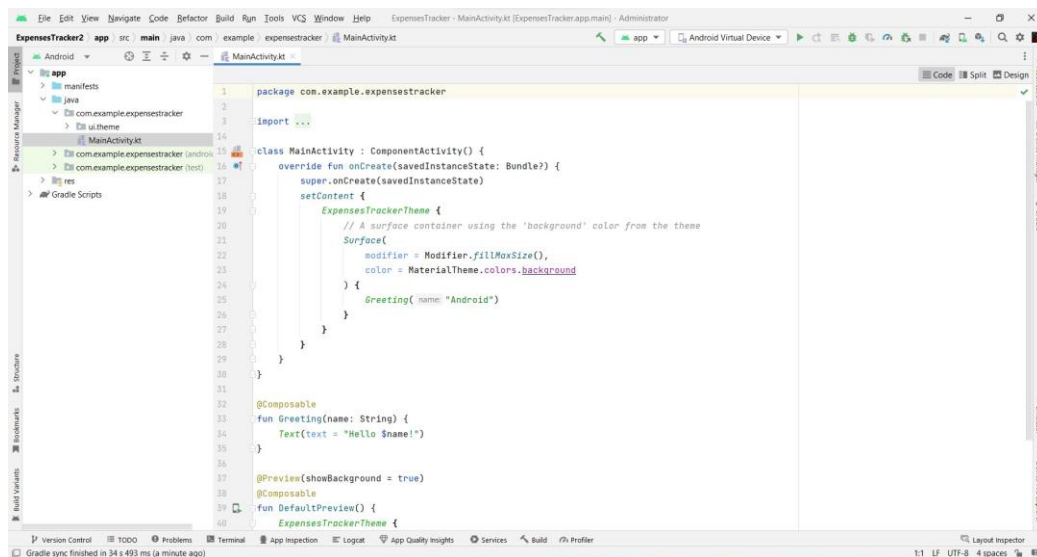
Step 3 : Give name to the new project.

Step 4 : Give the Minimum SDK value

Step 5 : Click Finish



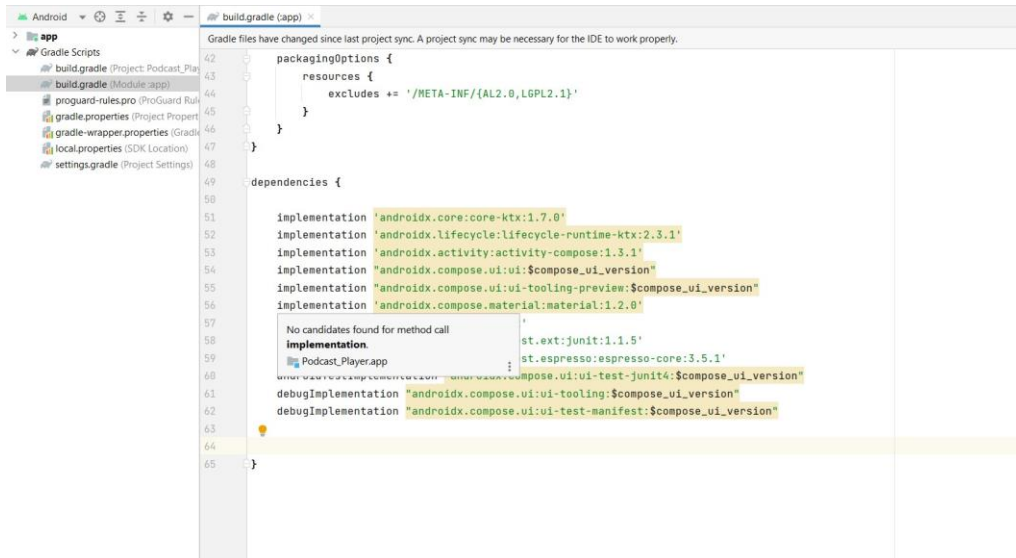
## MainActivity.kt



## Task 3 :

Adding required dependencies.

Step 1 : Gradle scripts > build.gradle(Module :app)



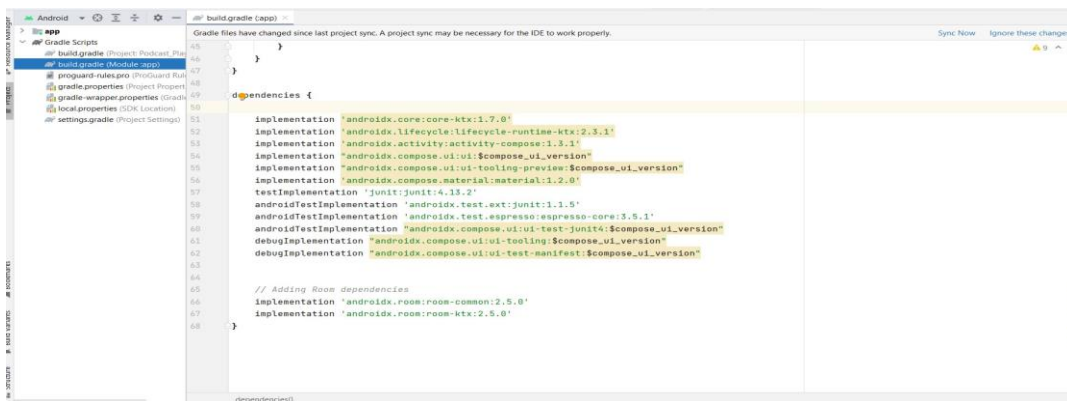
Step 2 : Adding room dependencies.

Add the below code in dependencies

*// Adding Room dependencies*

implementation 'androidx.room:room-common:2.5.0'

implementation 'androidx.room:room-ktx:2.5.0'

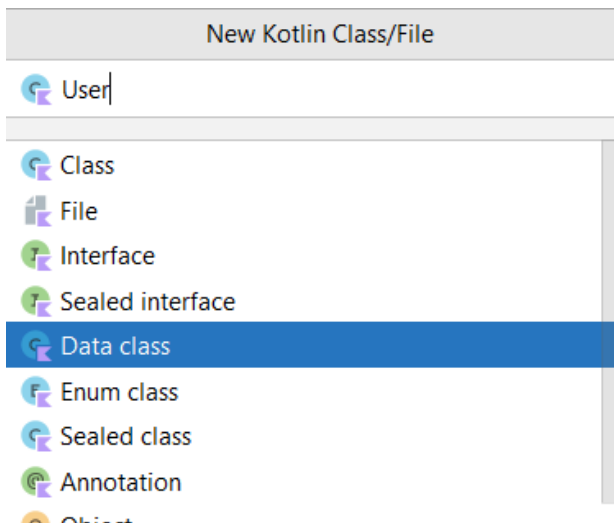
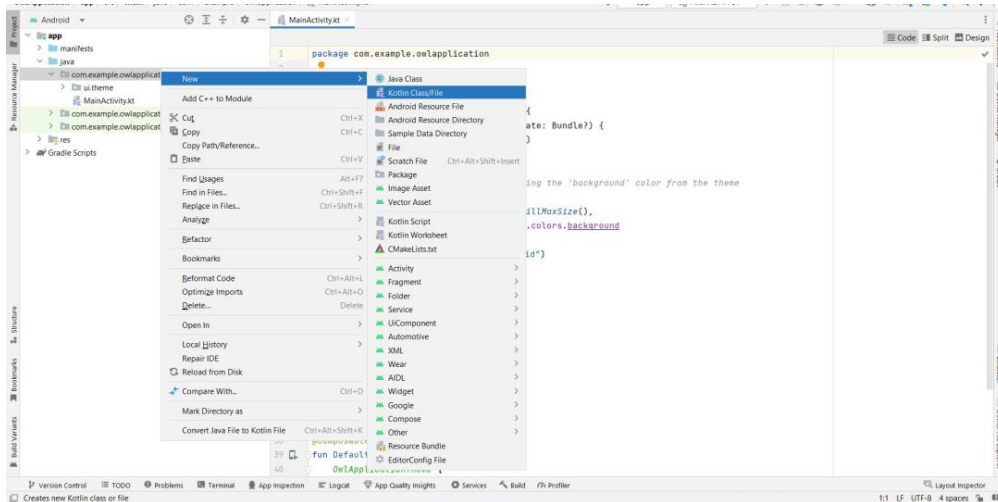


