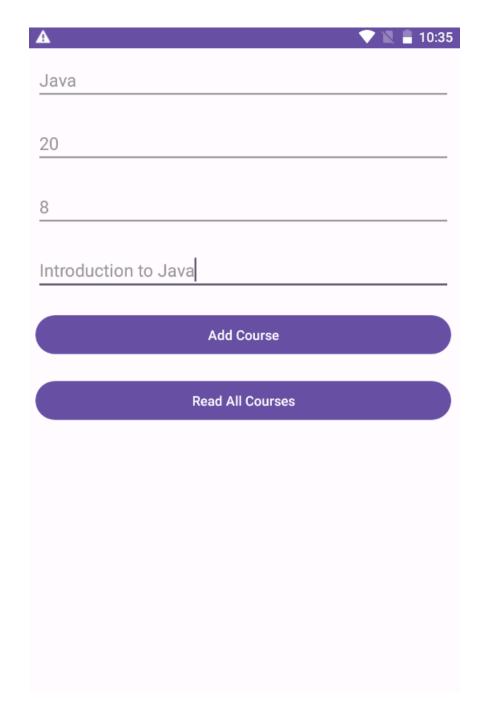
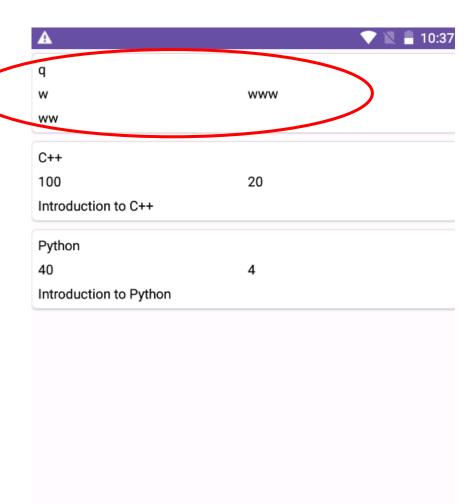
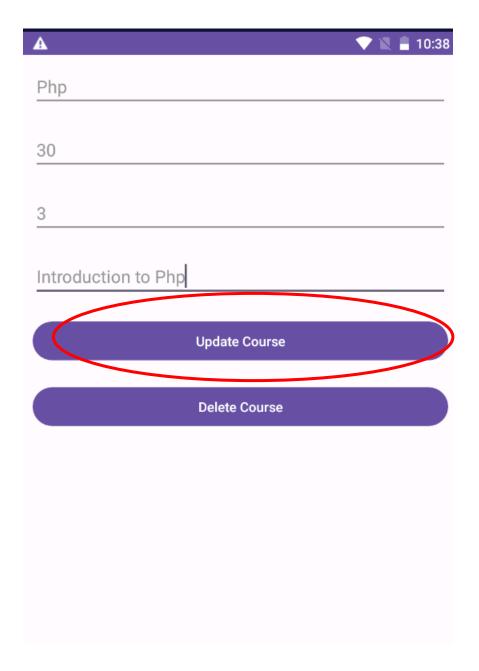
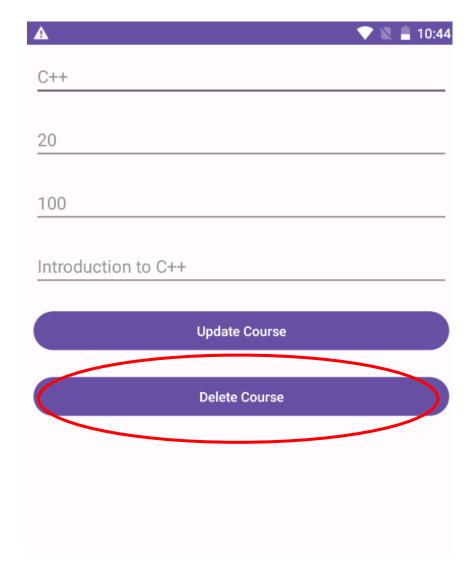
## SQLite Database in Android

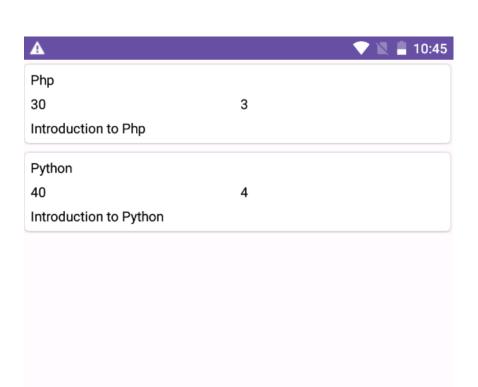






A		💎 🔌 🗂 10:39
Php		
30	3	
Introduction to Php		
C++		
100	20	
Introduction to C++		
Python		
40	4	
Introduction to Python		





```
activity_main.xml ×
```

71

```
<?xml version="1.0" encoding="utf-8"?>
 2 ©
       <LinearLayout
       xmlns:android="http://schemas.android.com/apk/res/android"
       xmlns:tools="http://schemas.android.com/tools"
 5
       android:id="@+id/main"
 6
       android:layout_width="match_parent"
 7
       android:layout_height="match_parent"
       android:orientation="vertical"
 8
 9
       tools:context=".MainActivity">
10
11
       <EditText
12
           android:id="@+id/idEdtCourseName"
13
           android:layout_width="match_parent"
14
           android:layout_height="wrap_content"
15
           android:layout_margin="10dp"
16
           android:hint="Enter course Name" />
17
18
       <EditText
19
           android:id="0+id/idEdtCourseDuration"
20
           android:layout_width="match_parent"
21
           android:layout_height="wrap_content"
22
           android:layout_margin="10dp"
23
           android:hint="Enter Course Duration" />
24
25
       <EditText
           android:id="@+id/idEdtCourseTracks"
26
27
           android:layout_width="match_parent"
           android:layout_height="wrap_content"
28
29
           android:layout_margin="10dp"
30
           android:hint="Enter Course Tracks" />
```

```
</> activity_main.xml ×
32
        <EditText
            android:id="@+id/idEdtCourseDescription"
33
34
            android:layout_width="match_parent"
35
            android:layout_height="wrap_content"
36
            android:layout_margin="10dp"
37
            android:hint="Enter Course Description" />
38
39
        <Button
40
            android:id="@+id/idBtnAddCourse"
41
            android:layout_width="match_parent"
42
            android:layout_height="wrap_content"
43
            android:layout_margin="10dp"
44
            android:text="Add Course"
            android:textAllCaps="false" />
45
46
47
        <Button
48
            android:id="@+id/idBtnReadCourse"
49
            android:layout_width="match_parent"
50
            android:layout_height="wrap_content"
51
            android:layout_margin="10dp"
52
            android:text="Read All Courses"
53
            android:textAllCaps="false" />
54
55
```

56

57

</LinearLayout>

```
© CourseModal.java ×
