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## CODE:

The screenshot shows the Android Studio interface with the code editor open to MainActivity.java. The code implements an AppCompatActivity with onCreate() and onClick() methods for login and register buttons. It uses SQLiteHelper to interact with a database. The code editor has syntax highlighting and code completion suggestions.

```
package com.example.notesapp;

import android.annotation.SuppressLint;
import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    Button LogInButton, RegisterButton ;
    EditText Email, Password ;
    String EmailHolder, PasswordHolder;
    Boolean EditTextEmptyHolder;
    SQLiteDatabase SQLiteDatabaseObj;
    SQLiteHelper SQLiteHelper;

    Cursor cursor;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        LogInButton = (Button)findViewById(R.id.buttonLogin);
        RegisterButton = (Button)findViewById(R.id.buttonRegister);
        Email = (EditText)findViewById(R.id.editEmail);
        Password = (EditText)findViewById(R.id.editPassword);
        SQLiteHelper = new SQLiteHelper(context: this);
        LogInButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                CheckEditTextStatus();
                LoginFunction();
            }
        });
        RegisterButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(packageContext: MainActivity.this, RegisterActivity.class);
                startActivity(intent);
            }
        });
    }

    @SuppressLint("Range")
    public void LoginFunction(){
        if(EditTextEmptyHolder){
            SQLiteDatabaseObj = SQLiteHelper.getWritableDatabase();
            cursor = SQLiteDatabaseObj.query(SQLiteHelper.TABLE_NAME, columns: null, selection: " " + SQLiteHelper.Table_Column_2_Email + " ", whereArgs: null);
            while (cursor.moveToNext()){
                if(cursor.isFirst()){
                    if(cursor.getString(cursor.getColumnIndex(SQLiteHelper.Table_Column_2_Email)) == EmailHolder & cursor.getString(cursor.getColumnIndex(SQLiteHelper.Table_Column_2_Password)) == PasswordHolder){
                        Toast.makeText(this, "Success", duration: 1000).show();
                    } else {
                        Toast.makeText(this, "Incorrect Email or Password", duration: 1000).show();
                    }
                }
            }
        }
    }
}
```

The screenshot shows the same Android Studio interface with more code added to the LoginFunction() method. It includes a cursor loop to check if the email and password are correct, displaying success or failure messages using Toast.

```
if(cursor.isFirst()){
    if(cursor.getString(cursor.getColumnIndex(SQLiteHelper.Table_Column_2_Email)) == EmailHolder & cursor.getString(cursor.getColumnIndex(SQLiteHelper.Table_Column_2_Password)) == PasswordHolder){
        Toast.makeText(this, "Success", duration: 1000).show();
    } else {
        Toast.makeText(this, "Incorrect Email or Password", duration: 1000).show();
    }
}
```

The screenshot shows the Android Studio interface with the project 'Note-App-master' open. The main focus is on the code editor displaying `MainActivity.java`. The code handles user authentication logic, including checking email and password, and displaying success or error messages via Toast notifications. The code editor includes syntax highlighting and code completion suggestions.

```
cursor.moveToFirst();
TempPassword = cursor.getString(cursor.getColumnIndex(SQLiteHelper.Table_Column_3_Password));
cursor.close();
}
CheckFinalResult();
}
else
Toast.makeText(context: MainActivity.this, text: "Please Enter UserName or Password.", Toast.LENGTH_LONG).show();
}
1 usage
public void CheckEditTextStatus(){
EmailHolder = Email.getText().toString();
PasswordHolder = Password.getText().toString();
if( TextUtils.isEmpty>EmailHolder || TextUtils.isEmpty>PasswordHolder)
EditTextEmptyHolder = false ;
else
EditTextEmptyHolder = true ;
}
1 usage
public void CheckFinalResult(){
if(TempPassword.equalsIgnoreCase>PasswordHolder) {
Toast.makeText(context: MainActivity.this, text: "Login Successful", Toast.LENGTH_LONG).show();
Intent intent = new Intent(packageContext: MainActivity.this, NotesActivity.class);
startActivity(intent);
}
else
Toast.makeText(context: MainActivity.this, text: "UserName or Password is Wrong, Please Try Again.", Toast.LENGTH_LONG).show();
TempPassword = "NOT_FOUND" ;
}
}
```

The screenshot shows the Android Studio interface with the project 'Note-App-master' open. The main focus is on the code editor displaying `DashboardActivity.java`. This activity handles the logout functionality, specifically the button click event. It retrieves the email from the previous activity, constructs a logout intent, and displays a success message using a Toast notification. The code editor shows the implementation of the `onCreate` and `onClick` methods.