Step 3 : Click on Sync now

## Task 4:

1. Creating the database classes for user login and registration.

Step 1 : Create User data class

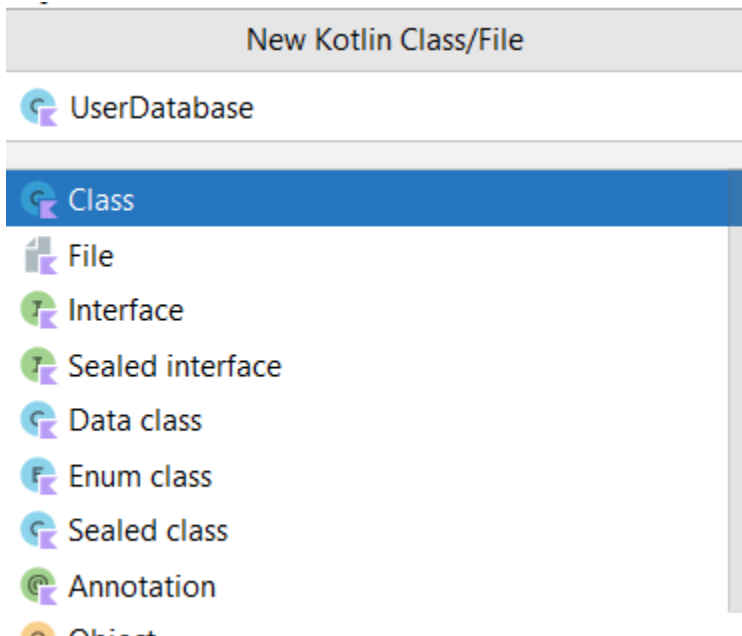
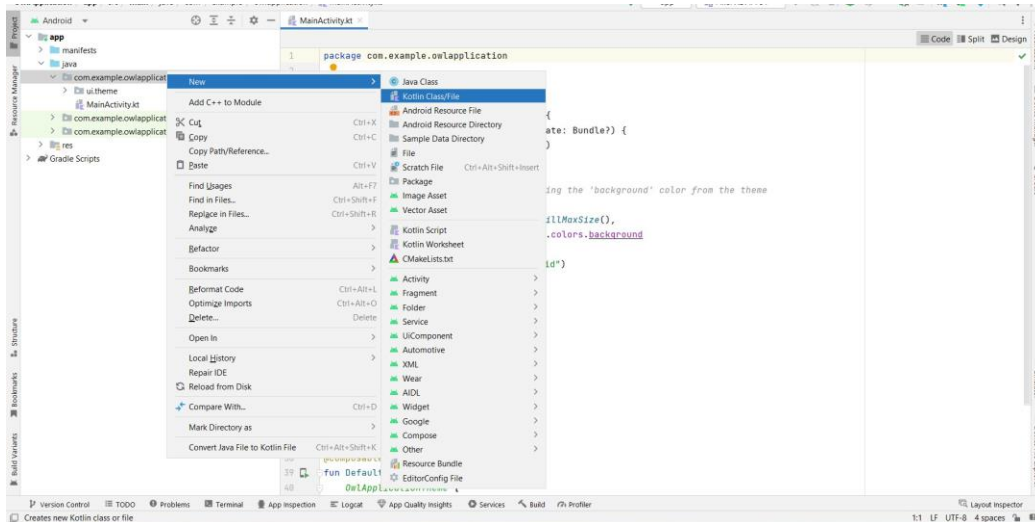


User data class code:

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensestracker/User.kt>

Step 2 : Create an UserDao interface



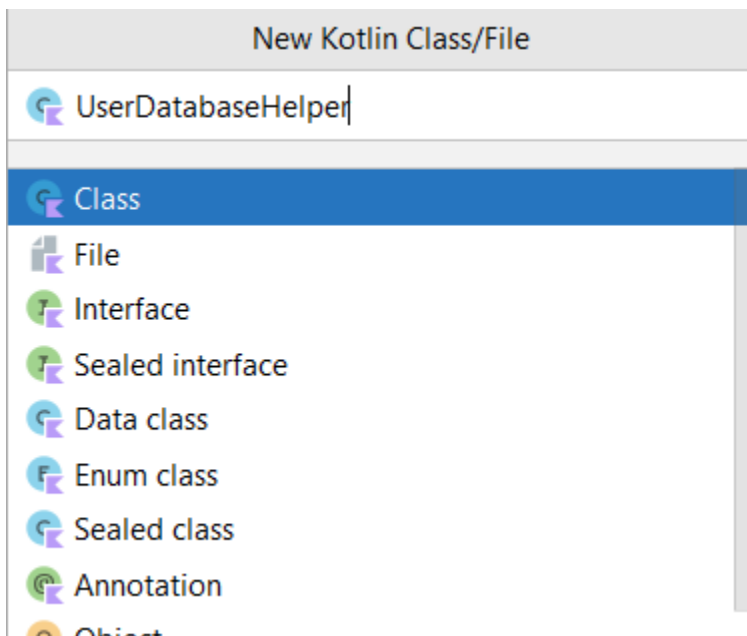
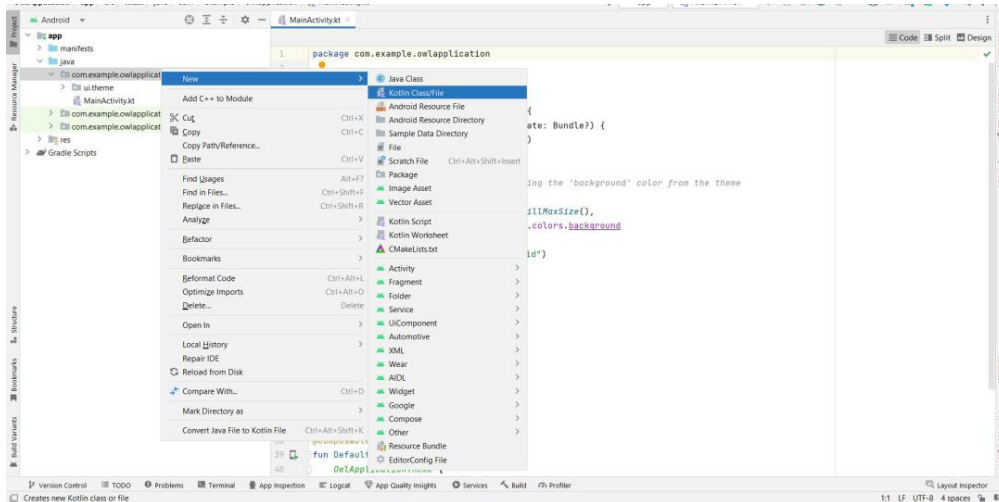


UserDatabase class code :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensestracker/UserDatabase.kt>

Step 4 : Create an UserDatabaseHelper class



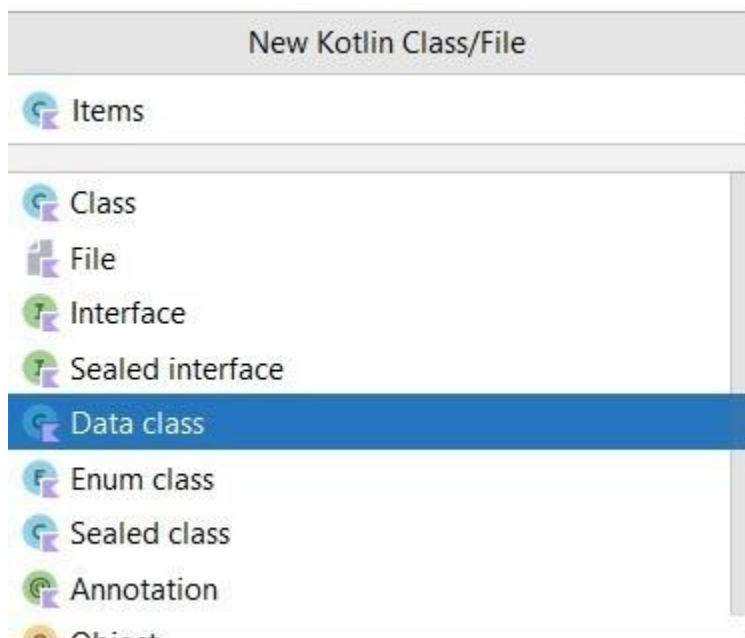
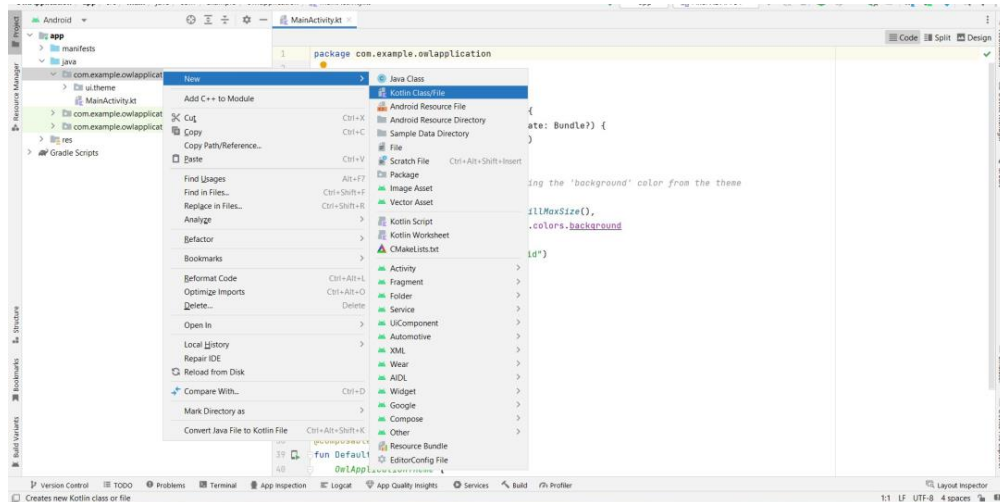


UserDatabaseHelper class code :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensestracker/UserDatabaseHelper.kt>