```

```
package com.example.sqlite2;
     //Creating a modal class for storing the data
     7 usages
     public class CourseModal {
 3
 4
         3 usages
 5
         private String courseName;
         3 usages
 6
         private String courseDuration;
         3 usages
 7
         private String courseTracks;
         3 usages
 8
         private String courseDescription;
         2 usages
 9
         private int id;
10
11
         //Getter: To retrieve the value of an object's attribute
         2 usages
         public String getCourseName() { return courseName; }
12 >
15
         2 usages
16 >
         public String getCourseDuration() { return courseDuration; }
19
         2 usages
         public String getCourseTracks() { return courseTracks; }
20 >
23
         2 usages
         public String getCourseDescription() { return courseDescription; }
24 >
27
         public int getId() { return id; }
28 >
```

```
© CourseModal.java ×
```

```
//Setter: To set the value of an object's attribute
32
       no usages
          public void setCourseName(String courseName) { this.courseName = courseName; }
33 >
36
          no usages
          public void setCourseDuration(String courseDuration) { this.courseDuration = courseDuration; }
37 >
40
          no usages
41 >
          public void setCourseTracks(String courseTracks) { this.courseTracks = courseTracks; }
44
          no usages
45
          public void setCourseDescription(String courseDescription) {
              this.courseDescription = courseDescription;
46
47
          }
48
          public void setId(int id) { this.id = id; }
49 >
52
53
          //Constructor: To initialize the values at the time of object creation
          1 usage
          public CourseModal(String courseName, String courseDuration, String courseTracks, String courseDescription) {
54
55
              this.courseName = courseName;
56
              this.courseDuration = courseDuration;
57
              this.courseTracks = courseTracks;
58
              this.courseDescription = courseDescription;
59
60
61
      }//CourseModal
```

```
package com.example.sqlite2;
 2
          import android.content.ContentValues;
 3
 4
          import android.content.Context;
          import android.database.Cursor;
 5
          import android.database.sqlite.SQLiteDatabase;
          import android.database.sqlite.SQLiteOpenHelper;
 8
          import java.util.ArrayList;
 9
          6 usages
10
          public class DBHandler extends SQLiteOpenHelper {
11
12
              // creating a constant variables for our database.
