

1. lab1 - display

- activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
```

```
<TextView
android:id="@+id/textView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Happy New Year!"
android:textColor="@color/white"
android:background="@color/black"
android:fontFamily="monospace"
android:textSize="210px"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.5"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.5" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

-colors.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
<color name="black">#C34A4A</color>
<color name="white">#21DAF3</color>
</resources>
```

2. lab2 - add 2 numbers

-activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:id="@+id/main"
android:layout_width="match_parent"
```

```
android:layout_height="match_parent"
tools:context=".MainActivity">
```

```
<EditText
android:id="@+id/etnumb1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:hint="0"
android:textSize="20sp"
android:inputType="number"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.103" />
<EditText
android:id="@+id/etnumb2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:hint="0"
android:textSize="20sp"
android:inputType="number"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/etnumb1"
app:layout_constraintVertical_bias="0.157" />
```

```
<Button
android:id="@+id/calculate"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:text="Calculate"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/etnumb2"
app:layout_constraintVertical_bias="0.24" />
```

```
<TextView
android:id="@+id/etnumb3"
android:layout_width="wrap_content"
```

```

android:layout_height="wrap_content"
android:ems="10"
android:hint="0"
android:textSize="20sp"
android:inputType="number"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.5"
app:layout_constraintTop_toBottomOf="@+id/calculate"
app:layout_constraintVertical_bias="0.5" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

-MainActivity.java

```

package com.example.labex3;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.Button;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    private EditText num1;
    private EditText num2;
    private Button add;
    private TextView result;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        num1=(EditText)findViewById(R.id.etnumb1);
        num2=(EditText)findViewById(R.id.etnumb2);
        add=(Button)findViewById(R.id.calculate);
        result=(TextView)findViewById(R.id.etnumb3);
        add.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View view){
                int number1 = Integer.parseInt(num1.getText().toString());
                int number2 = Integer.parseInt(num2.getText().toString());
                int sum = number1 + number2;
                result.setText("Result: " + String.valueOf(sum));
            }
        });
    }
}

```

```
}
```

3.lab3 - Design a login page with username and password

-activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
```

```
<TextView
android:id="@+id/textView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Log in"
android:textSize="48sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.104" />
```

```
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/textView2"
android:text="Tutorial Point"
android:textColor="#00BCD4"
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.496"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView"
app:layout_constraintVertical_bias="0.104" />
```

```
<EditText
android:layout_width="wrap_content"
android:layout_height="wrap_content"
```

```
android:id="@+id/EditText"
android:ems="10"
android:inputType="text"
android:hint="Username"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView2"
app:layout_constraintVertical_bias="0.182" />
```

```
<EditText
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/EditText2"
android:ems="10"
android:inputType="text"
android:hint="Password"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/EditText"
app:layout_constraintVertical_bias="0.235" />
```

```
<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/button1"
android:text="LogIn"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.168"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.898" />
```

```
<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/button2"
android:text="Cancel"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.865"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
```

```
app:layout_constraintVertical_bias="0.898" />
```

```
<TextView  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:id="@+id/textView3"  
    android:text="Attempts Left: "  
    android:textSize="16sp"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.784"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toTopOf="parent"  
    app:layout_constraintVertical_bias="0.768" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

-MainActivity.java

```
package com.example.labex4;
```

```
import android.os.Bundle;  
import androidx.appcompat.app.AppCompatActivity;  
import android.app.Activity;  
import android.graphics.Color;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;
```

```
public class MainActivity extends AppCompatActivity {  
    Button b1,b2;  
    EditText ed1,ed2;  
    TextView tx1;  
    int counter=3;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        b1=(Button)findViewById(R.id.button1);  
        ed1=(EditText)findViewById(R.id.EditText);  
        ed2=(EditText)findViewById(R.id.EditText2);  
        b2=(Button)findViewById(R.id.button2);  
        tx1=(TextView)findViewById(R.id.textView3);  
        tx1.setVisibility(View.GONE);  
        b1.setOnClickListener(new View.OnClickListener() {
```

```

@Override
public void onClick(View v) {
    if (ed1.getText().toString().equals("admin") && ed2.getText().toString().equals("admin")) {
        Toast.makeText(getApplicationContext(), "wrong credentials",
        Toast.LENGTH_SHORT).show();
        tx1.setVisibility(View.VISIBLE);
        tx1.setBackgroundColor(Color.RED);
        counter--;
        tx1.setText(Integer.toString(counter));
        if (counter == 0) {
            b1.setEnabled(false);
        }
    }
    });
    b2.setOnClickListener(new View.OnClickListener()

{
    @Override
    public void onClick(View v){
        finish();
    }
    })
    });
}
}

```

5. broadcast code