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

3 usages
public class DashboardActivity extends AppCompatActivity {

2 usages
String EmailHolder;
3 usages
TextView Email;
2 usages
Button LogOUT;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_dashboard);
Email = (TextView) findViewById(R.id.textView1);
LogOUT = (Button) findViewById(R.id.button1);
Intent intent = getIntent();
EmailHolder = intent.getStringExtra(MainActivity.UserEmail);
Email.setText(EmailHolder);
LogOUT.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
finish();
Toast.makeText(context: DashboardActivity.this, text: "Log Out Successful", Toast.LENGTH_LONG).show();
}
});
}
}
```

The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Refactor, Build, Run, Tools, VCS, Window, Help, Notes App - Note.kt [Notes\_App.app.main].
- Toolbar:** Main Activity.java, DashboardActivity.java, Note.kt, app, Pixel 6 Pro API 30.
- Project Structure:** Shows the project tree with modules: app (manifests, java), com.example.notesapp (Note, NoteDao, NoteDatabase, NoteRepository, NotesActivity, NotesRVAdapter.kt, NoteViewModel, RegisterActivity, SQLiteHelper), and generated Java files.
- Resource Manager:** Shows resources: res (drawable, layout) and build variants.
- Code Editor:** The Note.kt file is open, showing the following code:

```
package com.example.notesapp

import androidx.room.ColumnInfo
import androidx.room.Entity
import androidx.room.PrimaryKey

@Entity(tableName = "notes_table")
class Note(@ColumnInfo(name = "text") var text : String) {
    @PrimaryKey(autoGenerate = true) var id = 0
}
```

The code defines a class Note with a primary key id and a column text. The Entity annotation specifies the table name as notes\_table.

The screenshot shows the Android Studio interface with the following details:

- File Bar:** File, Edit, View, Navigate, Code, Refactor, Build, Run, Tools, VCS, Window, Help.
- Project Bar:** Notes App - NoteDatabase.kt [Notes\_App.app.main].
- Toolbars:** Resource Manager, Project, Bookmarks, Build Variants, Structure, Version Control, Profiler, Logcat, App Quality Insights, TODO, Problems, Terminal, Services, App Inspection.
- Code Editor:** The main window displays the `NoteDatabase.kt` file under the `com.example.notesapp` package. The code implements a Room database with a single table `Note`. It includes a `NoteDao` interface and a `NoteDatabase` class that uses `RoomDatabase.Builder` to build the database.
- Bottom Bar:** Project update recommended: Android Gradle Plugin can be upgraded. (26 minutes ago), Version Control, Profiler, Logcat, App Quality Insights, TODO, Problems, Terminal, Services, App Inspection, Layout Inspector.
- Status Bar:** 8:16, LF, UTF-8, 4 spaces, ENG IN, 28-03-2023, 21:35.

The screenshot shows the Android Studio interface with the project 'Note-App-master' open. The 'NoteRepository.kt' file is the active editor. The code implements a repository pattern for handling notes:

```
package com.example.notesapp

import androidx.lifecycle.LiveData

class NoteRepository(private val noteDao: NoteDao) {

    val allNotes: LiveData<List<Note>> = noteDao.getAllNotes()

    suspend fun insert(note: Note) {
        noteDao.insert(note)
    }
    suspend fun delete(note: Note) {
        noteDao.delete(note)
    }
}
```

The project structure on the left includes files like MainActivity.java, DashboardActivity.java, Note.kt, NoteDatabase.kt, and NoteRepository.kt. The bottom status bar shows battery at +0.47%, network connection, and the date/time.

The screenshot shows the Android Studio interface with the project 'Note-App-master' open. The 'NotesActivity.kt' file is the active editor. The code defines an activity that uses a RecyclerView to display notes:

```
package com.example.notesapp

import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity
import androidx.recyclerview.widget.LinearLayoutManager
import androidx.recyclerview.widget.RecyclerView
import com.example.notesapp.databinding.ActivityMainBinding
import com.example.notesapp.viewModel.NoteViewModel
import com.example.notesapp.viewModel.NoteViewModelProvider
import com.google.android.material.snackbar.Snackbar
import java.util.List

class NotesActivity : AppCompatActivity(), INotesRVAdapter {

    private lateinit var viewModel: NoteViewModel

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        recyclerView.layoutManager = LinearLayoutManager(this)
        val adapter = NotesRVAdapter(this, listener)
        recyclerView.adapter = adapter

        viewModel = ViewModelProvider(this).get(NoteViewModel::class.java)
        viewModel.allNotes.observe(this, Observer { list ->
            list?.let { adapter.updateList(it) }
        })
    }

    override fun onItemClicked(note: Note) {
        viewModel.deleteNote(note)
        Toast.makeText(this, "${note.text} Deleted", Toast.LENGTH_LONG).show()
    }

    fun submitData(view: View) {
        val noteText = input.text.toString()
        if (!noteText.isNotEmpty()) {
            viewModel.insertNote(Note(noteText))
        }
    }
}
```

The project structure on the left includes files like MainActivity.java, DashboardActivity.java, Note.kt, NoteDatabase.kt, and NoteRepository.kt. The bottom status bar shows battery at +0.47%, network connection, and the date/time.