              1 usage
13
              private static final String DB_NAME = "coursedb";
              1 usage
14
              private static final int DB_VERSION = 1;
              6 usages
15
              private static final String TABLE_NAME = "mycourses";
              1 usage
16
              private static final String ID_COL = "id";
              3 usages
              private static final String NAME_COL = "name";
17
              3 usages
18
              private static final String DURATION_COL = "duration";
              3 usages
19
              private static final String DESCRIPTION_COL = "description";
              3 usages
20
              private static final String TRACKS_COL = "tracks";
```

```
O DBHandler.java ×
```

```
22
            // Constructor for the database handler.
            3 usages
23
            public DBHandler(Context context) {
24
25
                super(context, DB_NAME, factory: null, DB_VERSION);
            }//DBHandler
26
27
            // .....Creating a database.....
28
29
            @Override
30 (I) (Q)
            public void onCreate(SQLiteDatabase db) {
                String query = "CREATE TABLE " + TABLE_NAME + " ("
31
32
                        + ID_COL + " INTEGER PRIMARY KEY AUTOINCREMENT, "
                        + NAME_COL + " TEXT,"
33
                        + DURATION_COL + " TEXT,"
34
                        + DESCRIPTION_COL + " TEXT,"
35
36
                        + TRACKS_COL + " TEXT)";
37
                db.execSQL(query);
38
39
            }//onCreate
```

```
O DBHandler.java ×
```

```
41
            // ..... Adding a new course......
            1 usage
42
            public void addNewCourse(String courseName, String courseDuration, String courseDescription, String courseTracks) {
43
                SQLiteDatabase db = this.getWritableDatabase();
44
45
46
                // creating a variable for content values.
                ContentValues values = new ContentValues();
47
48
                // passing all values along with its key and value pair.
49
                values.put(NAME_COL, courseName);
50
51
                values.put(DURATION_COL, courseDuration);
52
                values.put(DESCRIPTION_COL, courseDescription);
53
                values.put(TRACKS_COL, courseTracks);
54
55
                // passing content values to the table.
                db.insert(TABLE_NAME, nullColumnHack: null, values);
56
57
58
                // at last we are closing our database after adding database.
                db.close();
59
            }//addNewCourse
60
```

```
O DBHandler.java ×
```

```
62
             1 usage
63
             public ArrayList<CourseModal> readCourses() {
                // creating a database for reading the database.
64
                SQLiteDatabase db = this.getReadableDatabase();
65
66
                // creating a cursor with query to read data from database.
67
                Cursor cursorCourses = db.rawQuery( sql: "SELECT * FROM " + TABLE_NAME, selectionArgs: null);
68
69
                // creating a new array list.
70
                ArrayList<CourseModal> courseModalArrayList = new ArrayList<>();
71
72
73
                // moving the cursor to first position.
                if (cursorCourses.moveToFirst()) {
74
75
                    do {
                        // adding the data from cursor to the array list.
76
                        courseModalArrayList.add(new CourseModal(cursorCourses.getString(columnIndex: 1),
77
78
                                cursorCourses.getString( columnIndex: 4),
                                cursorCourses.getString( columnlndex: 2),
79
                                cursorCourses.getString( columnIndex: 3)));
80
                    } while (cursorCourses.moveToNext());
81
                    // moving our cursor to next.
82
                }//if
83
84
                // at last closing our cursor and returning our array list.
                cursorCourses.close();
85
                return courseModalArrayList;
86
             }//ArrayList
87
```

```
O DBHandler.java ×
```

```
89
90
             1 usage
             public void updateCourse(String originalCourseName, String courseName, String courseDescription,
91
92
                                    String courseTracks, String courseDuration) {
93
94
                 // calling a method to get writable database.