```

import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.widget.Toast;

public class MyBroadcastReceiver extends BroadcastReceiver {
    @Override
    public void onReceive(Context context, Intent intent) {
        // Handle the broadcasted intent here
        if (intent.getAction() != null &&
        intent.getAction().equals("com.example.broadcast.MY_NOTIFICATION")) {
            String message = intent.getStringExtra("message");
            Toast.makeText(context, "Received broadcast: " + message,
            Toast.LENGTH_SHORT).show();
        }
    }
}

```

```
<receiver android:name=".MyBroadcastReceiver">
    <intent-filter>
        <action android:name="com.example.broadcast.MY_NOTIFICATION"/>
    </intent-filter>
</receiver>
```

```
public class MainActivity extends AppCompatActivity {

    private MyBroadcastReceiver receiver;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // Register the BroadcastReceiver
        receiver = new MyBroadcastReceiver();
        IntentFilter filter = new IntentFilter("com.example.broadcast.MY_NOTIFICATION");
        registerReceiver(receiver, filter);
    }

    @Override
    protected void onDestroy() {
        super.onDestroy();
        // Unregister the BroadcastReceiver
        unregisterReceiver(receiver);
    }
}
```

```
Intent intent = new Intent("com.example.broadcast.MY_NOTIFICATION");
intent.putExtra("message", "Hello, this is a broadcast!");
sendBroadcast(intent);
```


6.DATA BASE

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
<!--Edit text to enter course name-->
<!--edit text to enter course duration-->
<!--edit text to display course tracks-->
<EditText
android:id="@+id/idEdtCourseName"
android:layout_width="304dp"
android:layout_height="69dp"
android:layout_margin="10dp"
android:hint="Enter course Name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.34"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.023" />
<!--edit text for course description-->
<EditText
android:id="@+id/idEdtCourseDuration"
android:layout_width="301dp"
android:layout_height="57dp"
android:layout_margin="10dp"
android:layout_marginStart="16dp"
android:hint="Enter Course Duration"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.35"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/idEdtCourseName"
app:layout_constraintVertical_bias="0.012" />

<EditText
android:id="@+id/idEdtCourseTracks"
android:layout_width="303dp"
android:layout_height="64dp"
android:layout_margin="10dp"
android:hint="Enter Course Tracks"
app:layout_constraintBottom_toBottomOf="parent"
```

```

app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/idEdtCourseDuration"
app:layout_constraintVertical_bias="0.038" />
<EditText
android:id="@+id/idEdtCourseDescription"
android:layout_width="307dp"
android:layout_height="63dp"
android:layout_margin="10dp"
android:layout_marginStart="8dp"
android:hint="Enter Course Description"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.354"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/idEdtCourseTracks"
app:layout_constraintVertical_bias="0.071" />
<Button
android:id="@+id/idBtnAddCourse"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_marginStart="16dp"
android:text="Add Course"
android:textAllCaps="false"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/idEdtCourseDescription"
app:layout_constraintVertical_bias="0.242" />
<androidx.constraintlayout.widget.Guideline
android:id="@+id/guideline"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:orientation="horizontal"
app:layout_constraintGuide_begin="555dp" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

```

package com.example.myapplication_db1234;
import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
public class DBHandler extends SQLiteOpenHelper {
// creating a constant variables for our database.

```

```

// below variable is for our database name.
private static final String DB_NAME = "coursedb";
// below int is our database version
private static final int DB_VERSION = 1;
// below variable is for our table name.
private static final String TABLE_NAME = "mycourses";
// below variable is for our id column.
private static final String ID_COL = "id";
// below variable is for our course name column
private static final String NAME_COL = "name";

// below variable id for our course duration column.
private static final String DURATION_COL = "duration";
// below variable for our course description column.
private static final String DESCRIPTION_COL = "description";
// below variable is for our course tracks column.
private static final String TRACKS_COL = "tracks";
// creating a constructor for our database handler.
public DBHandler(Context context) {
    super(context, DB_NAME, null, DB_VERSION);
}
// below method is for creating a database by running a sqlite query
@Override
public void onCreate(SQLiteDatabase db) {
    // on below line we are creating
    // an sqlite query and we are
    // setting our column names
    // along with their data types.
    String query = "CREATE TABLE " + TABLE_NAME + " ("
        + ID_COL + " INTEGER PRIMARY KEY AUTOINCREMENT, "
        + NAME_COL + " TEXT,"
        + DURATION_COL + " TEXT,"
        + DESCRIPTION_COL + " TEXT,"
        + TRACKS_COL + " TEXT)";
    // at last we are calling a exec sql
    // method to execute above sql query
    db.execSQL(query);
}
// this method is use to add new course to our sqlite database.
public void addNewCourse(String courseName, String courseDuration, String
courseDescription, String courseTracks) {
    // on below line we are creating a variable for
    // our sqlite database and calling writable method
    // as we are writing data in our database.
    SQLiteDatabase db = this.getWritableDatabase();
    // on below line we are creating a
    // variable for content values.

```