```
36     }
37
38     fun submitData(view: View) {
39         val noteText = input.text.toString()
40         if (noteText.isNotEmpty()){
41             viewModel.insertNote(Note(noteText))
42             Toast.makeText(context, "Note Inserted", Toast.LENGTH_LONG).show()
43         }
44     }
45
46     override fun onBackPressed() {
47
48         val builder = AlertDialog.Builder(context)
49         builder.setMessage("Do you want to exit ?")
50         builder.setTitle("Alert !")
51         builder.setCancelable(false)
52         builder.setPositiveButton("Yes") { dialog, which -> finish()
53         }
54         builder.setNegativeButton("No") { dialog, which -> dialog.cancel()
55         }
56
57         val alertDialog = builder.create()
58         alertDialog.show()
59     }
60
61 }
```

Project update recommended: Android Gradle Plugin can be upgraded. (26 minutes ago)

```
1 package com.example.notesapp
2
3 import ...
4
5 class NoteViewModel(application: Application) : AndroidViewModel(application) {
6     private val repository: NoteRepository
7     val allNotes: LiveData<List<Note>>
8
9     init {
10         val dao = NoteDatabase.getDatabase(application).getNoteDao()
11         repository = NoteRepository(dao)
12         allNotes = repository.allNotes
13     }
14
15     fun deleteNote(note: Note) = viewModelScope.launch(Dispatchers.IO) { repository.delete(note) }
16
17     fun insertNote(note: Note) = viewModelScope.launch(Dispatchers.IO) { repository.insert(note) }
18
19 }
```

public object Dispatchers

Groups various implementations of CoroutineDispatcher.

kotlinx.coroutines

Dispatchers.class

Gradle:

org.jetbrains.kotlinx:kotlinx-coroutines-core-jvm:1.3.9 (kotlinx-coroutines-core-jvm-1.3.9.jar)

Project update recommended: Android Gradle Plugin can be upgraded. (26 minutes ago)

The screenshot shows the Android Studio interface with the RegisterActivity.java file open in the main editor. The code implements an AppCompatActivity for user registration. It includes imports for EditText, Button, SQLiteDatabase, Cursor, and String. The onCreate method sets the content view and finds the button for registration. The Email variable is set to an EditText. The code then moves to the InsertDataIntoSQLiteDatabase() method.

```
package com.example.notesapp;

import ...;

public class RegisterActivity extends AppCompatActivity {

    EditText Email, Password, Name;
    Button Register;
    String NameHolder, EmailHolder, PasswordHolder;
    Boolean EditTextEmptyHolder;
    SQLiteDatabase sqliteDatabaseObj;
    String SQLiteDataBaseQueryHolder;
    SQLiteHelper SQLiteHelper;
    Cursor cursor;
    String F_Result = "Not_Found";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_register);
        Register = (Button)findViewById(R.id.buttonRegister);
        Email = (EditText)findViewById(R.id.editEmail);
    }

    public void InsertDataIntoSQLiteDatabase(){
        if(EditTextEmptyHolder == true){
            SQLiteDataBaseQueryHolder = "INSERT INTO "+SQLiteHelper.TABLE_NAME+" (name,email,password) VALUES('"+NameHolder+"','"+EmailHolder+"','"+PasswordHolder+"')";
            sqliteDatabaseObj.execSQL(SQLiteDataBaseQueryHolder);
            sqliteDatabaseObj.close();
            Toast.makeText(RegisterActivity.this, "User Registered Successfully", Toast.LENGTH_LONG).show();
            Intent intent = new Intent(getApplicationContext(), NotesActivity.class);
            startActivity(intent);
        }
        else{
            Toast.makeText(RegisterActivity.this, "Please Fill All The Required Fields.", Toast.LENGTH_LONG).show();
        }
    }

    public void EmptyEditTextAfterDataInsert(){
        Name.getText().clear();
        Email.getText().clear();
        Password.getText().clear();
    }

    public void CheckEditTextStatus(){
        NameHolder = Name.getText().toString();
    }
}
```

The screenshot continues from the previous one, showing the completion of the InsertDataIntoSQLiteDatabase() method. It includes logic to insert data into the SQLite database and display a success toast message. The code then moves to the EmptyEditTextAfterDataInsert() and CheckEditTextStatus() methods.