95
                 SQLiteDatabase db = this.getWritableDatabase();
 96
                 ContentValues values = new ContentValues();
97
                // passing all values along with its key and value pair.
 98
                 values.put(NAME_COL, courseName);
99
100
                 values.put(DURATION_COL, courseDuration);
101
                 values.put(DESCRIPTION_COL, courseDescription);
                 values.put(TRACKS_COL, courseTracks);
102
103
                // calling a update method to update our database and passing our values.
104
                // and we are comparing it with name of our course which is stored in original name variable.
105
106
                 db.update(TABLE_NAME, values, whereClause: "name=?", new String[]{originalCourseName});
                 db.close();
107
108
```

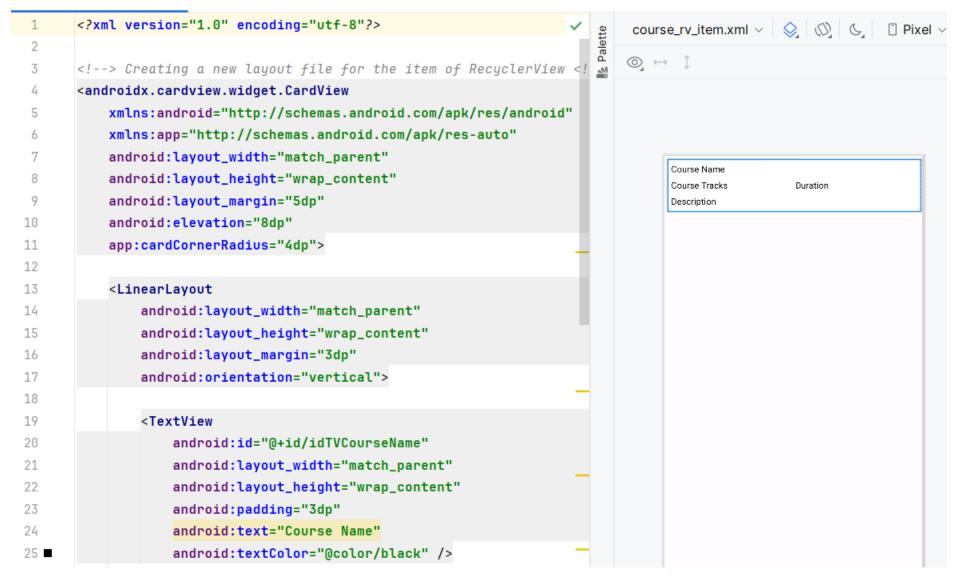
```
110
             // ..... Deleting the course.....
             1 usage
111
              public void deleteCourse(String courseName) {
112
                 // Creating a variable to write our database.
113
114
                 SQLiteDatabase db = this.getWritableDatabase();
115
116
                 // Calling a method to delete our course and we are comparing it with our course name.
117
                 db.delete(TABLE_NAME, whereClause: "name=?", new String[]{courseName});
118
                 db.close();
119
120
             10 usages
121
             @Override
122 (I) (Q)
             public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
123
                 // this method is called to check if the table exists already.
                 db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
124
                 onCreate(db);
125
             }//onUpgrade
126
127
          }//DBHandler
128
```

## MainActivity.java ×

```
3
          import android.os.Bundle;
          import android.content.Intent;
          import android.view.View;
 5
          import android.widget.Button;
 6
          import android.widget.EditText;
 7
 8
          import android.widget.Toast;
 9
          import androidx.appcompat.app.AppCompatActivity;
10
11
         //Creating an Activity for displaying the list of courses
12 > </>
          public class MainActivity extends AppCompatActivity {
13
             3 usages
14
              private EditText courseNameEdt, courseTracksEdt, courseDurationEdt, courseDescriptionEdt;
             2 usages
              private Button addCourseBtn, readCourseBtn, updateCourseBtn, deleteCourseBtn;
15
             2 usages
              private DBHandler dbHandler;
16
             no usages
17
              String courseName, courseDesc, courseDuration, courseTracks;
```

```
20
              @Override
21 ©Î
              protected void onCreate(Bundle savedInstanceState) {
22
                  super.onCreate(savedInstanceState);
23
                  setContentView(R.layout.activity_main);
24
25
                  courseNameEdt = findViewById(R.id.idEdtCourseName);
26
                  courseTracksEdt = findViewById(R.id.idEdtCourseTracks);
                  courseDurationEdt = findViewById(R.id.idEdtCourseDuration);
27
                  courseDescriptionEdt = findViewById(R.id.idEdtCourseDescription);
28
29
                  addCourseBtn = findViewById(R.id.idBtnAddCourse);
30
                  readCourseBtn = findViewById(R.id.idBtnReadCourse);
31
                  // creating a new dbhandler class and passing the context to it.