2. Creating the database classes for item name, quantity and cost.

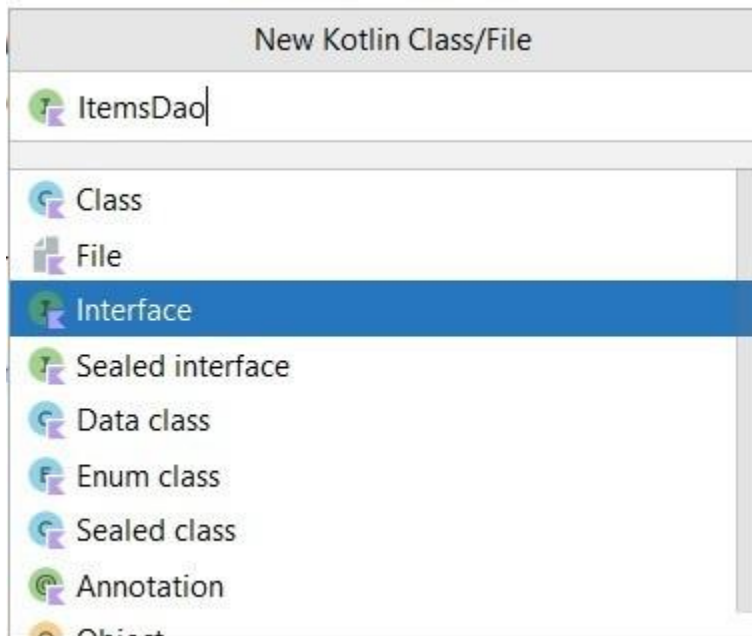
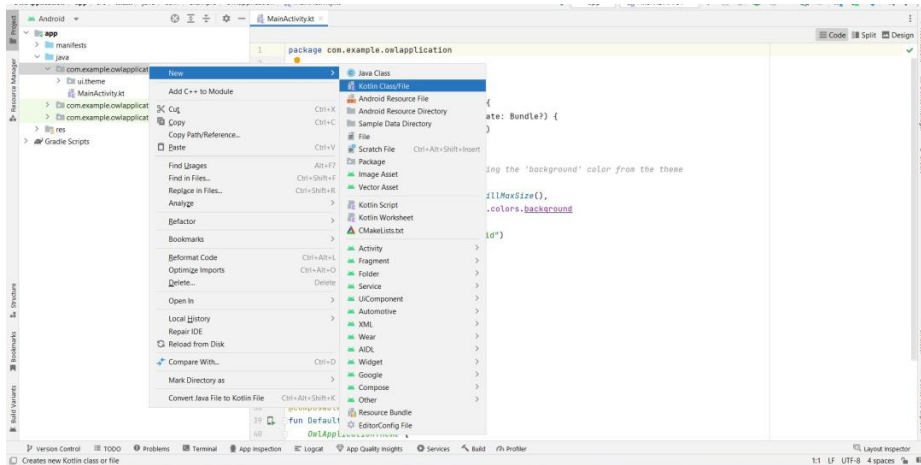
Step 1 : Create Items data class



Items Data class code :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/Items.kt>

Step 2 : Create ItemsDao interface

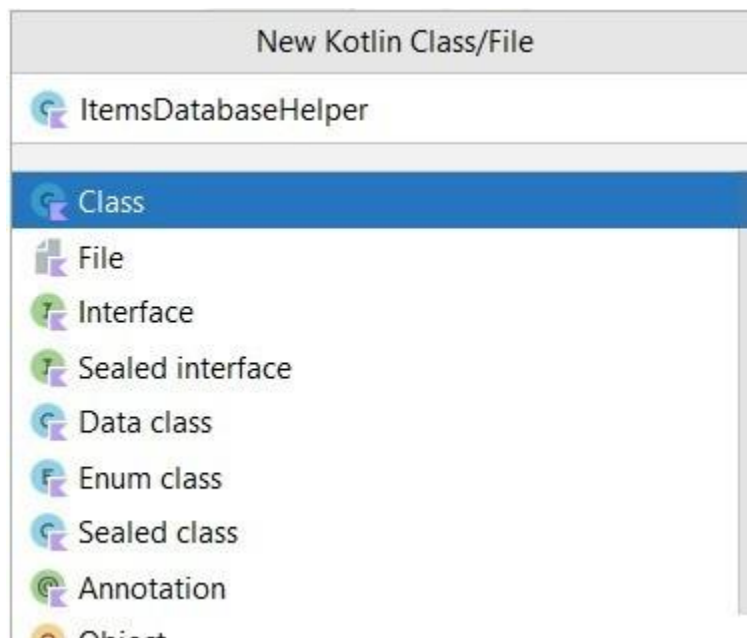
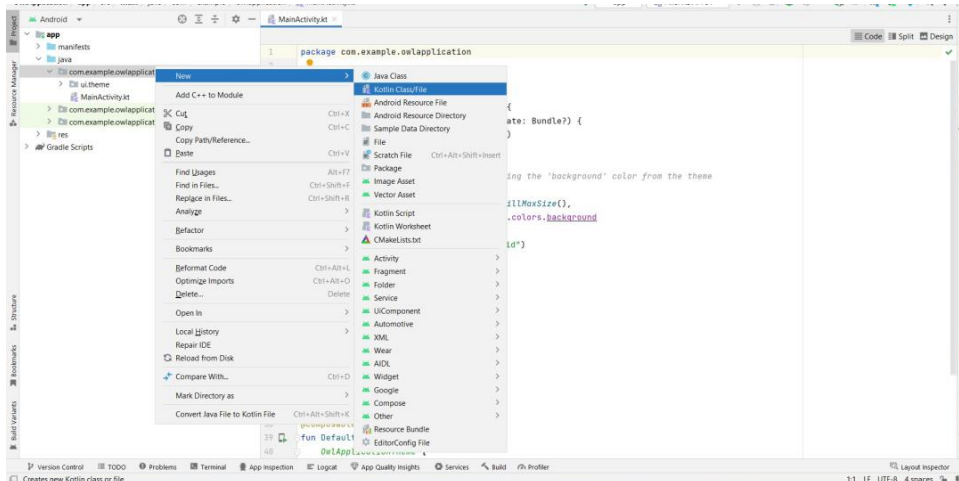


ItemsDao interface code :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensestracker/ItemsDao.kt>

Step 3 : Create ItemsDatabase class



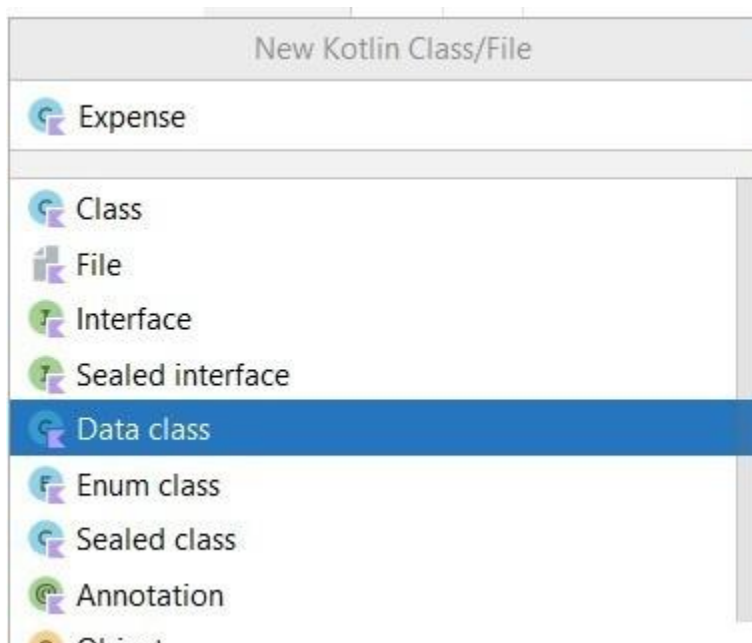
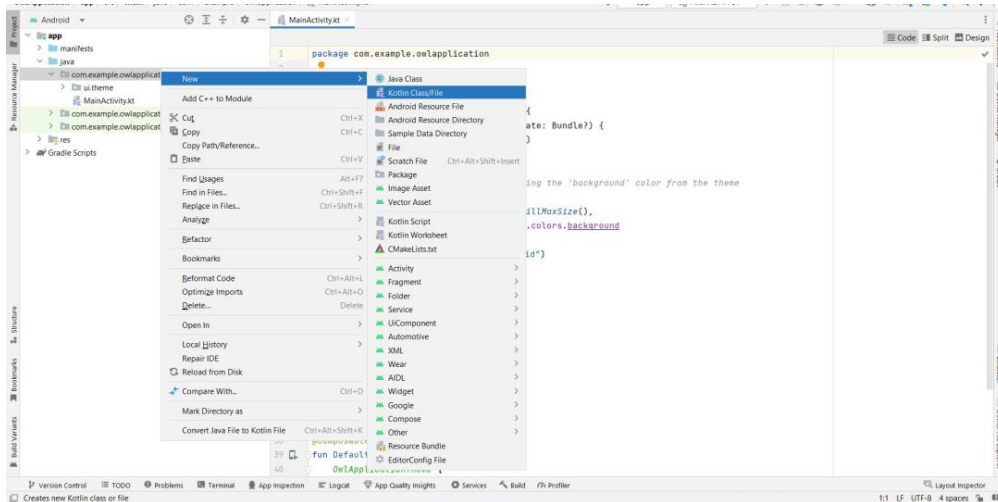


ItemsDatabaseHelper class code :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/ItemsDatabaseHelper.kt>

3. Creating the database classes for an amount.

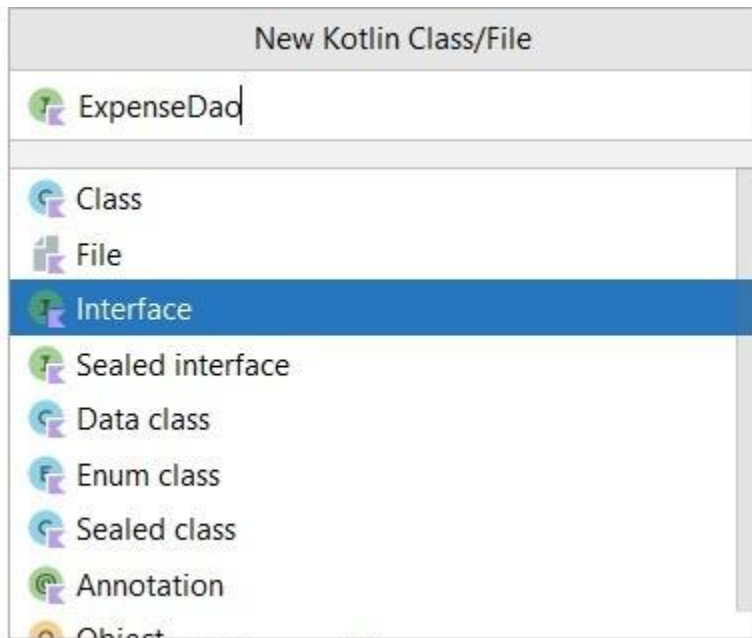
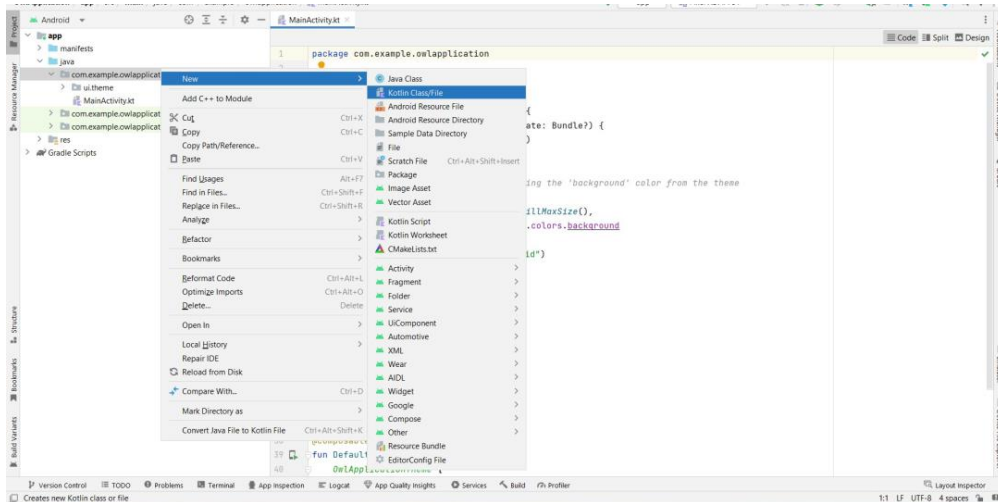
Step 1 : Create Expense data class



Expense data class Code:

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/Expense.kt>

Step 2 : Create ExpenseDao interface



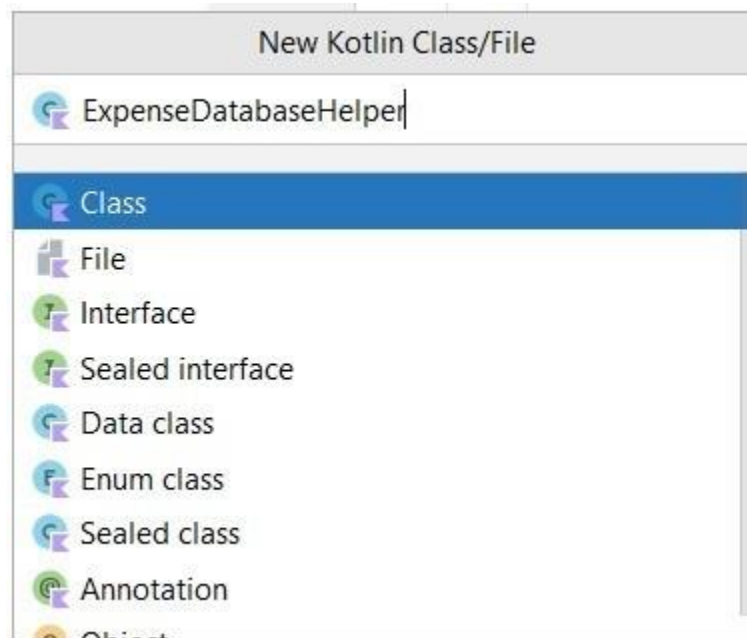
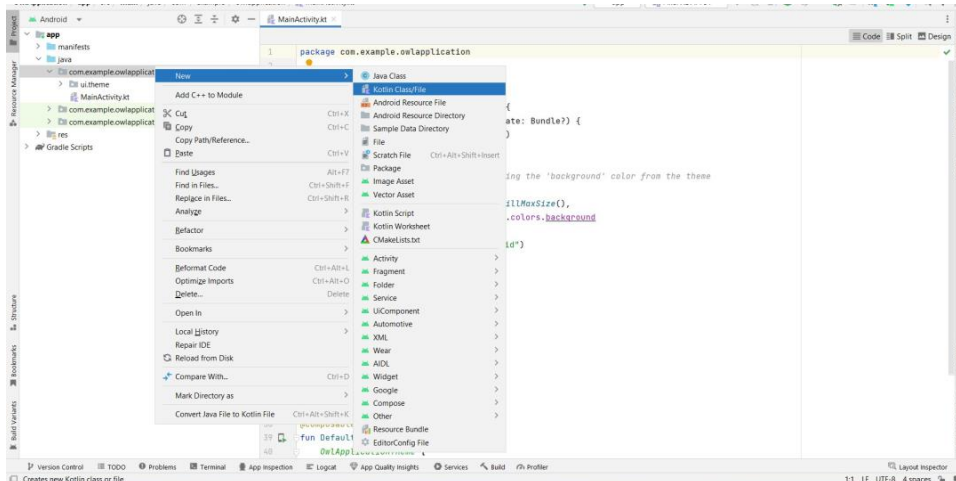
ExpenseDao interface Code :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensestracker/ExpenseDao.kt>

Step 3 : Create ExpenseDatabase class







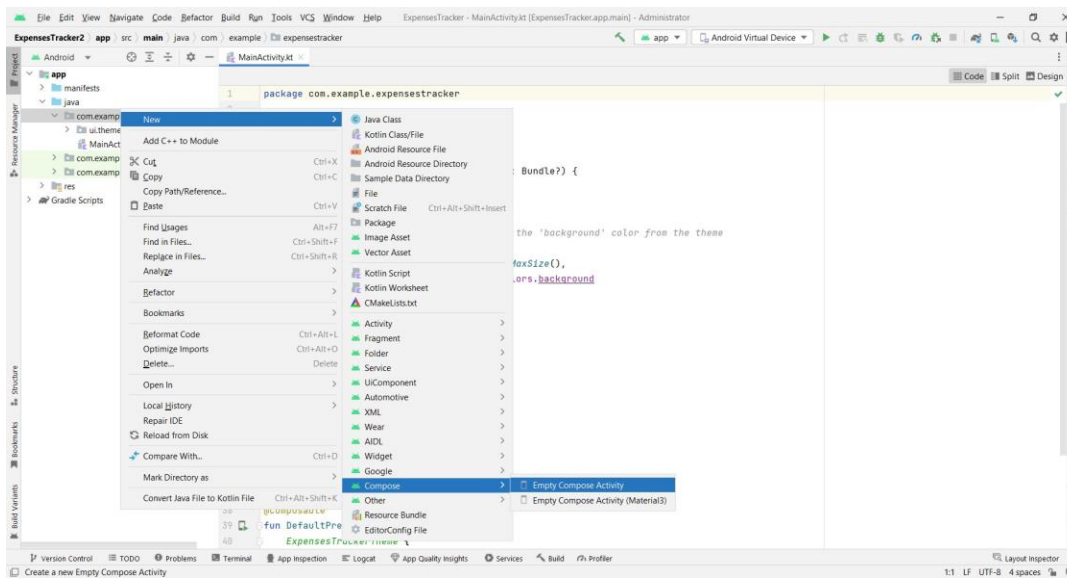
ExpenseDatabaseHelper class Code :


<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/ExpenseDatabaseHelper.kt>

## Task 5:

Building application UI and connecting to database.

Step 1: Creating LoginActivity.kt with database



 New Android Activity ✕

**Empty Compose Activity**  
Create a new empty activity with Jetpack Compose

Activity Name

Package name

☐ Launcher Activity

Previous

Next

Cancel

Finish

Database connection in LoginActivity.kt

```

package com.example.expensetracker

import ...

class LoginActivity : AppCompatActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper(context = this)
        setContentView {
            ExpensesTrackerTheme {
                // A surface container using the 'background' color from the theme
                Surface(
                    modifier = Modifier.fillMaxSize(),
                    color = MaterialTheme.colors.background
                ) {
                    LoginScreen(context = this, databaseHelper)
                }
            }
        }
    }
}

@Composable
fun LoginScreen(context: Context, databaseHelper: UserDatabaseHelper) {

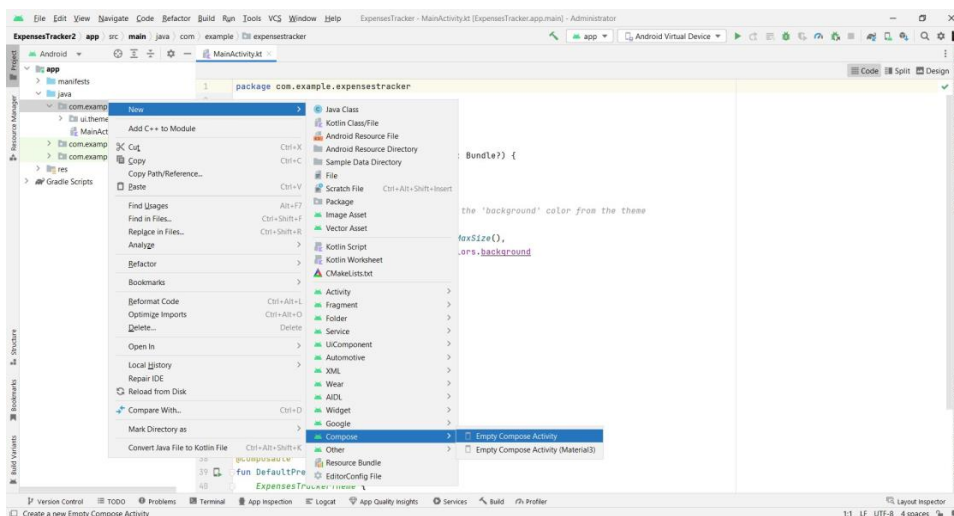
    Image(
        painterResource(id = R.drawable.img_1), contentDescription = "",
        alpha = 0.3F,
        contentScale = ContentScale.FillHeight,

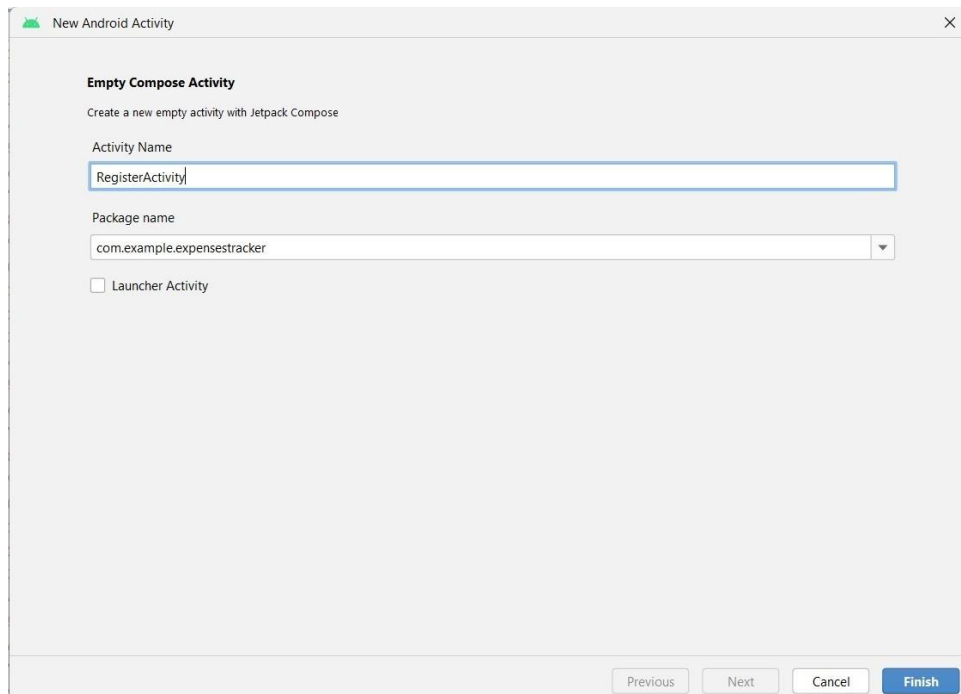
```

Complete Code :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/LoginActivity.kt>

Step 2 : Creating RegisterActivity.kt with database





## Database connection in RegisterActivity.kt

```
package com.example.expensetracker

import ...

class RegisterActivity : ComponentActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper(context = this)
        setContent {
            ExpensesTrackerTheme {
                // A surface container using the 'background' color from the theme
                Surface(
                    modifier = Modifier.fillMaxSize(),
                    color = MaterialTheme.colors.background
                ) {
                    RegistrationScreen(context = this, databaseHelper)
                }
            }
        }
    }
}

@Composable
fun RegistrationScreen(context: Context, databaseHelper: UserDatabaseHelper) {

    Image(
        painterResource(id = R.drawable.img_1), contentDescription = "",
        alpha = 0.3F,
    )
}
```

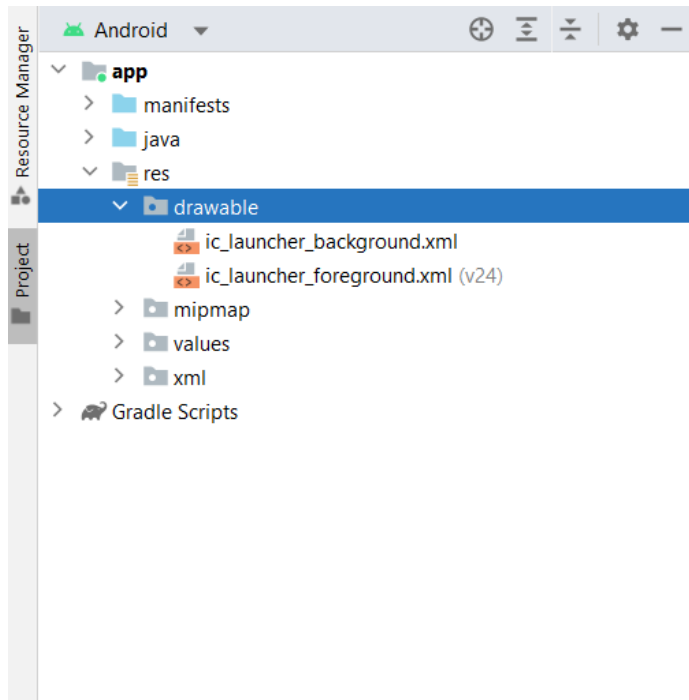
Complete code in below link:

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/RegisterActivity.kt>

Step 3 : Creating MainActivity.kt file

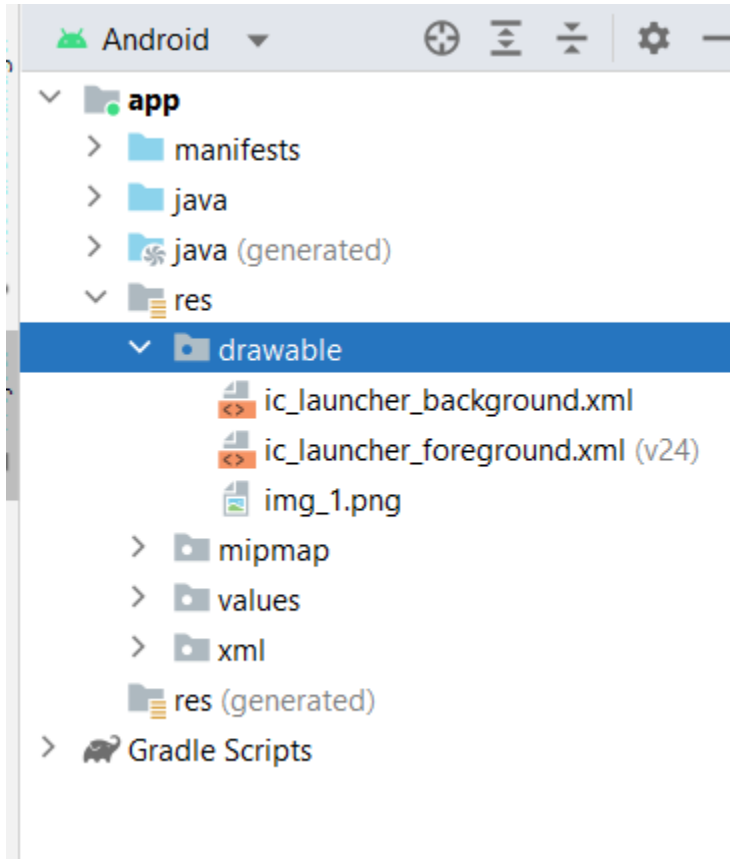
In MainActivity.kt file the main application is developed

- Before creating UI we need to add some images in drawables which are in res



Download the required drawable from the code:

<https://github.com/smartinternz02/Expense-Tracker-App/tree/master/app/src/main/res/drawable>



## MainActivity.kt

```
package com.example.expensetracker

import ...

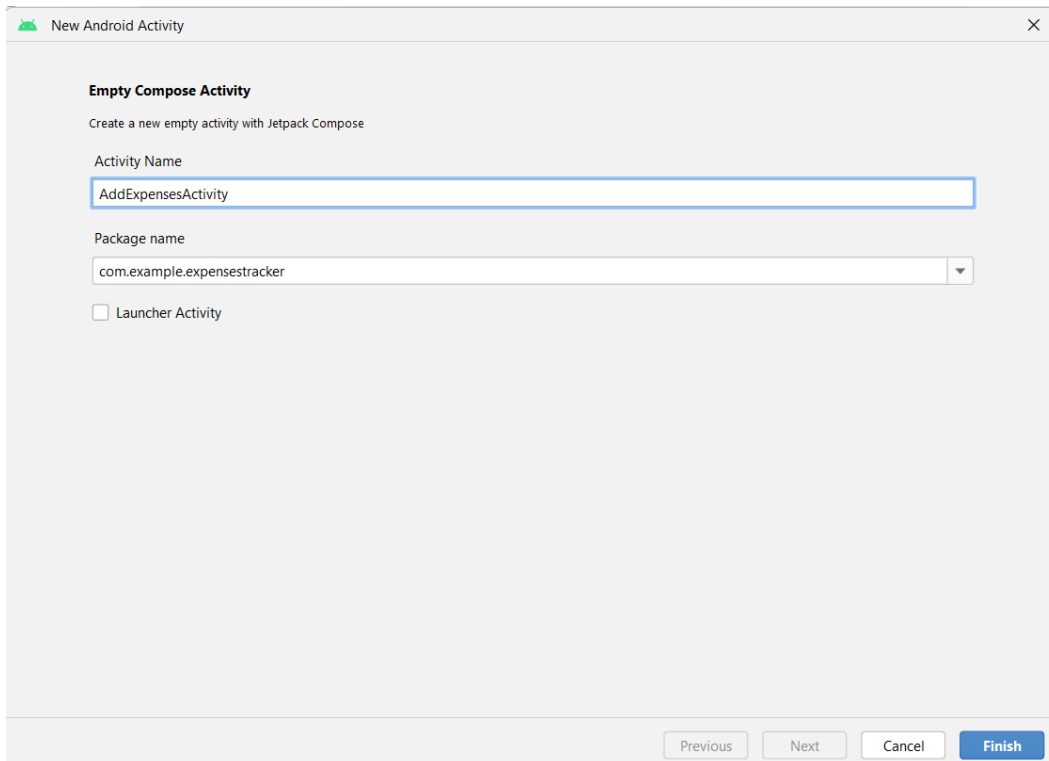
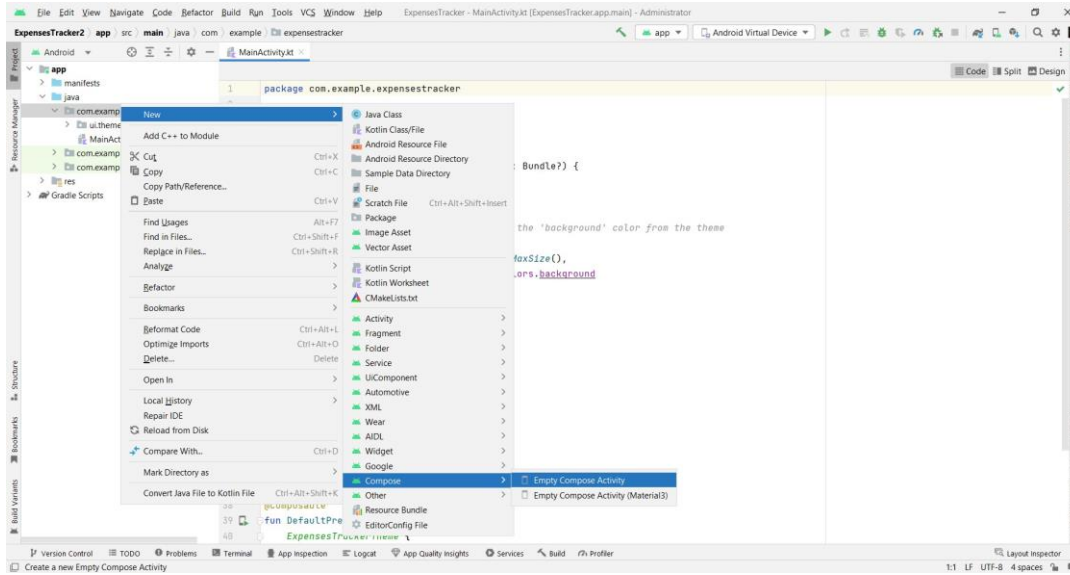
class MainActivity : AppCompatActivity() {
    @SuppressWarnings("UnusedMaterialScaffoldPaddingParameter")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView {
            Scaffold(
                // in scaffold we are specifying top bar.
                bottomBar = {
                    // inside top bar we are specifying
                    // background color.
                    BottomAppBar(backgroundColor = Color( color = 0xFFadbf4),
                        modifier = Modifier.height(80.dp),
                        // along with that we are specifying
                        // title for our top bar.
                        content = { this: RowScope
                            Spacer(modifier = Modifier.width(15.dp))

                            Button(
                                onClick = {startActivity(Intent(applicationContext, AddExpensesActivity::class.java))},
                                colors = ButtonDefaults.buttonColors(backgroundColor = Color.White),
                                modifier = Modifier.size(height = 55.dp, width = 110.dp)
                            )
                        } this: RowScope
                            Text(
                                text = "Add Expenses", color = Color.Black, fontSize = 14.sp,
```

Complete code in below link:

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensestracker/MainActivity.kt>

## Step 4 : Creating AddExpensesActivity.kt file



```

package com.example.expensetracker

import ...

class AddExpensesActivity : ComponentActivity() {
    private lateinit var itemsDatabaseHelper: ItemsDatabaseHelper
    private lateinit var expenseDatabaseHelper: ExpenseDatabaseHelper
    @SuppressWarnings("UnusedMaterialScaffoldPaddingParameter")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        itemsDatabaseHelper = ItemsDatabaseHelper(context: this)
        expenseDatabaseHelper = ExpenseDatabaseHelper(context: this)
        setContentView {
            Scaffold {
                // in scaffold we are specifying top bar.
                bottomBar = {
                    // inside top bar we are specifying
                    // background color.
                    BottomAppBar(background-color = Color(0xFFfAdBef4),
                        modifier = Modifier.height(80.dp),
                        // along with that we are specifying
                        // title for our top bar.
                        content = { this: RowScope

                            Spacer(modifier = Modifier.width(15.dp))

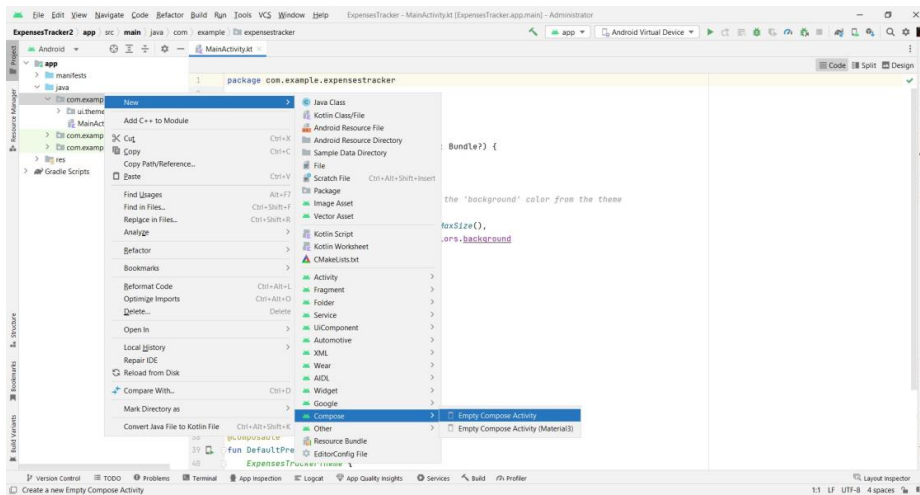
                            Button(
                                onClick = {startActivity(Intent(applicationContext, AddExpensesActivity::class.java))},
                                colors = ButtonDefaults.buttonColors(background-color = Color.White),
                                modifier = Modifier.size(height = 55.dp, width = 110.dp)
                            )
                        }
                    )
                }
            }
        }
    }
}

```

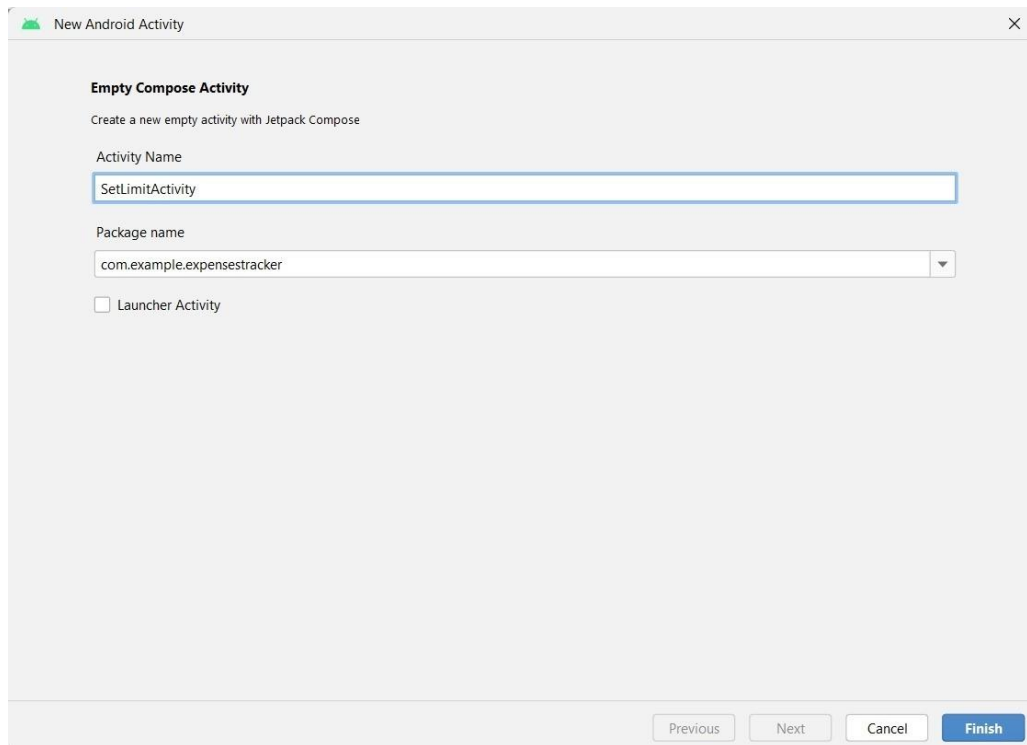
Complete code in below link :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/AddExpensesActivity.kt>

## Step 5 : Creating SetLimitActivity.kt file







```
package com.example.expensetracker

import ...

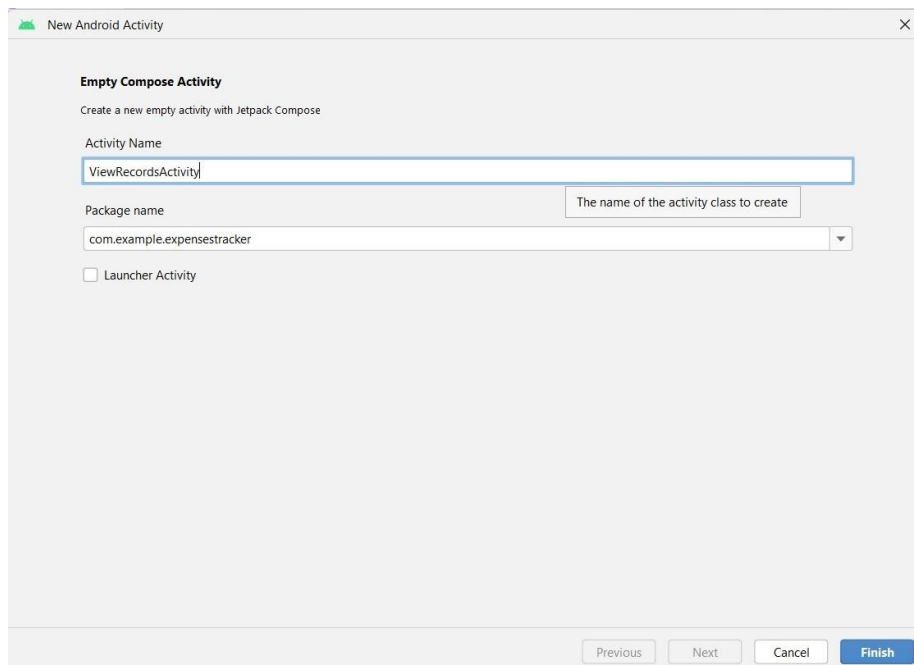
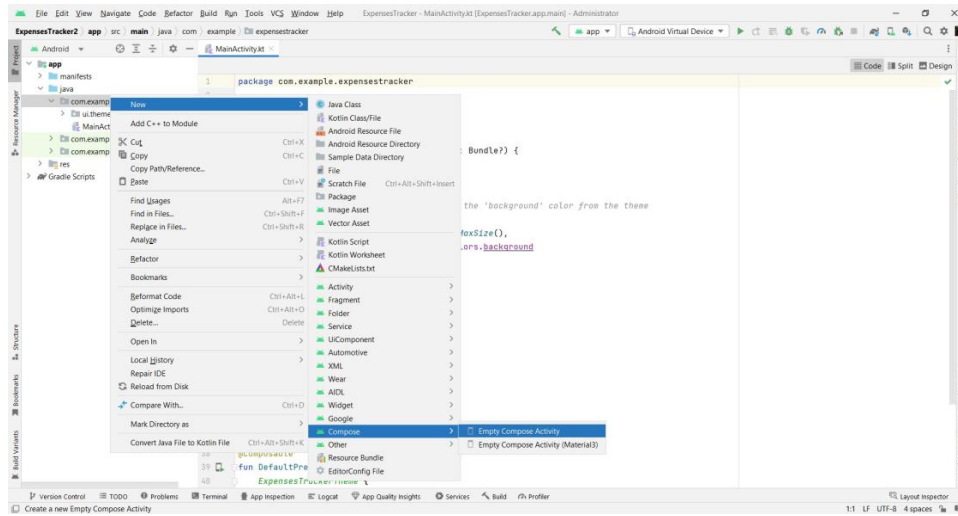
class SetLimitActivity : ComponentActivity() {
    private lateinit var expenseDatabaseHelper: ExpenseDatabaseHelper
    @SuppressWarnings("UnusedMaterialScaffoldPaddingParameter")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        expenseDatabaseHelper = ExpenseDatabaseHelper(context = this)
        setContent {
            Scaffold(
                // in scaffold we are specifying top bar.
                bottomBar = {
                    // inside top bar we are specifying
                    // background color.
                    BottomAppBar(backgroundColor = Color(color = 0xFFadbf4),
                        modifier = Modifier.height(80.dp),
                        // along with that we are specifying
                        // title for our top bar.
                        content = { this: RowScope
                            Spacer(modifier = Modifier.width(15.dp))

                            Button(
                                onClick = {
                                    startActivity(
                                        Intent(
                                            applicationContext,
                                            AddExpensesActivity::class.java
                                        )
                                    )
                                }
                            )
                        }
                    )
                }
            )
        }
    }
}
```

Complete code in below link :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/SetLimitActivity.kt>

## Step 6 : Creating ViewRecordsActivity.kt file



```

package com.example.expensetracker

import ...

class ViewRecordsActivity : ComponentActivity() {
    private lateinit var itemsDatabaseHelper: ItemsDatabaseHelper
    @SuppressWarnings("UnusedMaterialScaffoldPaddingParameter", "SuspiciousIndentation")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        itemsDatabaseHelper = ItemsDatabaseHelper(context = this)
        setContentView {
            Scaffold(
                // In scaffold we are specifying top bar.
                bottomBar = {
                    // Inside top bar we are specifying
                    // background color.
                    BottomAppBar(backgroundColor = Color(0xFFadbf4),
                        modifier = Modifier.height(80.dp),
                        // along with that we are specifying
                        // title for our top bar.
                        content = { this@RowScope

                            Spacer(modifier = Modifier.width(15.dp))

                            Button(
                                onClick = {
                                    startActivity(
                                        Intent(
                                            applicationContext,
                                            AddExpensesActivity::class.java

```

Complete code in below link :

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/java/com/example/expensetracker/ViewRecordsActivity.kt>

## Task 6:

Modifying AndroidManifest.xml

```

        android:label="LoginActivity"
        android:theme="@style/Theme.ExpensesTracker" />
    <activity
        android:name=".ViewRecordsActivity"
        android:exported="false"
        android:label="ViewRecordsActivity"
        android:theme="@style/Theme.ExpensesTracker" />
    <activity
        android:name=".SetLimitActivity"
        android:exported="false"
        android:label="SetLimitActivity"
        android:theme="@style/Theme.ExpensesTracker" />
    <activity
        android:name=".AddExpensesActivity"
        android:exported="false"
        android:label="AddExpensesActivity"
        android:theme="@style/Theme.ExpensesTracker" />
    <activity
        android:name=".MainActivity"
        android:exported="true"
        android:label="Expenses Tracker"
        android:theme="@style/Theme.ExpensesTracker">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
</application>

```

When we run the app we will get the MainActivity.kt file as our first screen , but we want LoginActivity.kt , So we need to change in AndroidManifest.xml.

Changed AndroidManifest.xml

```

    android:label="MainActivity"
    android:theme="@style/Theme.ExpensesTracker" />
<activity
    android:name=".ViewRecordsActivity"
    android:exported="false"
    android:label="ViewRecordsActivity"
    android:theme="@style/Theme.ExpensesTracker" />
<activity
    android:name=".SetLimitActivity"
    android:exported="false"
    android:label="@string/title_activity_set_limit"
    android:theme="@style/Theme.ExpensesTracker" />
<activity
    android:name=".AddExpensesActivity"
    android:exported="false"
    android:label="AddExpensesActivity"
    android:theme="@style/Theme.ExpensesTracker" />
<activity
    android:name=".LoginActivity"
    android:exported="true"
    android:label="Expenses Tracker"
    android:theme="@style/Theme.ExpensesTracker">
    <intent-filter>
        <action android:name="android.intent.action.MAIN" />

        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
</activity>
</application>

```

Complete AndroidManifest.xml code:

<https://github.com/smartinternz02/Expense-Tracker-App/blob/master/app/src/main/AndroidManifest.xml>

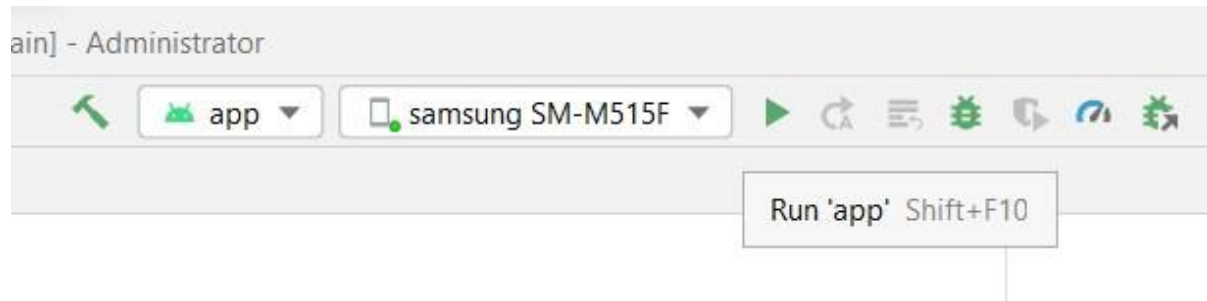
## Task 7:

Running the application.

Step 1: Run apps on a hardware device

<https://developer.android.com/studio/run/device>

Step 2: Run the application in Mobile

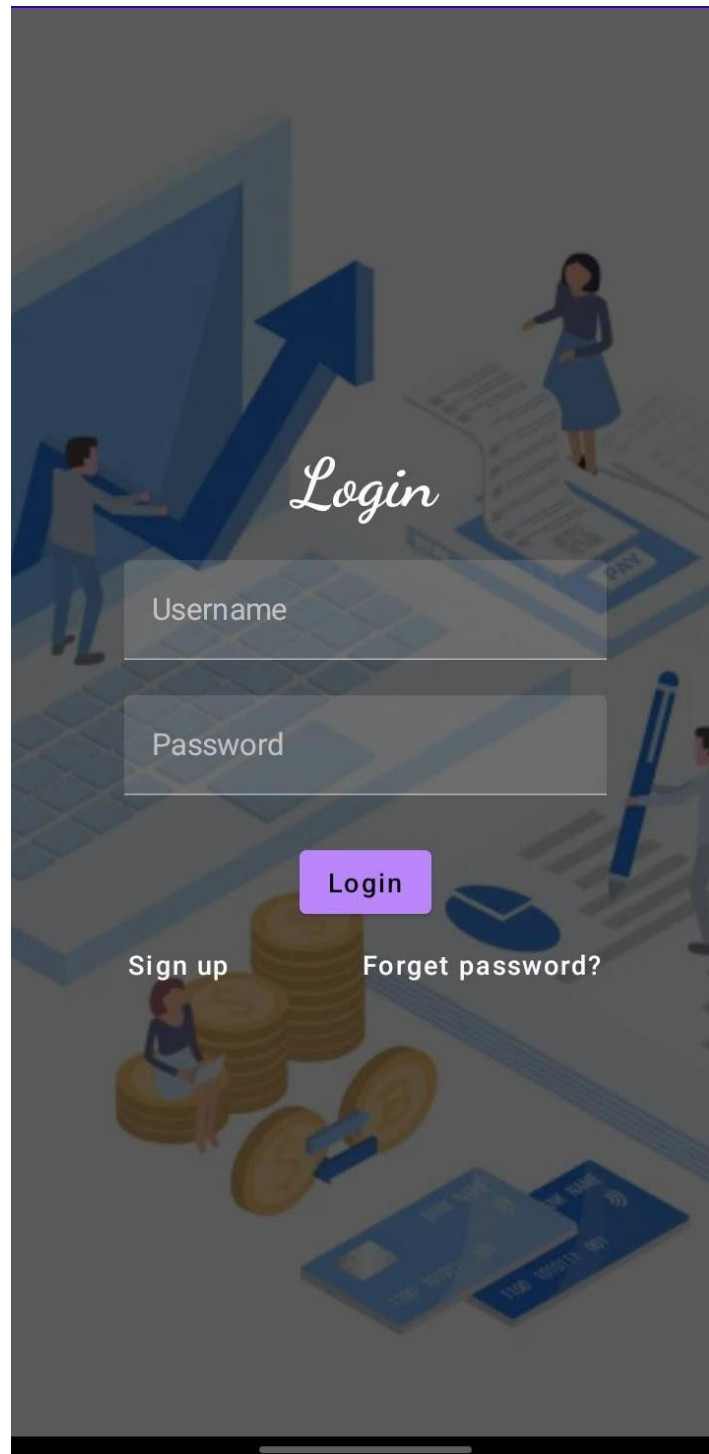


**Complete Project Link:**

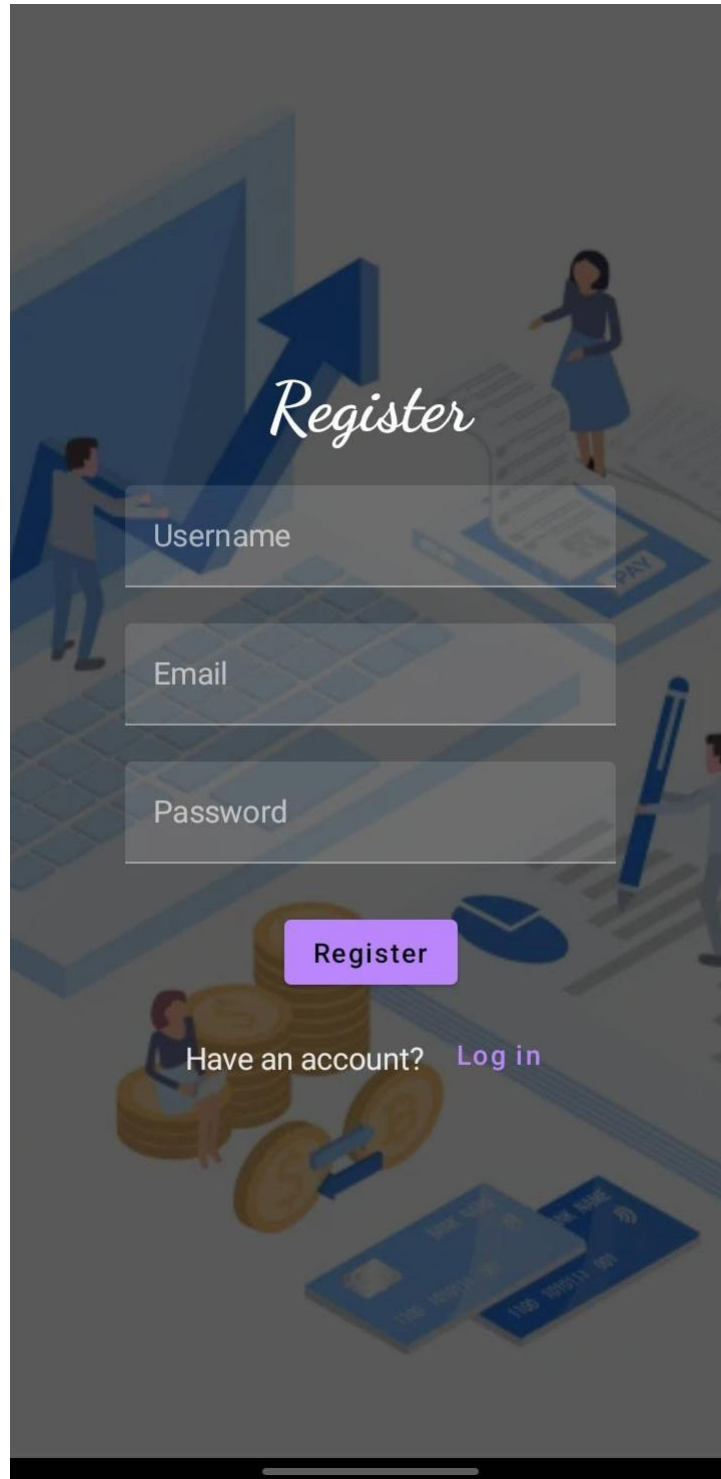
<https://github.com/smartinternz02/Expense-Tracker-App>

**Final Output of the Application :**

Login Page :



RegisterPage :



MainPage :



---

# Welcome To Expense Tracker



Add  
Expenses

Set Limit

View  
Records

Add Expenses page:

---

### Item Name

Item Name  
pizza

### Quantity of item

Quantity  
2

### Cost of the item

Cost  
400

Submit

Add  
Expenses

Set Limit

View  
Records

Set Limit Page before adding any data in expenses:

## Monthly Amount Limit

Set Amount Limit

Set Limit

Remaining Amount: 10000

Add  
Expenses

Set Limit

View  
Records

View Records Page:

---

## View Records

Item\_Name: pizza  
Quantity: 2  
Cost: 400

Item\_Name: cake  
Quantity: 3  
Cost: 300



Set Limit Page After adding expenses in add expense page:

---

# Monthly Amount Limit

Set Amount Limit

Set Limit

Remaining Amount: 9300

Add Expenses

Set Limit

View Records