```

ContentValues values = new ContentValues();
// on below line we are passing all values
// along with its key and value pair.
values.put(NAME_COL, courseName);
values.put(DURATION_COL, courseDuration);
values.put(DESCRIPTION_COL, courseDescription);
values.put(TRACKS_COL, courseTracks); // after adding all values we are passing
// content values to our table.
db.insert(TABLE_NAME, null, values);
// at last we are closing our
// database after adding database.
db.close();
}
@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
// this method is called to check if the table exists already.
db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
onCreate(db);
}
}

```

Step 3: Working with the MainActivity.java file

Go to the MainActivity.java file:

```

package com.example.myapplication_db1234;
import android.os.Bundle;
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 {
// creating variables for our edittext, button and dbhandler
private EditText courseNameEdt, courseTracksEdt, courseDurationEdt,
courseDescriptionEdt;
private Button addCourseBtn;
private DBHandler dbHandler;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
// initializing all our variables.
courseNameEdt = findViewById(R.id.idEdtCourseName);
courseTracksEdt = findViewById(R.id.idEdtCourseTracks);
courseDurationEdt = findViewById(R.id.idEdtCourseDuration);
courseDescriptionEdt = findViewById(R.id.idEdtCourseDescription);
addCourseBtn = findViewById(R.id.idBtnAddCourse); // creating a new dbhandler class
// and passing our context to it.
dbHandler = new DBHandler(MainActivity.this);
}
}

```

```

// below line is to add on click listener for our add course button.
addCourseBtn.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
// below line is to get data from all edit text fields.
String courseName = courseNameEdt.getText().toString();
String courseTracks = courseTracksEdt.getText().toString();
String courseDuration = courseDurationEdt.getText().toString();
String courseDescription = courseDescriptionEdt.getText().toString();
// validating if the text fields are empty or not.
if (courseName.isEmpty() && courseTracks.isEmpty() &&
courseDuration.isEmpty() && courseDescription.isEmpty()) {
Toast.makeText(MainActivity.this, "Please enter all the data..",
Toast.LENGTH_SHORT).show();
return;
}
// on below line we are calling a method to add new
// course to sqlite data and pass all our values to it.
dbHandler.addNewCourse(courseName, courseDuration, courseDescription,
courseTracks);
// after adding the data we are displaying a toast message.
Toast.makeText(MainActivity.this, "Course has been added.",
Toast.LENGTH_SHORT).show();
courseNameEdt.setText("");
courseDurationEdt.setText("");
courseTracksEdt.setText("");
courseDescriptionEdt.setText("");
}
});
}
}

```

Step 4: AndroidManifest.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity"><!--Edit text to enter course name-->
<!--edit text to enter course duration-->
<!--edit text to display course tracks-->
<EditText
android:id="@+id/idEdtCourseName"
android:layout_width="304dp"
android:layout_height="69dp"
android:layout_margin="10dp"

```

```

android:hint="Enter course Name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.34"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.023" />
<!--edit text for course description-->
<EditText
android:id="@+id/idEdtCourseDuration"
android:layout_width="301dp"
android:layout_height="57dp"
android:layout_margin="10dp"
android:layout_marginStart="16dp"
android:hint="Enter Course Duration"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.35"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/idEdtCourseName"
app:layout_constraintVertical_bias="0.012" />
<!--button for adding new course-->
<EditText
android:id="@+id/idEdtCourseTracks"
android:layout_width="303dp"
android:layout_height="64dp"
android:layout_margin="10dp"
android:hint="Enter Course Tracks"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/idEdtCourseDuration"
app:layout_constraintVertical_bias="0.038" />
<EditText
android:id="@+id/idEdtCourseDescription"android:layout_width="307dp"
android:layout_height="63dp"
android:layout_margin="10dp"
android:layout_marginStart="8dp"
android:hint="Enter Course Description"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.354"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/idEdtCourseTracks"
app:layout_constraintVertical_bias="0.071" />
<Button

```

```
android:id="@+id/idBtnAddCourse"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_marginStart="16dp"
android:text="Add Course"
android:textAllCaps="false"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/idEdtCourseDescription"
app:layout_constraintVertical_bias="0.242" />
<androidx.constraintlayout.widget.Guideline
android:id="@+id/guideline"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:orientation="horizontal"
app:layout_constraintGuide_begin="555dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```