32
                  dbHandler = new DBHandler( context: MainActivity.this);
33
34
                  addCourseBtn.setOnClickListener(new View.OnClickListener() {
35
36
                      @Override
37 🛈
                      public void onClick(View v) {
38
39
                          String courseName = courseNameEdt.getText().toString();
                          String courseTracks = courseTracksEdt.getText().toString();
40
41
                          String courseDuration = courseDurationEdt.getText().toString();
42
                          String courseDescription = courseDescriptionEdt.getText().toString();
43
                          // validating if the text fields are empty or not.
44
                          if (courseName.isEmpty() || courseTracks.isEmpty() || courseDuration.isEmpty() || courseDescription.isEmpty()) {
45
46
                              Toast.makeText( context: MainActivity.this, text: "Please enter all the data...", Toast.LENGTH_SHORT).show();
47
                              return;
                          }//if
48
```

```
// 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, a toast message is displayed.
                Toast.makeText( context: MainActivity.this, text: "Course has been added.", Toast.LENGTH_SHORT).show();
                courseNameEdt.setText("");
                courseDurationEdt.setText("");
                courseTracksEdt.setText("");
                courseDescriptionEdt.setText("");
            }////onClick
        });//setOnClickListener
        readCourseBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // opening a new activity via a intent.
                Intent i = new Intent( packageContext: MainActivity.this, ViewCourses.class);
                startActivity(i);
           }//onClick
       });//setOnClickListener
   }//onCreate
}//MainActivity
```



## </> course\_rv\_item.xml ×

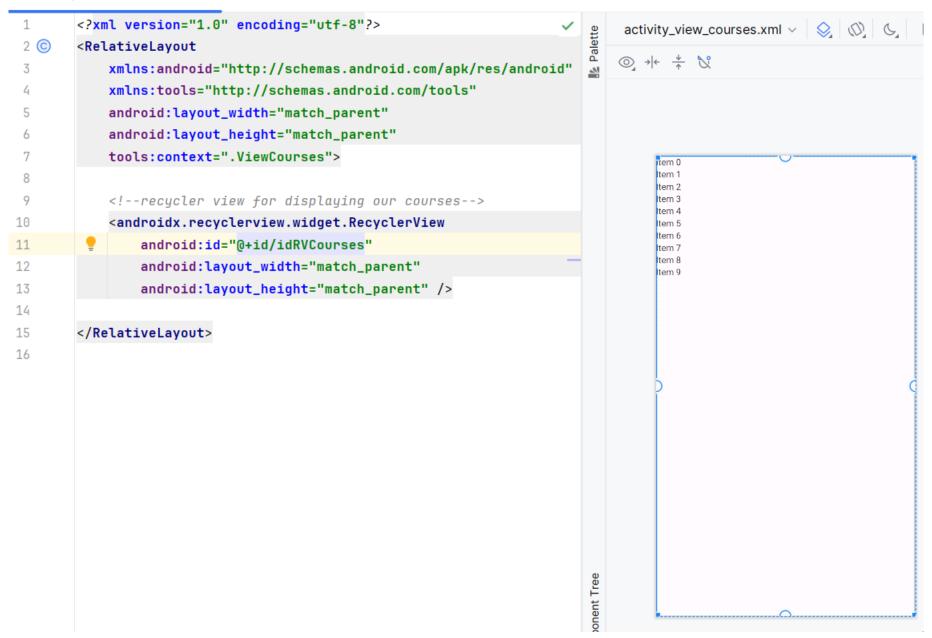
27	<linearlayout< th=""></linearlayout<>
28	android:layout_width="match_parent"
29	android:layout_height="wrap_content"
30	android:orientation="horizontal"
31	android:weightSum="2">
32	
33	<textview< th=""></textview<>
34	android:id="@+id/idTVCourseTracks"
35	android:layout_width="0dp"
36	android:layout_height="wrap_content"
37	android:layout_weight="1"
38	android:padding="3dp"
39	android:text="Course Tracks"
40 ■	android:textColor="@color/black" />
41	
42	<textview< th=""></textview<>
43	android:id="@+id/idTVCourseDuration"
44	android:layout_width="0dp"
45	android:layout_height="wrap_content"
46	android:layout_weight="1"
47	android:padding="3dp"
48	android:text="Duration"
49 ■	android:textColor="@color/black" />
50	
51	

```
<TextView
53
                  android:id="@+id/idTVCourseDescription"
54
55
                  android:layout_width="match_parent"
56
                  android:layout_height="wrap_content"
                   android:layout_weight="1"
57
                  android:padding="3dp"
58
59
                  android:text="Description"
                  android:textColor="@color/black" />
60 ■
61
          </LinearLayout>
62
63
      </androidx.cardview.widget.CardView>
64
```

```
© CourseRVAdapter.java ×
        import android.content.Context;
 4
        import android.content.Intent;
        import android.view.LayoutInflater;
        import android.view.View;
        import android.view.ViewGroup;
 8
        import android.widget.TextView;
 9
       import androidx.annotation.NonNull;
10
        import androidx.recyclerview.widget.RecyclerView;
       import java.util.ArrayList;
11
12
       3 usages
13
        public class CourseRVAdapter extends RecyclerView.Adapter<CourseRVAdapter.ViewHolder> {
14
            3 usages
            private ArrayList<CourseModal> courseModalArrayList;
15
            3 usages
            private Context;
16
17
18
            // constructor
            1 usage
            public CourseRVAdapter(ArrayList<CourseModal> courseModalArrayList, Context context) {
19
20
                this.courseModalArrayList = courseModalArrayList;
21
                this.context = context;
22
23
            @NonNull
24
25
            @Override
26 CT
            public ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
27
                // Inflating the layout file for the recycler view items.
                View view = LayoutInflater.from(parent.getContext()).inflate(R.layout.course_rv_item, parent, attachToRoot: false);
28
29
                return new ViewHolder(view);
30
```

```
@Override
32
33 C
           public void onBindViewHolder(@NonNull ViewHolder holder, int position) {
               // Setting data to the views of recycler view item.
34
35
               CourseModal modal = courseModalArrayList.get(position);
36
               holder.courseNameTV.setText(modal.getCourseName());
37
               holder.courseDescTV.setText(modal.getCourseDescription());
38
               holder.courseDurationTV.setText(modal.getCourseDuration());
               holder.courseTracksTV.setText(modal.getCourseTracks());
39
40
41
               // to add on click listener for the recycler view item.
42
               holder.itemView.setOnClickListener(new View.OnClickListener() {
43
                   @Override
44 🛈
                   public void onClick(View v) {
45
                       // Calling an intent.
46
47
                       Intent i = new Intent(context, UpdateCourseActivity.class);
48
                       // Passing all our values.
49
                       i.putExtra( name: "name", modal.getCourseName());
50
51
                       i.putExtra( name: "description", modal.getCourseDescription());
                       i.putExtra( name: "duration", modal.getCourseDuration());
52
53
                       i.putExtra( name: "tracks", modal.getCourseTracks());
54
55
                       context.startActivity(i);
56
57
               });
58
```

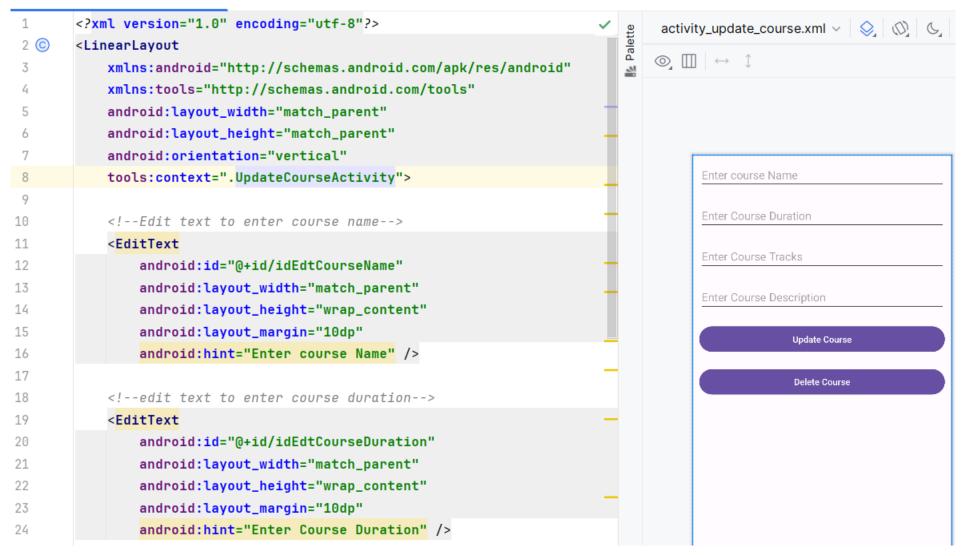
```
@Override
60
61 C
           public int getItemCount() {
62
               // returning the size of our array list
63
               return courseModalArrayList.size();
64
65
           4 usages
           public class ViewHolder extends RecyclerView.ViewHolder {
66
67
68
               // creating variables for our text views.
               2 usages
               private TextView courseNameTV, courseDescTV, courseDurationTV, courseTracksTV;
69
70
               1 usage
71
               public ViewHolder(@NonNull View itemView) {
                   super(itemView);
72
73
                   // initializing our text views
74
                   courseNameTV = itemView.findViewById(R.id.idTVCourseName);
75
                   courseDescTV = itemView.findViewById(R.id.idTVCourseDescription);
                   courseDurationTV = itemView.findViewById(R.id.idTVCourseDuration);
76
77
                   courseTracksTV = itemView.findViewById(R.id.idTVCourseTracks);
78
        }//ViewHolder
79
80
       }//CourseRVAdapter
```



```
O ViewCourses.java ×
          import android.os.Bundle;
          import androidx.appcompat.app.AppCompatActivity;
          import androidx.recyclerview.widget.LinearLayoutManager;
          import androidx.recyclerview.widget.RecyclerView;
6
 7
          import java.util.ArrayList;
 8
9 > </>
          public class ViewCourses extends AppCompatActivity {
10
11
              // creating variables for the array list, dbhandler, adapter and recycler view.
              3 usages
              private ArrayList<CourseModal> courseModalArrayList;
12
              2 usages
13
              private DBHandler dbHandler;
              2 usages
14
              private CourseRVAdapter courseRVAdapter;
              3 usages
              private RecyclerView coursesRV;
15
16
17
              @Override
18 ©1
              protected void onCreate(Bundle savedInstanceState) {
19
                  super.onCreate(savedInstanceState);
                  setContentView(R.layout.activity_view_courses);
20
21
22
                  // initializing all variables.
                  courseModalArrayList = new ArrayList<>();
23
24
                  dbHandler = new DBHandler( context: ViewCourses.this);
25
                  // getting our course array list from dbhandler class.
26
27
                  courseModalArrayList = dbHandler.readCourses();
```

```
28
                 // passing the array list to the adapter class.
29
30
                  courseRVAdapter = new CourseRVAdapter(courseModalArrayList, context: ViewCourses.this);
                  coursesRV = findViewById(R.id.idRVCourses);
31
32
                 // setting layout manager for the recycler view.
33
                  LinearLayoutManager linearLayoutManager = new LinearLayoutManager( context: ViewCourses.this, RecyclerView.VERTICAL, reverseLayout: false);
34
35
                  coursesRV.setLayoutManager(linearLayoutManager);
36
                 // setting the adapter to recycler view.
37
                  coursesRV.setAdapter(courseRVAdapter);
38
             }//onCreate
39
40
         }//ViewCourses
```

activity\_update\_course.xml ×



```
activity_update_course.xml ×
```

```
26
           <!--edit text to display course tracks-->
           <EditText
27
28
                android:id="@+id/idEdtCourseTracks"
29
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
30
31
                android:layout_margin="10dp"
32
                android:hint="Enter Course Tracks" />
33
           <!--edit text for course description-->
34
35
           <EditText
36
                android:id="@+id/idEdtCourseDescription"
                android:layout_width="match_parent"
37
38
                android:layout_height="wrap_content"
                android:layout_margin="10dp"
39
40
                android:hint="Enter Course Description" />
41
42
           <!--button for updating our course-->
43
           <Button
44
                android:id="@+id/idBtnUpdateCourse"
                android:layout_width="match_parent"
45
                android:layout_height="wrap_content"
46
47
                android:layout_margin="10dp"
                android:text="Update Course"
48
49
                android:textAllCaps="false" />
```

```
51
           <!--button for deleting our course-->
           <Button
52
53
               android:id="@+id/idBtnDelete"
               android:layout_width="match_parent"
54
               android:layout_height="wrap_content"
55
               android:layout_margin="10dp"
56
57
               android:text="Delete Course"
58
               android:textAllCaps="false" />
59
       </LinearLayout>
60
```

```
O UpdateCourseActivity.java ×
 3
          import android.content.Intent;
 4
          import android.os.Bundle;
 5
          import android.view.View;
          import android.widget.Button;
 6
 7
          import android.widget.EditText;
 8
          import android.widget.Toast;
9
          import androidx.appcompat.app.AppCompatActivity;
10
11 > </>>
          public class UpdateCourseActivity extends AppCompatActivity {
12
              3 usages
13
              private EditText courseNameEdt, courseTracksEdt, courseDurationEdt, courseDescriptionEdt;
              2 usages
              private Button updateCourseBtn, deleteCourseBtn;
14
              3 usages
15
              private DBHandler dbHandler;
              4 usages
              String courseName, courseDesc, courseDuration, courseTracks;
16
17
18
              @Override
19 ©1
              protected void onCreate(Bundle savedInstanceState) {
20
                  super.onCreate(savedInstanceState);
21
                  setContentView(R.layout.activity_update_course);
22
23
                  courseNameEdt = findViewById(R.id.idEdtCourseName);
                  courseTracksEdt = findViewById(R.id.idEdtCourseTracks);
24
25
                  courseDurationEdt = findViewById(R.id.idEdtCourseDuration);
                  courseDescriptionEdt = findViewById(R.id.idEdtCourseDescription);
26
27
                  updateCourseBtn = findViewById(R.id.idBtnUpdateCourse);
28
                  deleteCourseBtn = findViewById(R.id.idBtnDelete);
```

```
O UpdateCourseActivity.java ×
                                                                                                                                            A 4
30
                  // Initializing our dbhandler class.
                  dbHandler = new DBHandler( context: UpdateCourseActivity.this);
31
32
33
                  // Getting data
                  courseName = getIntent().getStringExtra( name: "name");
34
                  courseDesc = getIntent().getStringExtra( name: "description");
35
                  courseDuration = getIntent().getStringExtra( name: "duration");
36
                  courseTracks = getIntent().getStringExtra( name: "tracks");
37
38
                  // setting data
39
                  courseNameEdt.setText(courseName);
40
                  courseDescriptionEdt.setText(courseDesc);
41
42
                  courseTracksEdt.setText(courseTracks);
                  courseDurationEdt.setText(courseDuration);
43
44
                  // adding on click listener to our update course button.
45
46
                  updateCourseBtn.setOnClickListener(new View.OnClickListener() {
47
                      @Override
48 🛈
                      public void onClick(View v) {
49
                          // Calling an update course method and passing all the edit text values.
50
                          dbHandler.updateCourse(courseName, courseNameEdt.getText().toString(), courseDescriptionEdt.getText().toString(),
51
                                   courseTracksEdt.getText().toString(), courseDurationEdt.getText().toString());
52
53
54
                          Toast.makeText( context: UpdateCourseActivity.this, text: "Course Updated..", Toast.LENGTH_SHORT).show();
55
                          // launching our main activity.
56
                          Intent i = new Intent( packageContext: UpdateCourseActivity.this, MainActivity.class);
57
                          startActivity(i);
58
                      }//onClick
59
                  })://setOnClickListener
60
```

```
62
                 // adding on click listener for delete button to delete our course.
                  deleteCourseBtn.setOnClickListener(new View.OnClickListener() {
63
64
                      @Override
65 🛈
                      public void onClick(View v) {
66
                         // calling a method to delete the course.
67
                          dbHandler.deleteCourse(courseName);
68
                         Toast.makeText( context: UpdateCourseActivity.this, text: "Deleted the course", Toast.LENGTH_SHORT).show();
                          Intent i = new Intent( packageContext: UpdateCourseActivity.this, MainActivity.class);
69
70
                          startActivity(i);
                     }//onClick
71
                 });//setOnClickListener
72
73
             }//onCreate
74
         }//UpdateCourseActivity
```