```
    public void InsertDataIntoSQLiteDatabase(){
        if(EditTextEmptyHolder == true){
            SQLiteDataBaseQueryHolder = "INSERT INTO "+SQLiteHelper.TABLE_NAME+" (name,email,password) VALUES('"+NameHolder+"','"+EmailHolder+"','"+PasswordHolder+"')";
            sqliteDatabaseObj.execSQL(SQLiteDataBaseQueryHolder);
            sqliteDatabaseObj.close();
            Toast.makeText(RegisterActivity.this, "User Registered Successfully", Toast.LENGTH_LONG).show();
            Intent intent = new Intent(getApplicationContext(), NotesActivity.class);
            startActivity(intent);
        }
        else{
            Toast.makeText(RegisterActivity.this, "Please Fill All The Required Fields.", Toast.LENGTH_LONG).show();
        }
    }

    public void EmptyEditTextAfterDataInsert(){
        Name.getText().clear();
        Email.getText().clear();
        Password.getText().clear();
    }

    public void CheckEditTextStatus(){
        NameHolder = Name.getText().toString();
    }
}
```

The screenshot shows the Android Studio interface with the RegisterActivity.java file open. The code handles user input validation and database insertion. It includes methods like `CheckEditTextStatus`, `CheckingEmailAlreadyExistsOrNot`, and `CheckFinalResult`. The `InsertDataIntoSQLiteDatabase` method is also partially visible.

```
70     Email.getText().clear();
71     Password.getText().clear();
72 }
73 public void CheckEditTextStatus(){
74     NameHolder = Name.getText().toString();
75     EmailHolder = Email.getText().toString();
76     PasswordHolder = Password.getText().toString();
77     if(TextUtils.isEmpty(NameHolder) || TextUtils.isEmpty(EmailHolder) || TextUtils.isEmpty(PasswordHolder))
78         EditTextEmptyHolder = false;
79     else
80         EditTextEmptyHolder = true;
81 }
82 public void CheckingEmailAlreadyExistsOrNot(){
83     SQLiteDatabaseObj = sqliteHelper.getReadableDatabase();
84     cursor = SQLiteDatabaseObj.query(SQLiteHelper.TABLE_NAME, columns: null, selection: " " + SQLiteHelper.Table_Column_2_Email + "=?", null);
85     while (cursor.moveToNext()){
86         if (cursor.moveToFirst()){
87             cursor.moveToFirst();
88             F_Result = "Email Found";
89             cursor.close();
90         }
91     }
92     CheckFinalResult();
93 }
94 public void CheckFinalResult(){
95     if(F_Result.equalsIgnoreCase("Email Found"))
96         Toast.makeText(context: RegisterActivity.this, text: "Email Already Exists",Toast.LENGTH_LONG).show();
97     else
98         InsertDataIntoSQLiteDatabase();
99 }
100 }
```

The screenshot shows the Android Studio interface with the activity\_dashboard.xml layout file open. The XML code defines a dashboard screen with a relative layout containing a text view and a button.

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_dashboard"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="40dp"
    android:paddingLeft="40dp"
    android:paddingRight="40dp"
    android:paddingTop="40dp"
    tools:context="com.example.notesapp.MainActivity">

    <TextView
        android:text=" Login Successful, "
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:textSize="20dp"
        android:textColor="#000"
        android:id="@+id/textView1"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="176dp" />

    <Button
        android:text="LOGOUT"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView1" />

```

The screenshot shows the Android Studio interface with the XML code for the main activity layout. The code defines a relative layout containing a text view and an edit text field. The text view has a sign-in message with center gravity and bold text. The edit text field is for email input with a placeholder and a 10-em height.

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="40dp"
    android:paddingLeft="40dp"
    android:paddingRight="40dp"
    android:paddingTop="40dp"
    tools:context="com.example.notesapp.MainActivity">

    <TextView
        android:text="Sign In"
        android:gravity="center"
        android:textSize="20dp"
        android:textColor="#000"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:id="@+id/textView" />

    <EditText
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:inputType="textEmailAddress"
        android:hint="Enter Email"
        android:textColor="#000"
        android:ems="10" />

```

The screenshot shows the Android Studio interface with the XML code for the main activity layout. The code defines a relative layout containing a text view, an edit text field for password, and two buttons for login and register. The text view and edit text field have specific gravity and ems settings. The buttons are aligned below their respective fields.

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="20dp"
    android:id="@+id/editPassword"
    android:gravity="center" />

    <Button
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:id="@+id/buttonLogin"
        android:layout_below="@+id/editEmail"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="20dp"
        android:id="@+id/buttonLogin" />

    <Button
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:id="@+id/buttonRegister"
        android:layout_below="@+id/buttonLogin"
        android:layout_marginTop="20dp"
        android:text="Sign Up! />

```

## OUTPUTS:









