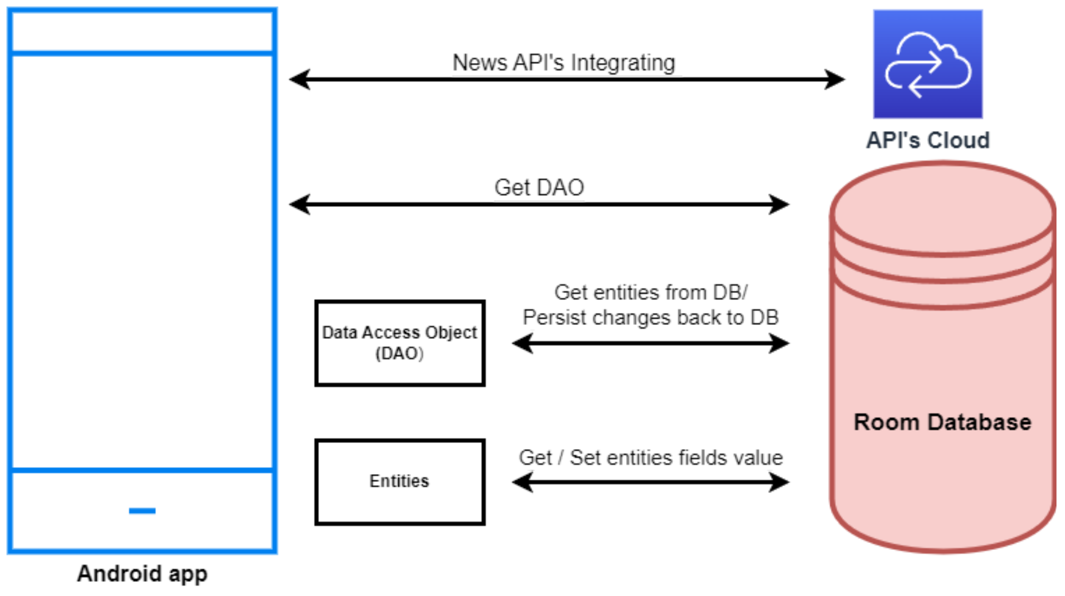
An Android Application for Keeping Up with the Latest Headlines

Project Based Experiential Learning Program

An Android Application for Keeping Up with the Latest Headlines :

The app's main feature is displaying a list of news articles, each with a title, image, and brief description. Users can scroll through the list of articles and tap on an article to view more details. The app uses the Jetpack Compose UI toolkit to build the UI and it uses the coil library to load images. The app fetches data from a remote server using Retrofit library and demonstrates how to use the Jetpack Compose UI toolkit for Android development.

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.
- You'll be able to integrate the API's 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.Adding permissions
5.Creating the database classes.
6.Creating API Service and required classes for integrating API
7.Building application UI and connecting to database.
8.Modifying AndroidManifest.xml
9.Running the application.

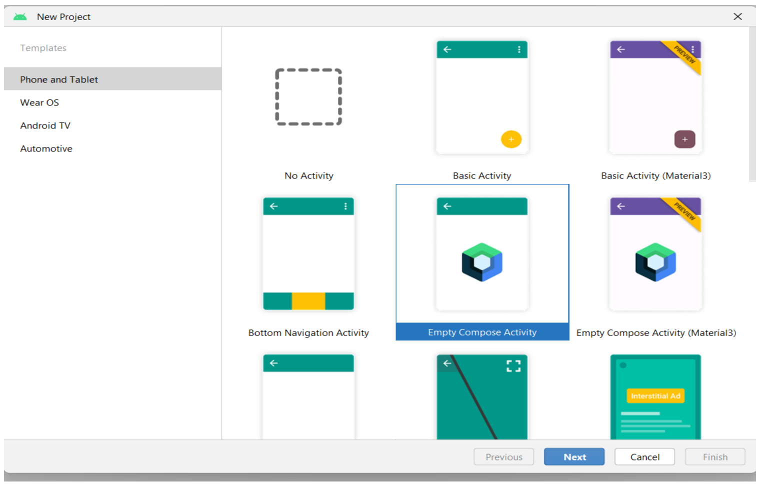
Task 1:

Required initial steps :

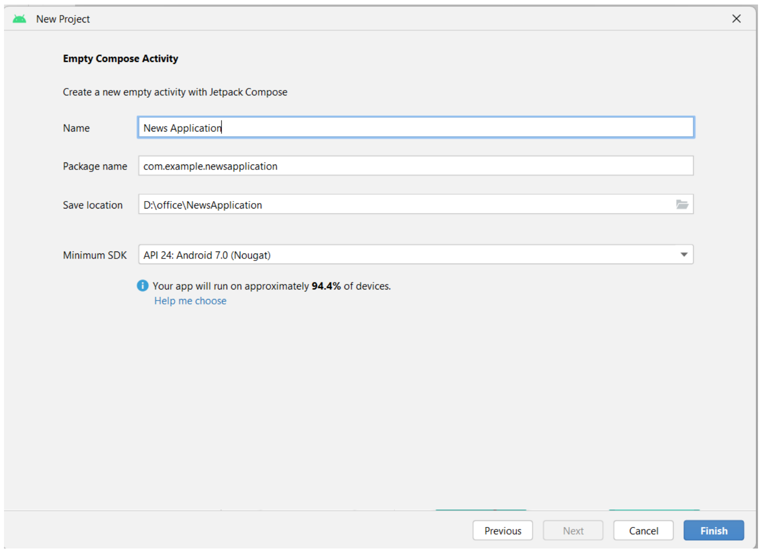
https://developer.android.com/studio/install

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


New Project

Empty Compose Activity

Create a new empty activity with Jetpack Compose

Name: News Application

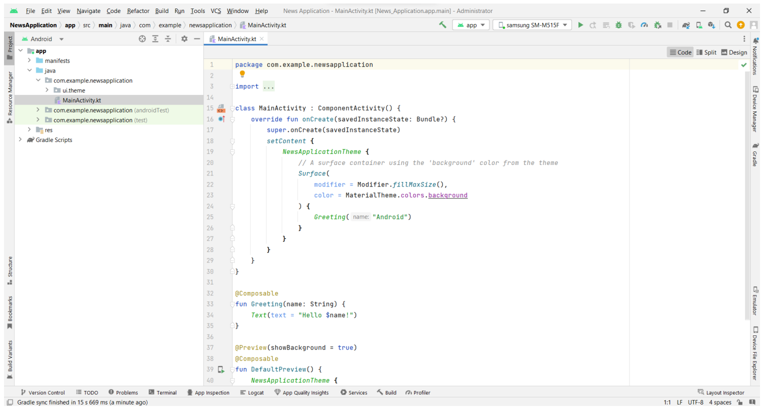
Package name: com.example.newsapplication

Save location: D:\office\NewsApplication

Minimum SDK: API 24: Android 7.0 (Nougat)

Your app will run on approximately **94.4%** of devices.
Help me choose

Main activity file


News Application - MainActivity.kt [News_Application.app.main] - Administrator

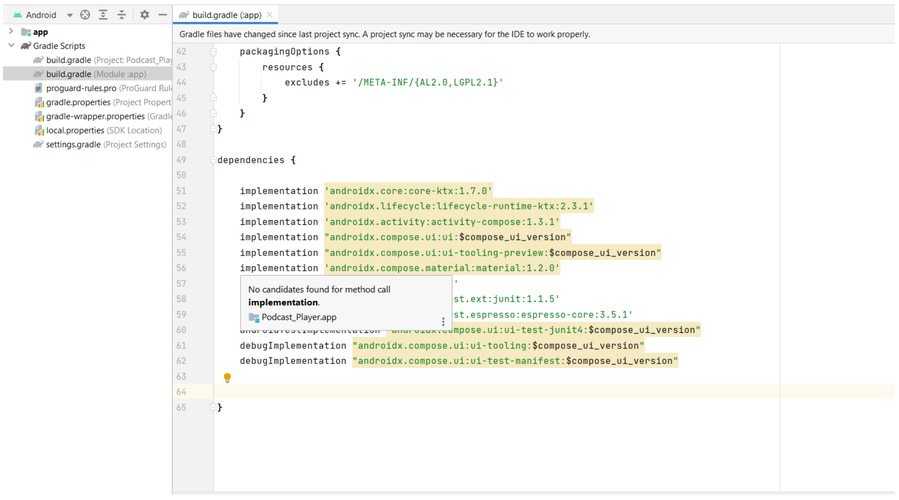
```
package com.example.newsapplication

import ...

class MainActivity : ComponentActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContent {
            NewsApplicationTheme {
                // A surface container using the 'background' color from the theme
                Surface(
                    modifier = Modifier.fillMaxSize(),
                    color = MaterialTheme.colors.background
                ) {
                    Greeting( name: "Android")
                }
            }
        }
    }
}

@Composable
fun Greeting(name: String) {
    Text(text = "Hello $name!")
}

@Preview(showBackground = true)
@Composable
fun DefaultPreview() {
    NewsApplicationTheme {
```

Gradle sync finished in 15 s 669 ms (a minute ago)

Task 3 :

Adding required dependencies.

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


Android
app
Gradle Scripts
build.gradle (Project: Podcast_Play
build.gradle (Module :app)
proguard-rules.pro (ProGuard Rul
gradle.properties (Project Propert
gradle-wrapper.properties (Gradle
local.properties (SDK Location)
settings.gradle (Project Settings)
build.gradle (:app)

Gradle files have changed since last project sync. A project sync may be necessary for the IDE to work properly.

```
    packagingOptions {
        resources {
            excludes += '/META-INF/{AL2.0,LGPL2.1}'
        }
    }
}

dependencies {

    implementation 'androidx.core:core-ktx:1.7.0'
    implementation 'androidx.lifecycle:lifecycle-runtime-ktx:2.3.1'
    implementation 'androidx.activity:activity-compose:1.3.1'
    implementation "androidx.compose.ui:ui:$compose_ui_version"
    implementation "androidx.compose.ui:ui-tooling-preview:$compose_ui_version"
    implementation 'androidx.compose.material:material:1.2.0'
                                           '
                                           st.ext:junit:1.1.5'
                                           st.espresso:espresso-core:3.5.1'
                                  ompose.ui:ui-test-junit4:$compose_ui_version"
    debugImplementation "androidx.compose.ui:ui-tooling:$compose_ui_version"
    debugImplementation "androidx.compose.ui:ui-test-manifest:$compose_ui_version"


}
```

No candidates found for method call **implementation**.
Podcast_Player.app

Step 2 : Adding room dependencies.
Add the below code in dependencies

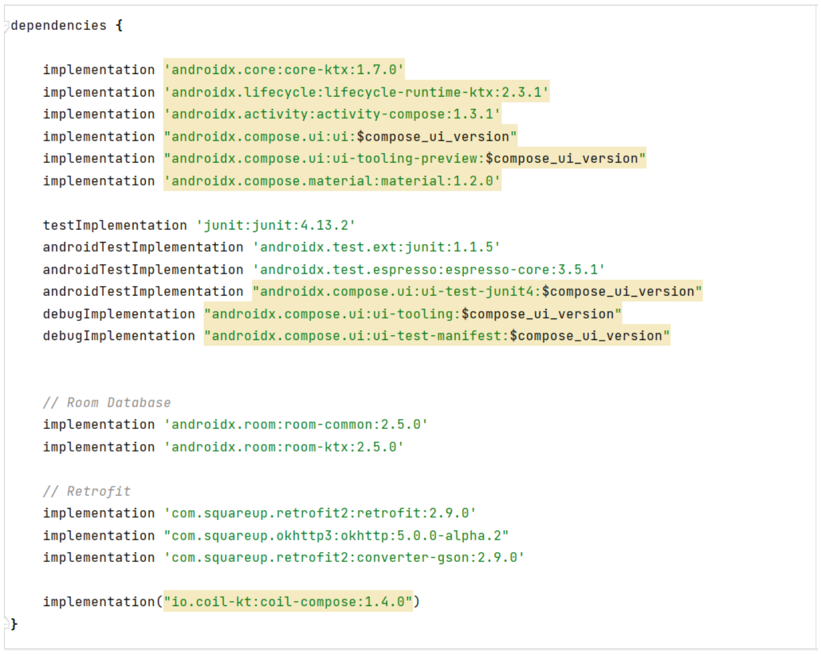
```
// Room Database
implementation 'androidx.room:room-common:2.5.0'
implementation 'androidx.room:room-ktx:2.5.0'
```

Step 3 : Adding Retrofit dependencies

```
// Retrofit
implementation 'com.squareup.retrofit2:retrofit:2.9.0'
implementation "com.squareup.okhttp3:okhttp:5.0.0-alpha.2"
implementation 'com.squareup.retrofit2:converter-gson:2.9.0'
```

Step 4 : Adding Coil dependencies

```
implementation("io.coil-kt:coil-compose:1.4.0")
```



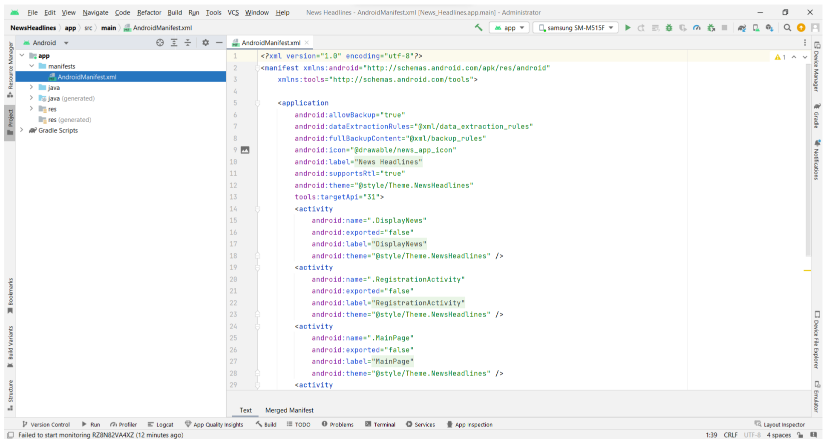
```
dependencies {

    implementation 'androidx.core:core-ktx:1.7.0'
    implementation 'androidx.lifecycle:lifecycle-runtime-ktx:2.3.1'
    implementation 'androidx.activity:activity-compose:1.3.1'
    implementation "androidx.compose.ui:ui:$compose_ui_version"
    implementation "androidx.compose.ui:ui-tooling-preview:$compose_ui_version"
    implementation 'androidx.compose.material:material:1.2.0'

    testImplementation 'junit:junit:4.13.2'
    androidTestImplementation 'androidx.test.ext:junit:1.1.5'
    androidTestImplementation 'androidx.test.espresso:espresso-core:3.5.1'
    androidTestImplementation "androidx.compose.ui:ui-test-junit4:$compose_ui_version"
    debugImplementation "androidx.compose.ui:ui-tooling:$compose_ui_version"
    debugImplementation "androidx.compose.ui:ui-test-manifest:$compose_ui_version"


    // Room Database
    implementation 'androidx.room:room-common:2.5.0'
    implementation 'androidx.room:room-ktx:2.5.0'

    // Retrofit
    implementation 'com.squareup.retrofit2:retrofit:2.9.0'
    implementation "com.squareup.okhttp3:okhttp:5.0.0-alpha.2"
    implementation 'com.squareup.retrofit2:converter-gson:2.9.0'

    implementation("io.coil-kt:coil-compose:1.4.0")
}
```

Step 5 : Click on Sync now

Task 4:

Adding permissions

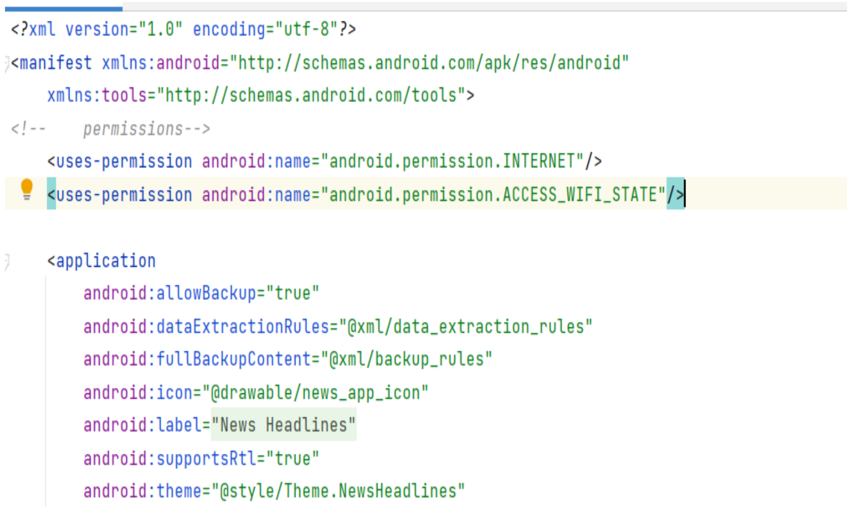
Step 1: Open AndroidManifest.xml.



```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@drawable/news_app_icon"
        android:label="News Headlines"
        android:supportsRtl="true"
        android:theme="@style/Theme.NewsHeadlines"
        tools:targetApi="31">
        <activity
            android:name=".DisplayNews"
            android:exported="false"
            android:label="DisplayNews"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".RegistrationActivity"
            android:exported="false"
            android:label="RegistrationActivity"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".MainPage"
            android:exported="false"
            android:label="MainPage"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
```

Step 2: Add permission to access wifi and internet

```
<!--     permissions-->
    <uses-permission android:name="android.permission.INTERNET"/>
    <uses-permission android:name="android.permission.ACCESS_WIFI_STATE"/>
```



```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
<!--    permissions-->
    <uses-permission android:name="android.permission.INTERNET"/>
    <uses-permission android:name="android.permission.ACCESS_WIFI_STATE"/>

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@drawable/news_app_icon"
        android:label="News Headlines"
        android:supportsRtl="true"
        android:theme="@style/Theme.NewsHeadlines"
```

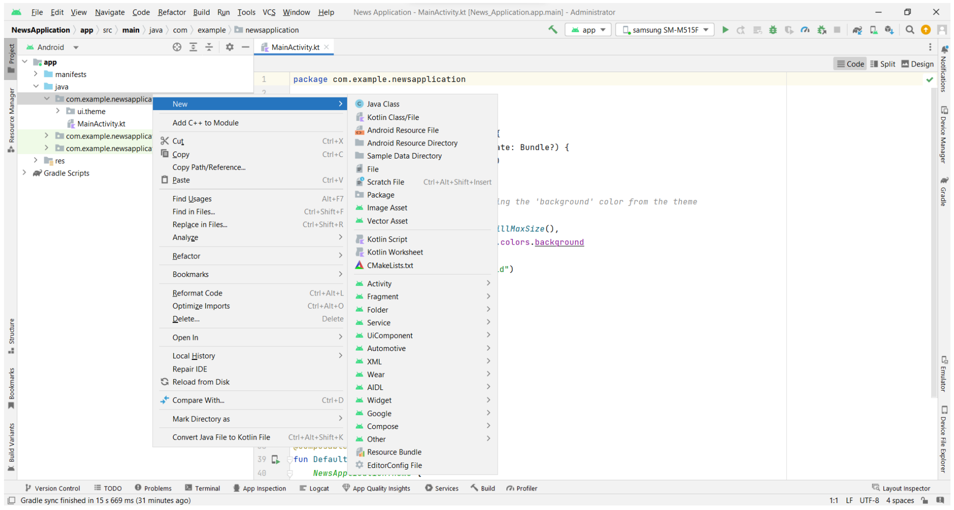
Task 5:

Creating the database classes.

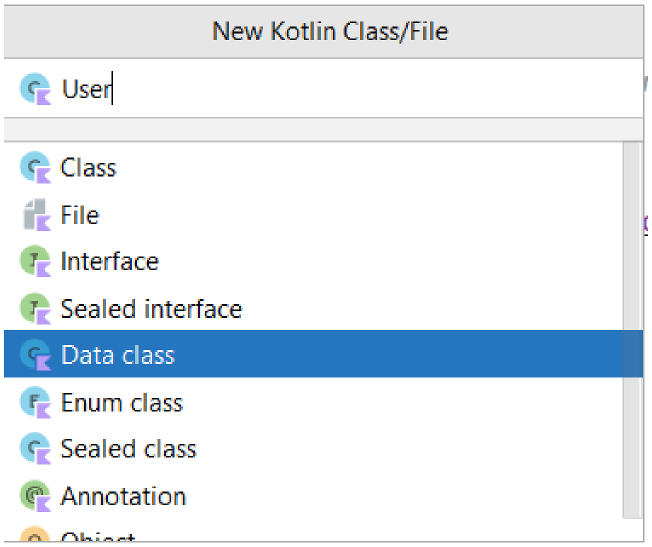
- To learn more about Database follow this link:

https://gorillalogic.com/blog/android-room-tutorial-simplifying-how-you-work-with-app-data/

Step 1 : Create User data class

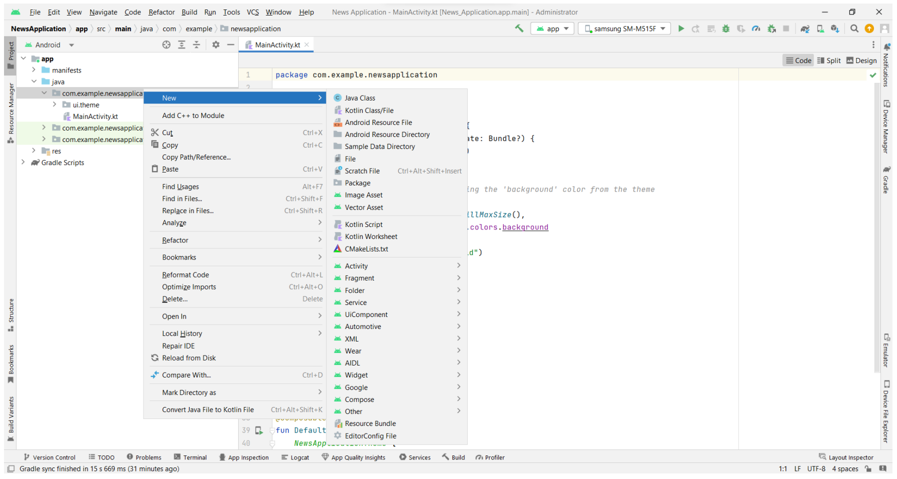


```
package com.example.newsapplication
```

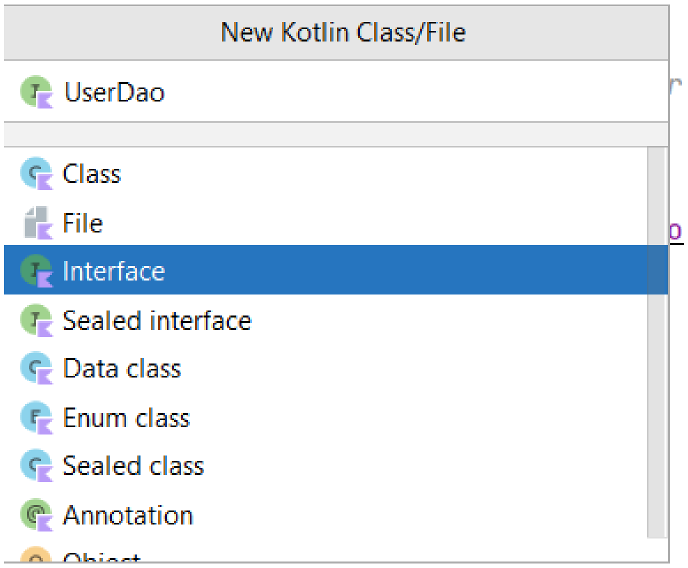


User class code:
https://github.com/smartinternz02/NewsHeadlines/blob/main/app/src/main/java/com/example/newsheadlines/User.kt

Step 2 : Create an UserDao interface

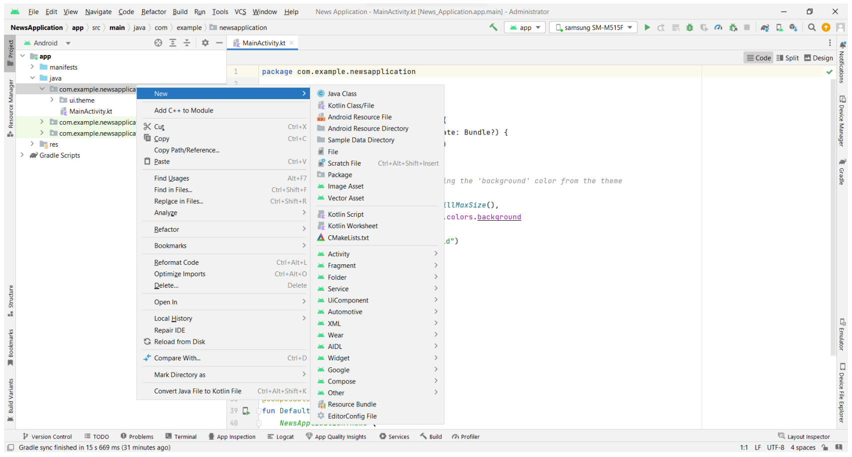


```
package com.example.newsapplication
```

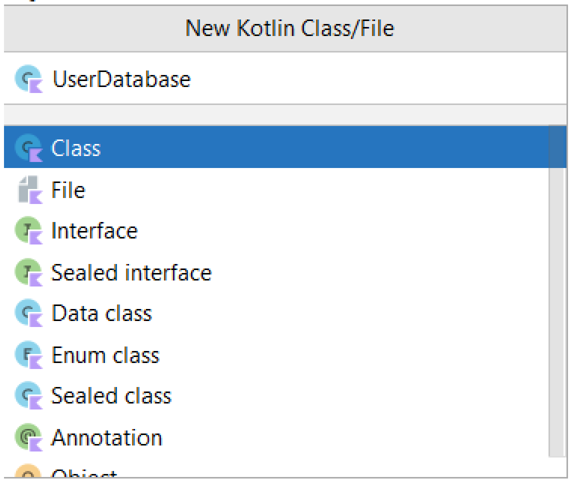


UserDao interface code:
https://github.com/smartinternz02/NewsHeadlines/blob/main/app/src/main/java/com/example/newsheadlines/UserDao.kt

Step 3 : Create an UserDatabase class



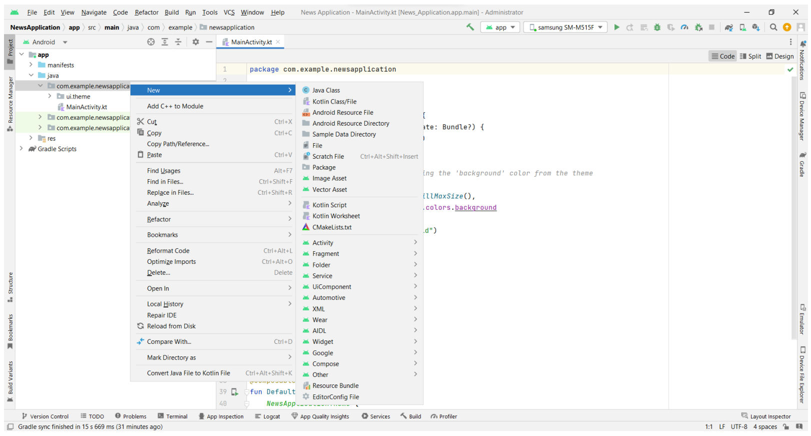
```
package com.example.newsapplication
```



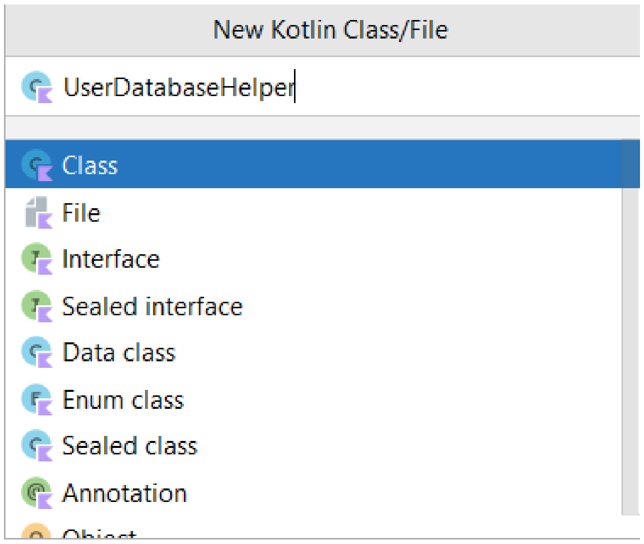
UserDatabase

UserDatabase class code : https://github.com/smartinternz02/NewsHeadlines/blob/main/app/src/main/java/com/example/newsheadlines/UserDatabase.kt

Step 4 : Create an UserDatabaseHelper class



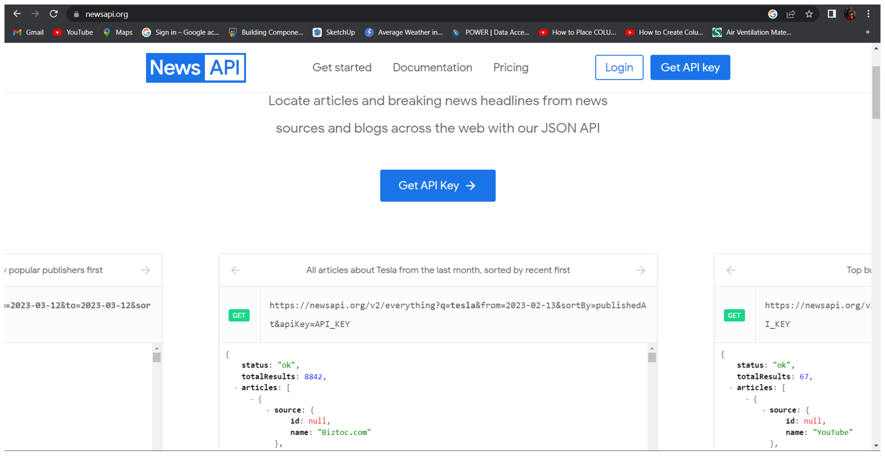
```
package com.example.newsapplication
```



UserDatabaseHelper class code :
https://github.com/smartinternz02/NewsHeadlines/blob/main/app/src/main/java/com/example/newsheadlines/UserDatabaseHelper.kt

Task 6 :

Creating API Service and required classes for integrating API
Step 1: Create a API key for the required API



Locate articles and breaking news headlines from news sources and blogs across the web with our JSON API

```
=2023-03-12&to=2023-03-12&sor
```

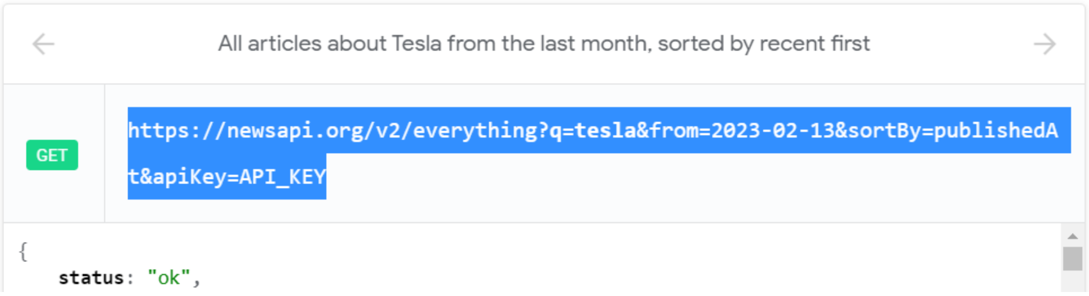
```
https://newsapi.org/v2/everything?q=tesla&from=2023-02-13&sortBy=publishedA
t&apiKey=API_KEY
```

```
{
    status: "ok",
    totalResults: 8842,
  - articles: [
      - {
          - source: {
                id: null,
                name: "Biztoc.com"
            },
```

```
https://newsapi.org/v
I_KEY
```

```
{
    status: "ok",
    totalResults: 67,
  - articles: [
      - {
          - source: {
                id: null,
                name: "YouTube"
            },
```

- Code which is needed to copy:

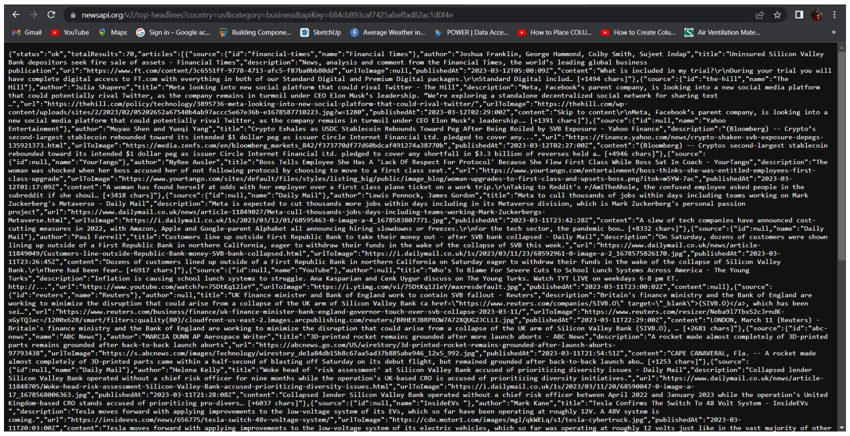

All articles about Tesla from the last month, sorted by recent first
GET

```
https://newsapi.org/v2/everything?q=tesla&from=2023-02-13&sortBy=publishedA
t&apiKey=API_KEY
```

```
{
    status: "ok",
```

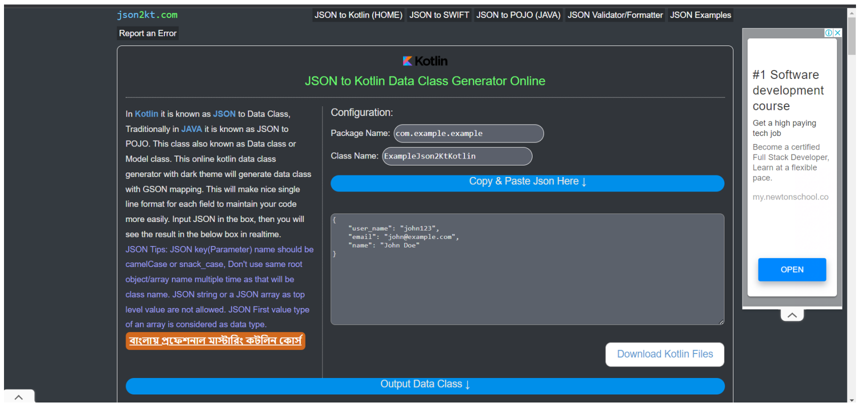
- Enter the API key at API_KEY to get the complete json file.

Json File



```
{"status":"ok","totalResults":70,"articles":[{"source":{"id":"financial-times","name":"Financial Times"},"author":"Joshua Franklin, George Hammond, Colby Smith, Sujeet Indap","title":"Uninsured Silicon Valley
Bank depositors seek fire sale of assets - Financial Times","description":"News, analysis and comment from the Financial Times, the world's leading global business
publication","url":"https://www.ft.com/content/3c6551ff-9778-4713-afc5-f87ba0bb80dd","urlToImage":null,"publishedAt":"2023-03-12T05:00:09Z","content":"What is included in my trial?\r\nDuring your trial you will
have complete digital access to FT.com with everything in both of our Standard Digital and Premium Digital packages.\r\nStandard Digital includ… [+1494 chars]"},{"source":{"id":"the-hill","name":"The
Hill"},"author":"Julia Shapero","title":"Meta looking into new social platform that could rival Twitter - The Hill","description":"Meta, Facebook's parent company, is looking into a new social media platform
that could potentially rival Twitter, as the company remains in turmoil under CEO Elon Musk's leadership. “We're exploring a standalone decentralized social network for sharing text
…","url":"https://thehill.com/policy/technology/3895736-meta-looking-into-new-social-platform-that-could-rival-twitter/","urlToImage":"https://thehill.com/wp-
content/uploads/sites/2/2023/02/05202652a67540b4ab97accc5e67e36b-e1678587710223.jpg?w=1280","publishedAt":"2023-03-12T02:29:00Z","content":"Skip to content\r\nMeta, Facebook's parent company, is looking into a
new social media platform that could potentially rival Twitter, as the company remains in turmoil under CEO Elon Musk's leadership.… [+1391 chars]"},{"source":{"id":null,"name":"Yahoo
Entertainment"},"author":"Muyao Shen and Yueqi Yang","title":"Crypto Exhales as USDC Stablecoin Rebounds Toward Peg After Being Roiled by SVB Exposure - Yahoo Finance","description":"(Bloomberg) -- Crypto's
second-largest stablecoin rebounded toward its intended $1 dollar peg as issuer Circle Internet Financial Ltd. pledged to cover any...","url":"https://finance.yahoo.com/news/crypto-shaken-svb-exposure-depegs-
135921373.html","urlToImage":"https://media.zenfs.com/en/bloomberg_markets_842/f373770df77d60bdcaf491274a38770b","publishedAt":"2023-03-12T02:27:00Z","content":"(Bloomberg) -- Cryptos second-largest stablecoin
rebounded toward its intended $1 dollar peg as issuer Circle Internet Financial Ltd. pledged to cover any shortfall in $3.3 billion of reverses held a… [+4946 chars]"},{"source":
{"id":null,"name":"YourTango"},"author":"NyRee Ausler","title":"Boss Tells Employee She Has A 'Lack Of Respect For Protocol' Because She Flew First Class While Boss Sat In Coach - YourTango","description":"The
woman was shocked when her boss accused her of not following protocol by choosing to move to a first class seat.","url":"https://www.yourtango.com/entertainment/boss-thinks-she-was-entitled-employees-first-
class-upgrade","urlToImage":"https://www.yourtango.com/sites/default/files/styles/listing_big/public/image_blog/woman-upgrades-to-first-class-and-upsets-boss.png?itok=m5YW-7ac","publishedAt":"2023-03-
12T01:17:09Z","content":"A woman has found herself at odds with her employer over a first class plane ticket on a work trip.\r\nTaking to Reddit's r/AmITheAhole, the confused employee asked people in the
subreddit if she shoul… [+3418 chars]"},{"source":{"id":null,"name":"Daily Mail"},"author":"Lewis Pennock, James Gordon","title":"Meta to cull thousands of jobs within days including teams working on Mark
Zuckerberg's Metaverse - Daily Mail","description":"Meta is expected to cut thousands more jobs within days including in its Metaverse division, which is Mark Zuckerberg's personal passion
project","url":"https://www.dailymail.co.uk/news/article-11849027/Meta-cull-thousands-jobs-days-including-teams-working-Mark-Zuckerbergs-
Metaverse.html","urlToImage":"https://i.dailymail.co.uk/1s/2023/03/12/01/68595463-0-image-a-4_1678583807771.jpg","publishedAt":"2023-03-11T23:42:28Z","content":"A slew of tech companies have announced cost-
cutting measures in 2022, with Amazon, Apple and Google-parent Alphabet all announcing hiring slowdowns or freezes.\r\nFor the tech sector, the pandemic boo… [+8332 chars]"},{"source":{"id":null,"name":"Daily
Mail"},"author":"Paul Farrell","title":"Customers line up outside First Republic Bank to take their money out - after SVB bank collapsed - Daily Mail","description":"On Saturday, dozens of customers were shown
lining up outside of a First Republic Bank in northern California, eager to withdraw their funds in the wake of the collapse of SVB this week.","url":"https://www.dailymail.co.uk/news/article-
11849049/Customers-line-outside-Republic-Bank-money-SVB-bank-collapsed.html","urlToImage":"https://i.dailymail.co.uk/1s/2023/03/11/23/68592961-0-image-a-2_1678575826170.jpg","publishedAt":"2023-03-
11T23:26:45Z","content":"Dozens of customers lined up outside of a First Republic Bank in northern California on Saturday eager to withdraw their funds in the wake of the collapse of Silicon Valley
Bank.\r\nThere had been fear… [+6917 chars]"},{"source":{"id":null,"name":"YouTube"},"author":null,"title":"Who's To Blame For Severe Cuts to School Lunch Systems Across America - The Young
Turks","description":"Inflation is causing school lunch systems to struggle. Ana Kasparian and Cenk Uygur discuss on The Young Turks. Watch TYT LIVE on weekdays 6-8 pm ET.
http://...","url":"https://www.youtube.com/watch?v=75DtKq12leY","urlToImage":"https://i.ytimg.com/vi/75DtKq12leY/maxresdefault.jpg","publishedAt":"2023-03-11T23:00:02Z","content":null},{"source":
{"id":"reuters","name":"Reuters"},"author":null,"title":"UK finance minister and Bank of England work to contain SVB fallout - Reuters","description":"Britain's finance ministry and the Bank of England are
working to minimize the disruption that could arise from a collapse of the UK arm of Silicon Valley Bank <a href=\"https://www.reuters.com/companies/SIVB.O\" target=\"_blank\">(SIVB.O)</a>, which has been
sei…","url":"https://www.reuters.com/business/finance/uk-finance-minister-bank-england-governor-touch-over-svb-collapse-2023-03-11/","urlToImage":"https://www.reuters.com/resizer/Neba9l7TbxS2cJrndK-
xGyTQJac=/1200x628/smart/filters:quality(80)/cloudfront-us-east-2.images.arcpublishing.com/reuters/BRHERJBRPROW7A72XQUG2JCLLI.jpg","publishedAt":"2023-03-11T22:29:00Z","content":"LONDON, March 11 (Reuters) -
Britain's finance ministry and the Bank of England are working to minimize the disruption that could arise from a collapse of the UK arm of Silicon Valley Bank (SIVB.O), … [+2681 chars]"},{"source":{"id":"abc-
news","name":"ABC News"},"author":"MARCIA DUNN AP Aerospace Writer","title":"3D-printed rocket remains grounded after more launch aborts - ABC News","description":"A rocket made almost completely of 3D-printed
parts remains grounded after back-to-back launch aborts","url":"https://abcnews.go.com/US/wireStory/3d-printed-rocket-remains-grounded-after-launch-aborts-
97793438","urlToImage":"https://s.abcnews.com/images/Technology/wirestory_de1a84db15b8c67aa5ad37b885abe946_12x5_992.jpg","publishedAt":"2023-03-11T21:54:51Z","content":"CAPE CANAVERAL, Fla. -- A rocket made
almost completely of 3D-printed parts came within a half-second of blasting off Saturday on its debut flight, but remained grounded after back-to-back launch abo… [+1253 chars]"},{"source":
{"id":null,"name":"Daily Mail"},"author":"Helena Kelly","title":"Woke head of 'risk assessment' at Silicon Valley Bank accused of prioritizing diversity issues - Daily Mail","description":"Collapsed lender
Silicon Valley Bank operated without a chief risk officer for nine months while the operation's UK-based CRO is accused of prioritizing diversity initiatives.","url":"https://www.dailymail.co.uk/news/article-
11848705/Woke-head-risk-assessment-Silicon-Valley-Bank-accused-prioritizing-diversity-issues.html","urlToImage":"https://i.dailymail.co.uk/1s/2023/03/11/20/68590047-0-image-a-
17_1678568006363.jpg","publishedAt":"2023-03-11T21:28:08Z","content":"Collapsed lender Silicon Valley Bank operated without a chief risk officer between April 2022 and January 2023 while the operation's United
Kingdom-based CRO stands accused of prioritizing pro-divers… [+6037 chars]"},{"source":{"id":null,"name":"InsideEVs "},"author":"Mark Kane","title":"Tesla Confirms The Switch To 48 Volt System - InsideEVs
","description":"Tesla moves forward with applying improvements to the low-voltage system of its EVs, which so far have been operating at roughly 12V. A 48V system is
coming.","url":"https://insideevs.com/news/656775/tesla-switch-48v-voltage-system/","urlToImage":"https://cdn.motor1.com/images/mgl/qkWELq/s1/tesla-cybertruck.jpg","publishedAt":"2023-03-
11T20:03:00Z","content":"Tesla moves forward with applying improvements to the low-voltage system of its electric vehicles, which so far was operating at roughly 12 volts just like in the vast majority of other
```

Step 2: Copy and paste the complete json file to json2kt.com



JSON to Kotlin Data Class Generator Online

In Kotlin it is known as JSON to Data Class, Traditionally in JAVA it is known as JSON to POJO. This class also known as Data class or Model class. This online kotlin data class generator with dark theme will generate data class with GSON mapping. This will make nice single line format for each field to maintain your code more easily. Input JSON in the box, then you will see the result in the below box in realtime.

JSON Tips: JSON key(Parameter) name should be camelCase or snack_case, Don't use same root object/array name multiple time as that will be class name. JSON string or a JSON array as top level value are not allowed. JSON First value type of an array is considered as data type.

বাংলায় প্রফেশনাল মাস্টারিং কটলিন কোর্স

Configuration:

Package Name: com.example.example

Class Name: ExampleJson2KtKotlin

```
{
    "user_name": "john123",
    "email": "john@example.com",
    "name": "John Doe"
}
```

Download Kotlin Files
Output Data Class ↓
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Get a high paying tech job
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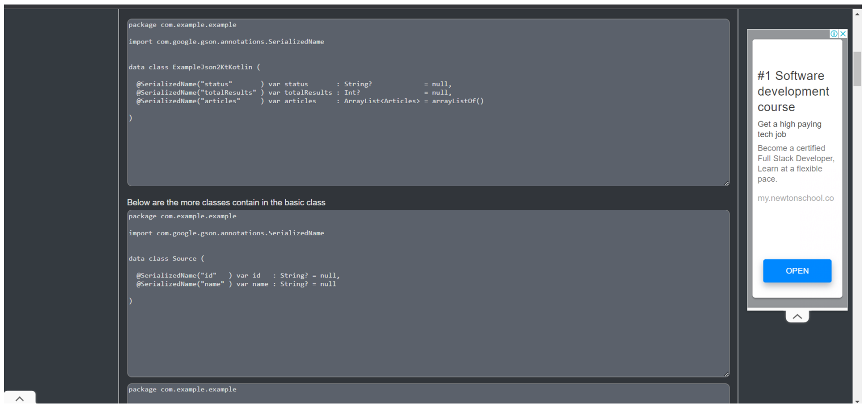
OPEN

Click on Output Data class



```
package com.example.example

import com.google.gson.annotations.SerializedName


data class ExampleJson2KtKotlin (

  @SerializedName("status"       ) var status       : String?             = null,
  @SerializedName("totalResults" ) var totalResults : Int?                = null,
  @SerializedName("articles"     ) var articles     : ArrayList<Articles> = arrayListOf()

)
```

Below are the more classes contain in the basic class

```
package com.example.example

import com.google.gson.annotations.SerializedName


data class Source (

  @SerializedName("id"   ) var id   : String? = null,
  @SerializedName("name" ) var name : String? = null

)
```

```
package com.example.example
```

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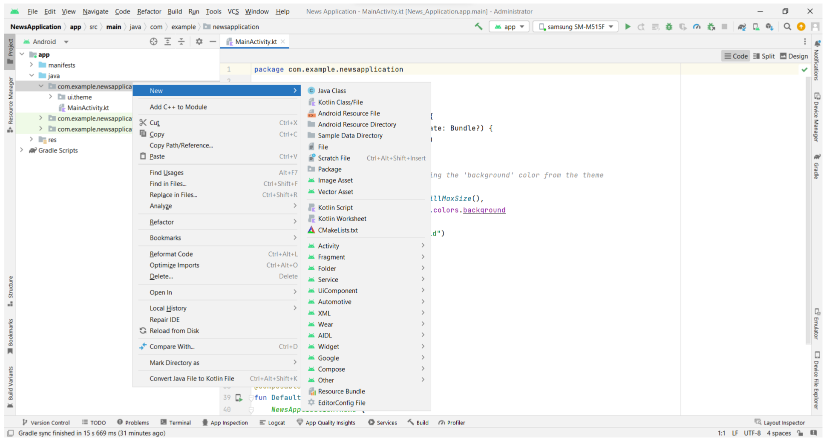
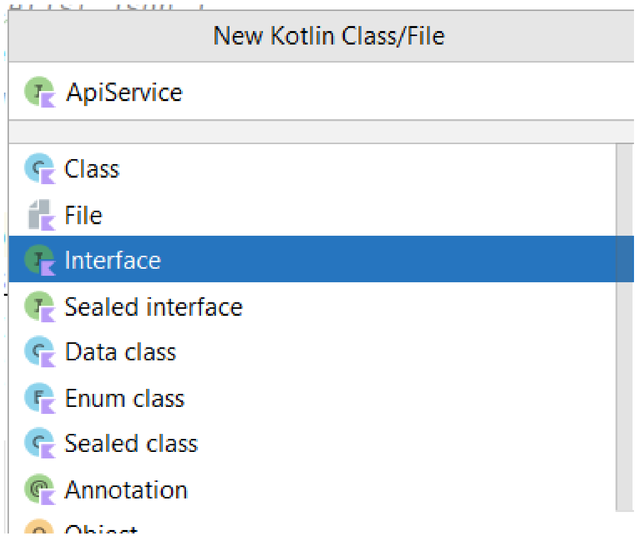
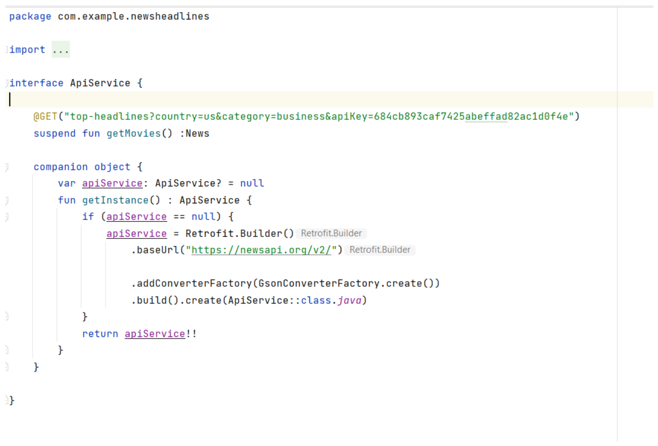
Now use this classes in android studio

Database for news integration into project

Step 3:
Create ApiService interface





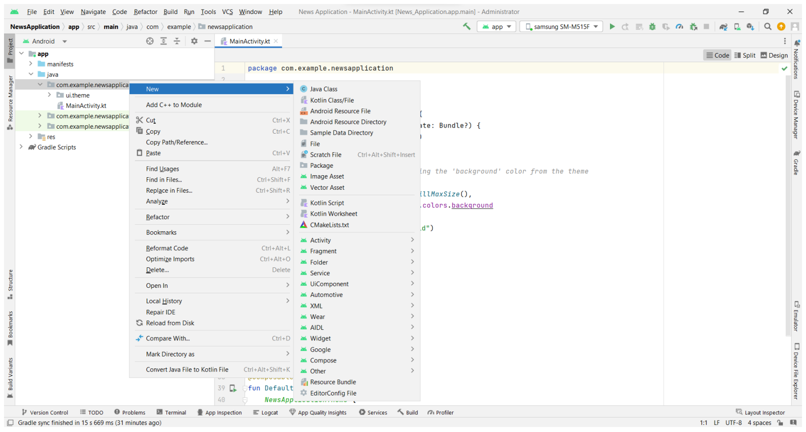


```kotlin
package com.example.newsheadlines

import ...

interface ApiService {

    @GET("top-headlines?country=us&category=business&apiKey=684cb893caf7425abeffad82ac1d0f4e")
    suspend fun getMovies() :News

    companion object {
        var apiService: ApiService? = null
        fun getInstance() : ApiService {
            if (apiService == null) {
                apiService = Retrofit.Builder() Retrofit.Builder
                    .baseUrl("https://newsapi.org/v2/") Retrofit.Builder

                    .addConverterFactory(GsonConverterFactory.create())
                    .build().create(ApiService::class.java)
            }
            return apiService!!
        }
    }

}
```

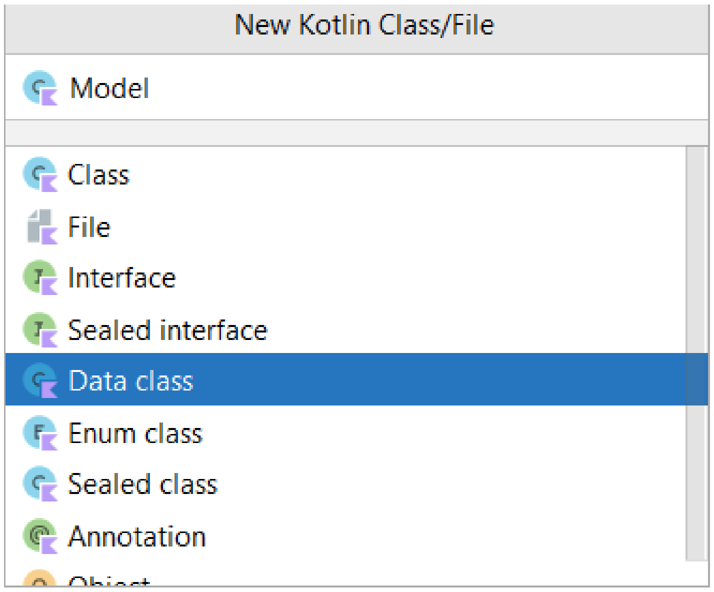
ApiService interface code:
https://github.com/smartinternz02/NewsHeadlines/tree/main/app/src/main/java/com/example/newsheadlines/ApiService.kt

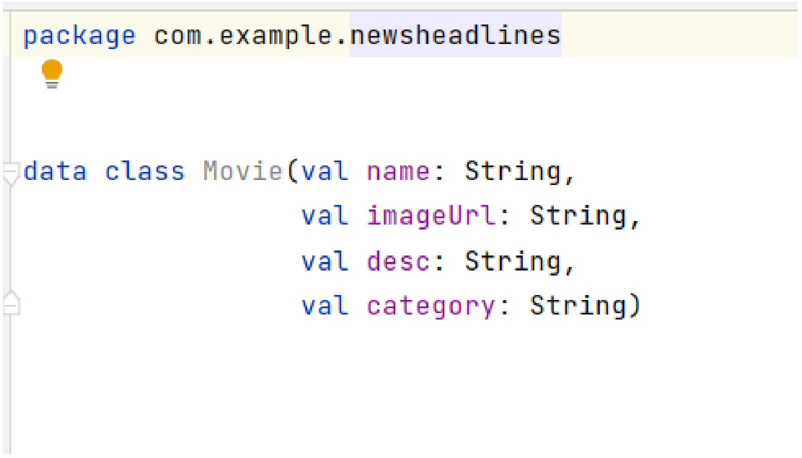
Step 4:

Create Model data class



```
package com.example.newsapplication
```

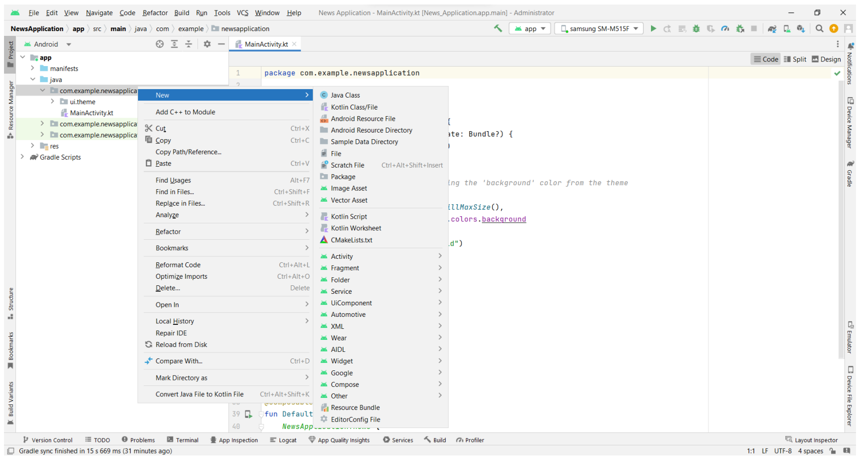




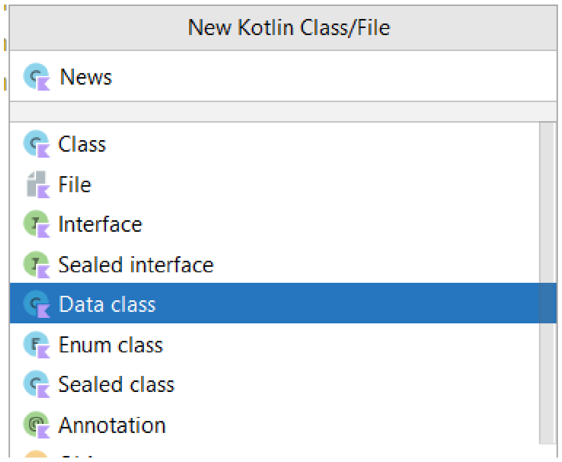
```
package com.example.newsheadlines


data class Movie(val name: String,
                 val imageUrl: String,
                 val desc: String,
                 val category: String)
```

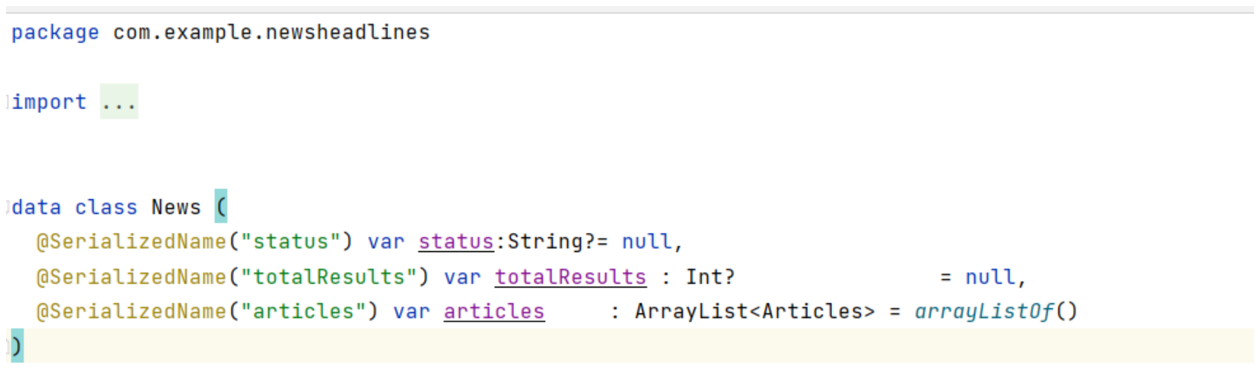
Model class code:
https://github.com/smartinternz02/NewsHeadlines/tree/main/app/src/main/java/com/example/newsheadlines/Model.kt

Step 5:
Create News data class



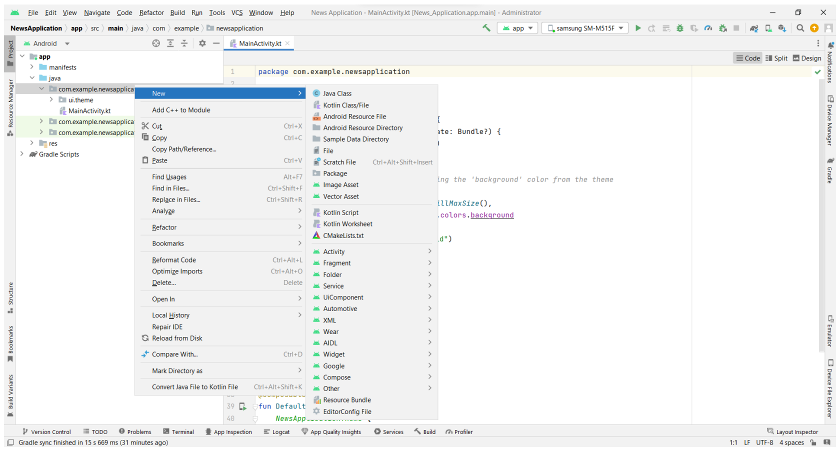
```
package com.example.newsapplication
```

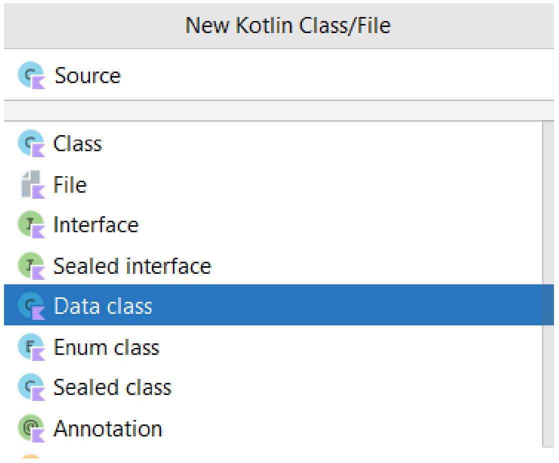


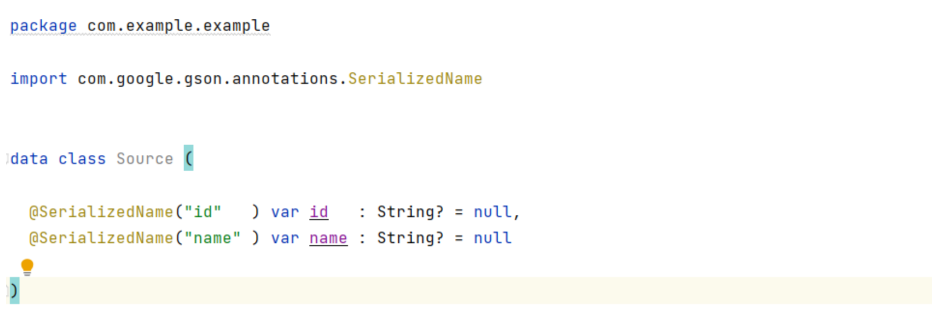


```
package com.example.newsheadlines

import ...


data class News (
    @SerializedName("status") var status:String?= null,
    @SerializedName("totalResults") var totalResults : Int?             = null,
    @SerializedName("articles") var articles      : ArrayList<Articles> = arrayListOf()
)
```

News class code:
https://github.com/smartinternz02/NewsHeadlines/tree/main/app/src/main/java/com/example/newsheadlines/News.kt
Step 6:
Create Source data class

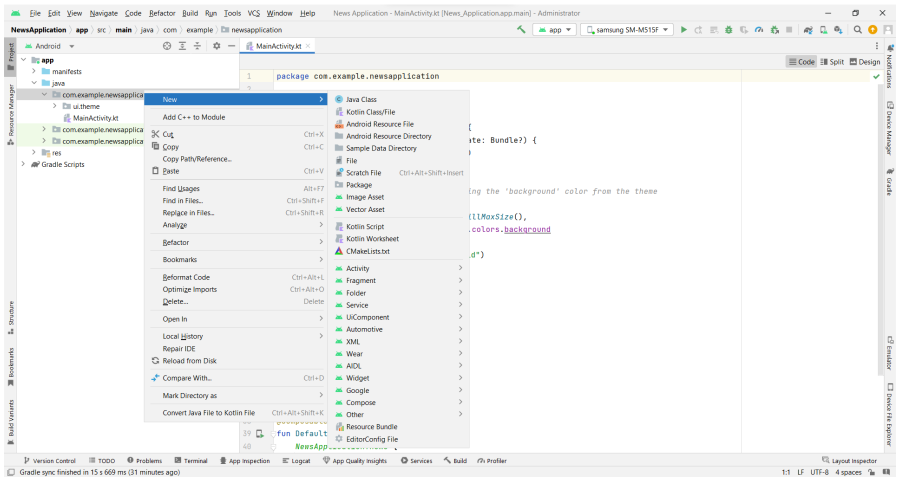




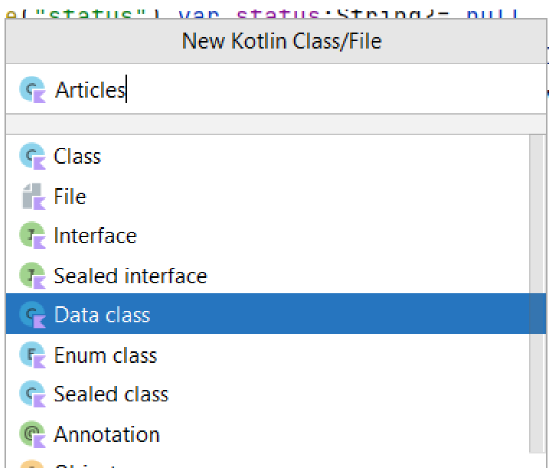


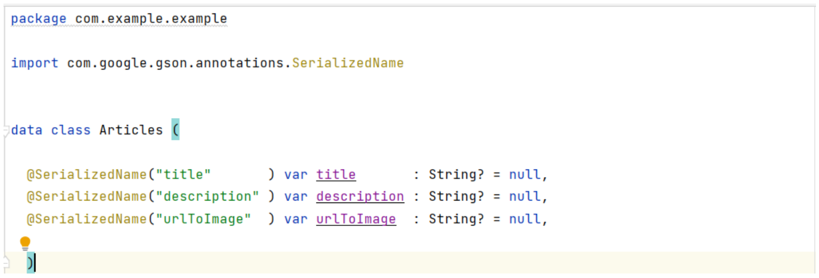
```kotlin
package com.example.example

import com.google.gson.annotations.SerializedName


data class Source (

  @SerializedName("id"   ) var id   : String? = null,
  @SerializedName("name" ) var name : String? = null

)
```

Model class code:
https://github.com/smartinternz02/NewsHeadlines/tree/main/app/src/main/java/com/example/newsheadlines/Source.kt
Step 7:
Create Articles data class



```kotlin
package com.example.newsapplication
```

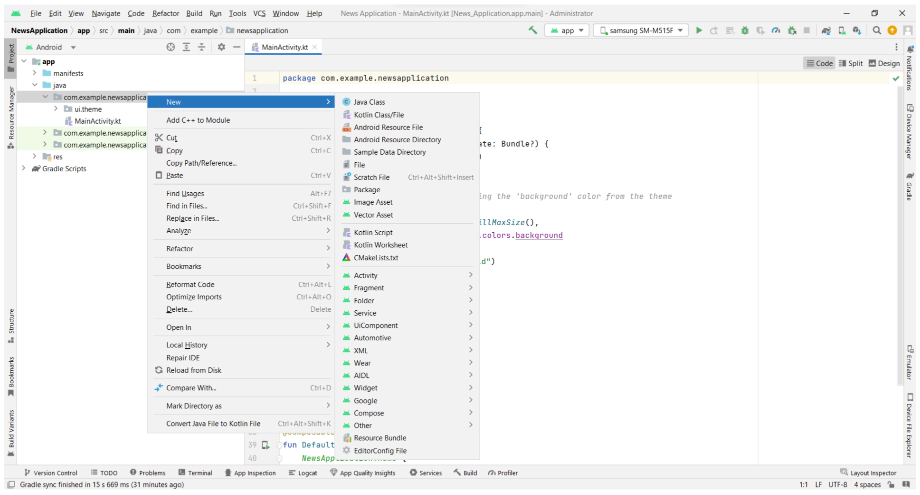


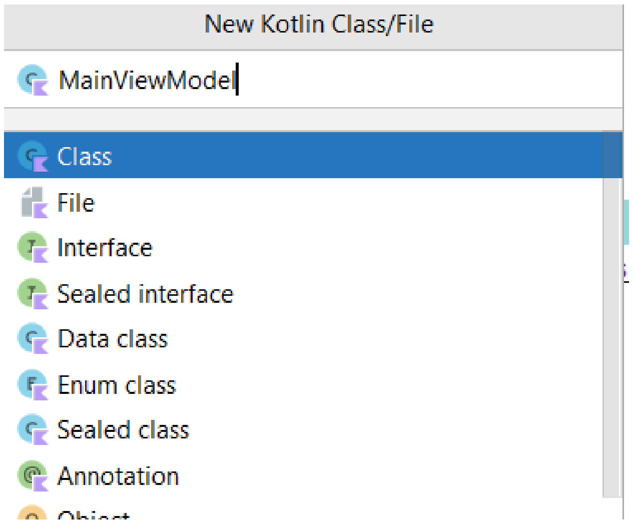


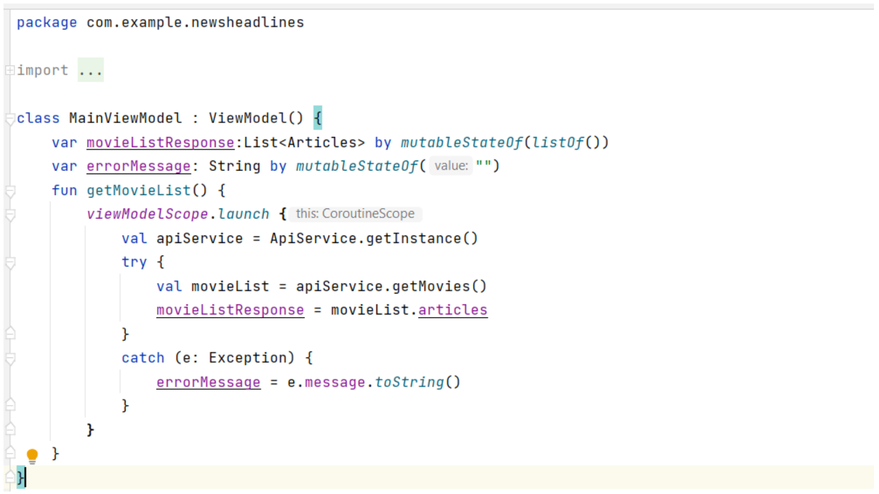
```kotlin
package com.example.example

import com.google.gson.annotations.SerializedName


data class Articles (

  @SerializedName("title"       ) var title       : String? = null,
  @SerializedName("description" ) var description : String? = null,
  @SerializedName("urlToImage"  ) var urlToImage  : String? = null,

)
```

Article class code:
https://github.com/smartinternz02/NewsHeadlines/tree/main/app/src/main/java/com/example/newsheadlines/Articles.kt

Step 8:
Create MainViewModel class





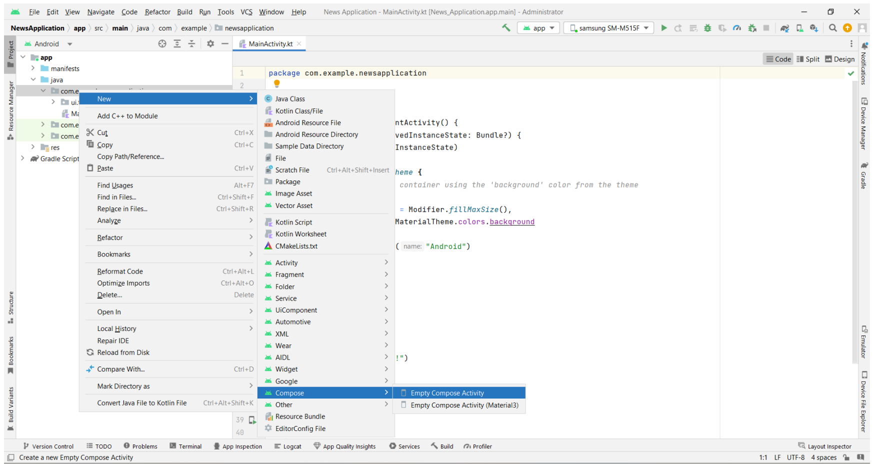


```kotlin
package com.example.newsheadlines

import ...

class MainViewModel : ViewModel() {
    var movieListResponse:List<Articles> by mutableStateOf(listOf())
    var errorMessage: String by mutableStateOf( value: "")
    fun getMovieList() {
        viewModelScope.launch { this: CoroutineScope
            val apiService = ApiService.getInstance()
            try {
                val movieList = apiService.getMovies()
                movieListResponse = movieList.articles
            }
            catch (e: Exception) {
                errorMessage = e.message.toString()
            }
        }
    }
}
```

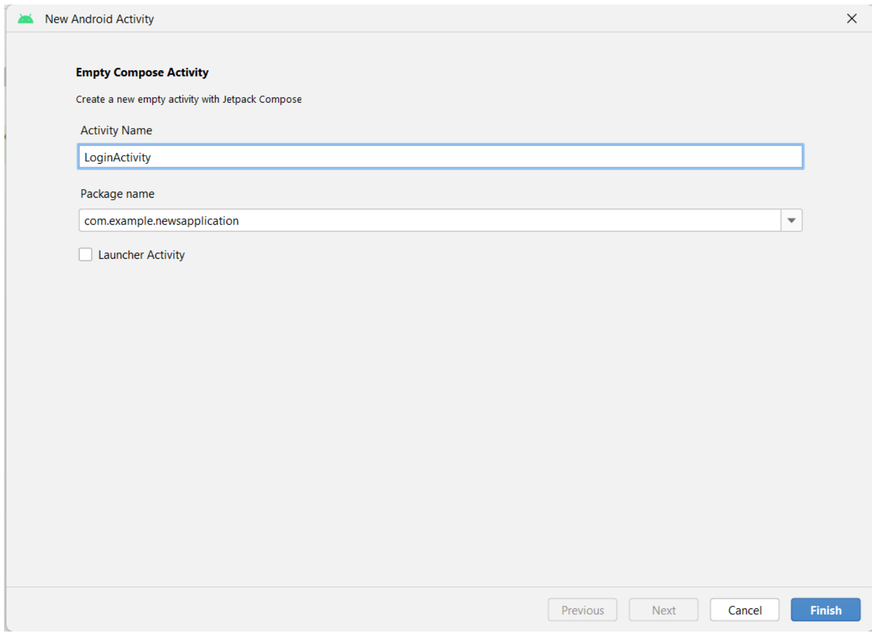
MainViewModel class code:
https://github.com/smartinternz02/NewsHeadlines/tree/main/app/src/main/java/com/example/newsheadlines/MainViewModel.kt

Task 7:

Building application UI and connecting to database.
Step 1: Creating LoginActivity.kt with database



```
package com.example.newsapplication
ntActivity() {
vedInstanceState: Bundle?) {
InstanceState)
heme {
 container using the 'background' color from the theme
 = Modifier.fillMaxSize(),
MaterialTheme.colors.background
( name: "Android")
!")
```



Empty Compose Activity

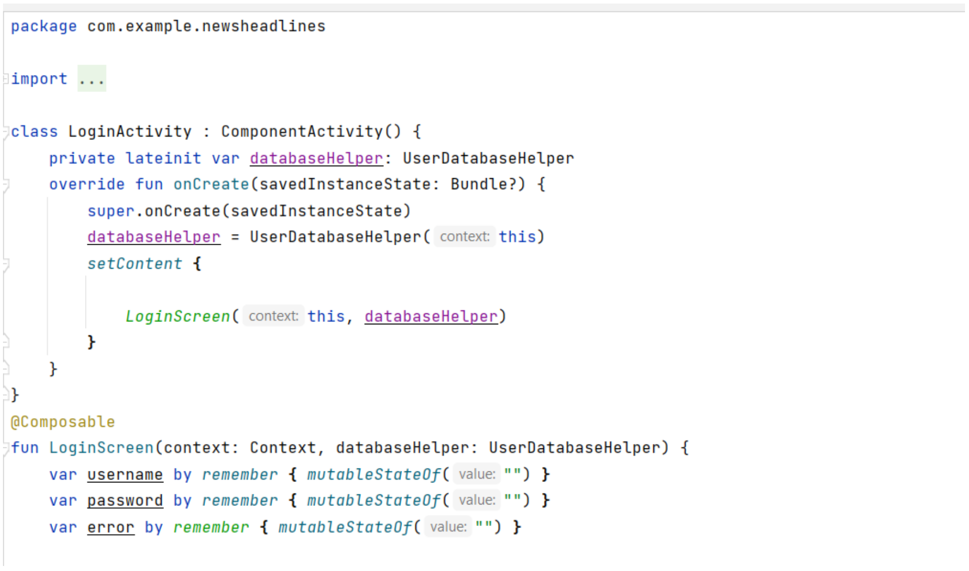
Create a new empty activity with Jetpack Compose

Activity Name: LoginActivity

Package name: com.example.newsapplication

[ ] Launcher Activity

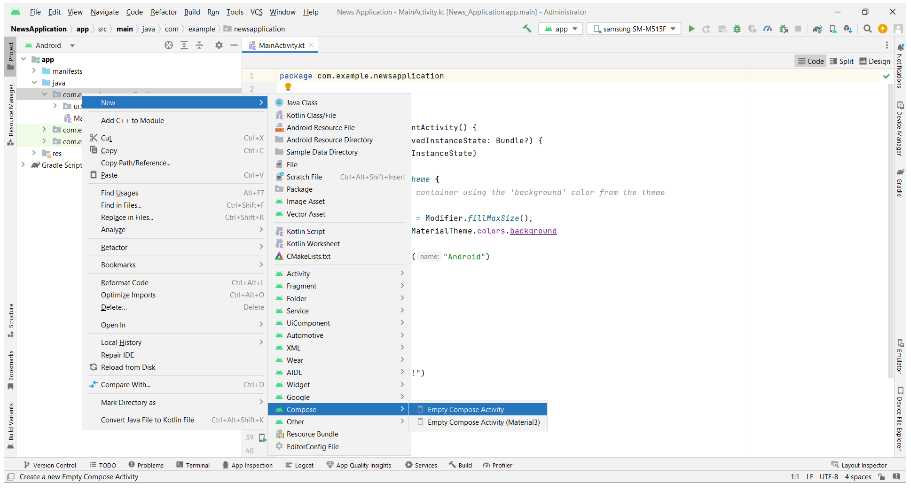
Database connection in LoginActivity.kt



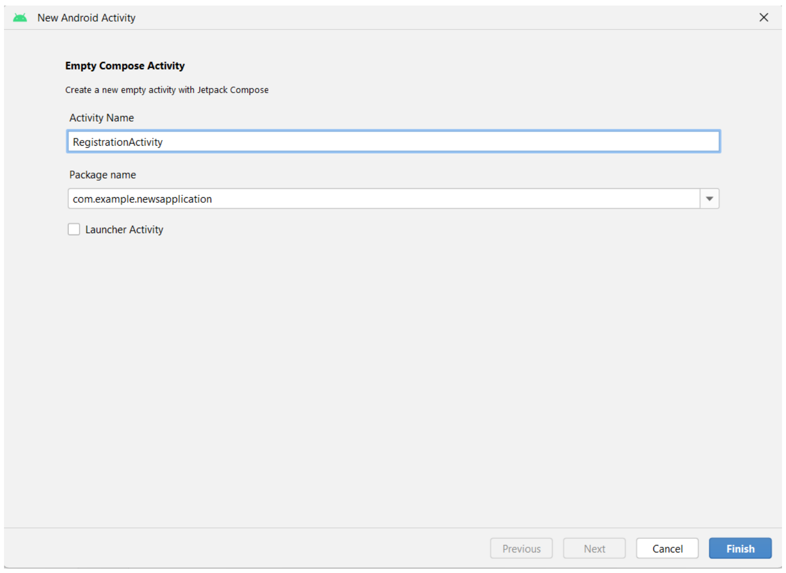
```
package com.example.newsheadlines

import ...

class LoginActivity : ComponentActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper( context: this)
        setContent {

            LoginScreen( context: this, databaseHelper)
        }
    }
}
@Composable
fun LoginScreen(context: Context, databaseHelper: UserDatabaseHelper) {
    var username by remember { mutableStateOf( value: "") }
    var password by remember { mutableStateOf( value: "") }
    var error by remember { mutableStateOf( value: "") }
```

Complete code in below link
https://github.com/smartinternz02/NewsHeadlines/tree/main/app/src/main/java/com/example/newsheadlines/LoginActivity.kt

Step 2 : Creating RegistrationActivity.kt with database



```
package com.example.newsapplication

ntActivity() {
vedInstanceState: Bundle?) {
InstanceState)

heme {
 container using the 'background' color from the theme

 = Modifier.fillMaxSize(),
MaterialTheme.colors.background

( name: "Android")

!")
```



Empty Compose Activity

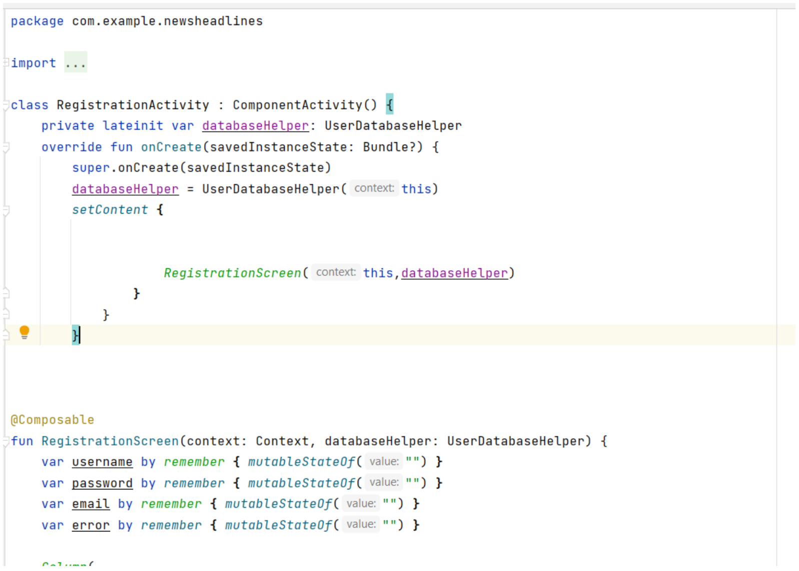
Create a new empty activity with Jetpack Compose

Activity Name: RegistrationActivity

Package name: com.example.newsapplication

☐ Launcher Activity

Database connection in RegistrationActivity.kt



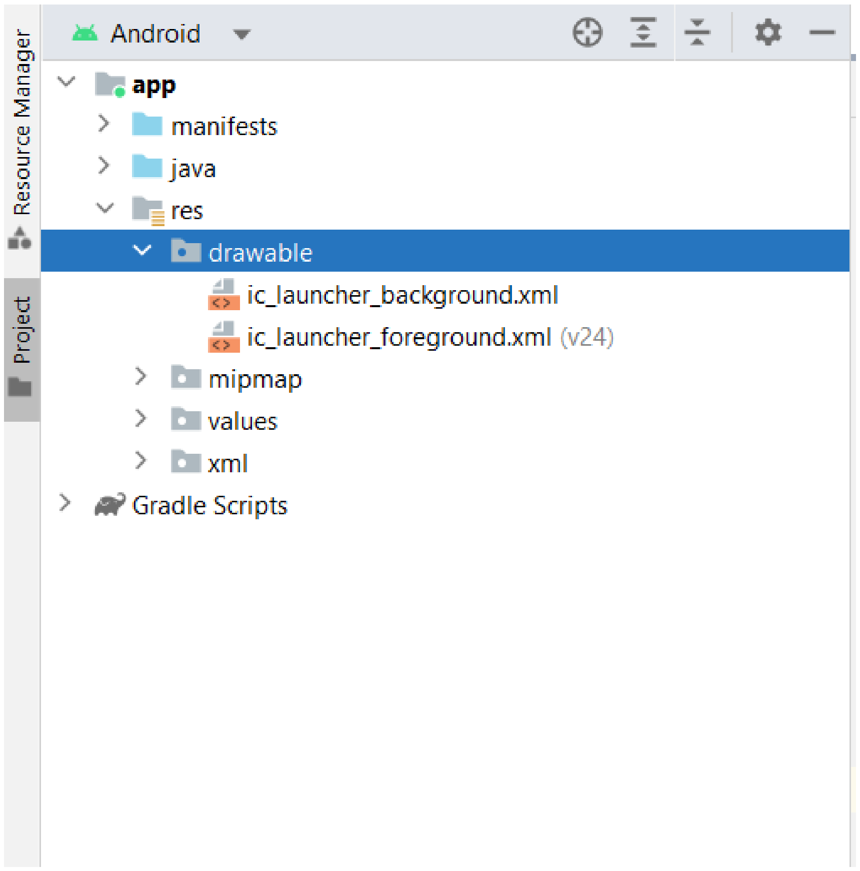
```
package com.example.newsheadlines

import ...

class RegistrationActivity : ComponentActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper( context: this)
        setContent {


                RegistrationScreen( context: this,databaseHelper)
            }
        }
    }



@Composable
fun RegistrationScreen(context: Context, databaseHelper: UserDatabaseHelper) {
    var username by remember { mutableStateOf( value: "") }
    var password by remember { mutableStateOf( value: "") }
    var email by remember { mutableStateOf( value: "") }
    var error by remember { mutableStateOf( value: "") }
```

Complete code in below link:
https://github.com/smartinternz02/NewsHeadlines/tree/main/app/src/main/java/com/example/newsheadlines/RegistrationActivity.kt

Step 3 : Creating MainActivity.kt file

In MainActivity.kt file the main application is developed

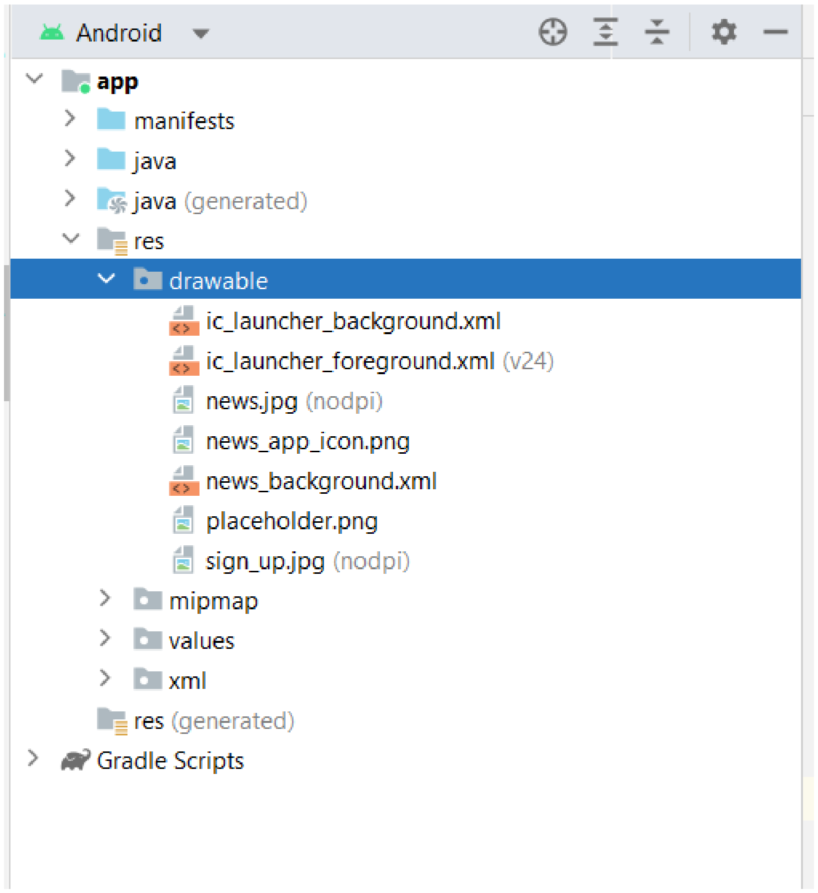
- Before creating UI we need to add some images in drawables which are in res



Download the required drawable from the code:
https://github.com/smartinternz02/NewsHeadlines/tree/master/app/src/main/res/drawable

Download the nodpi images from drawablenodpi :
https://github.com/smartinternz02/NewsHeadlines/tree/master/app/src/main/res/drawable-nodpi

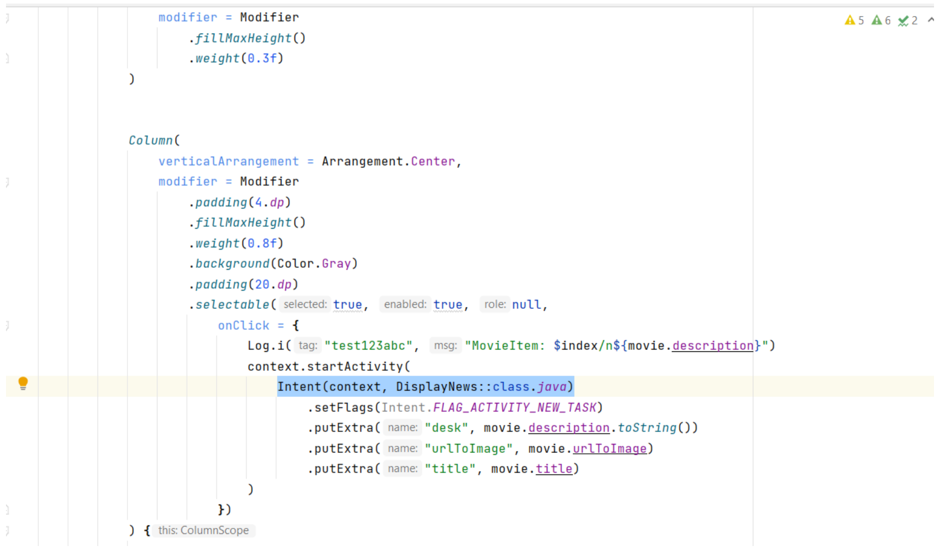
Required drawables



- After add all this we need to create the UI in MainActivity.kt file

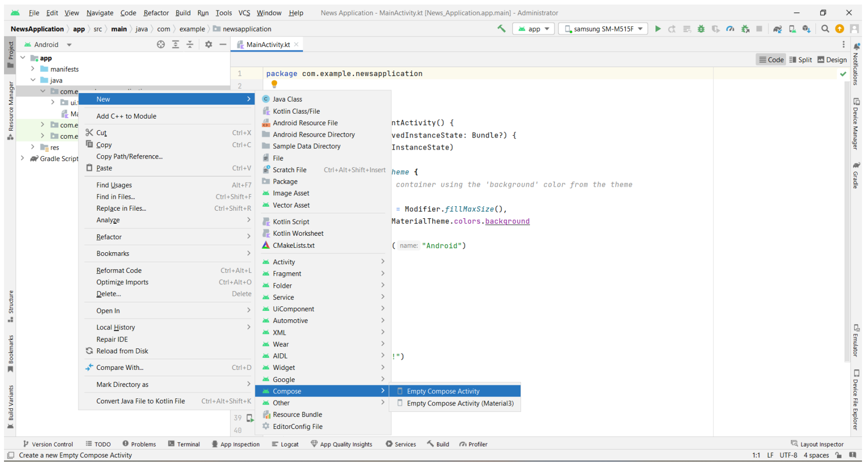
Mainpage.kt file
Complete MainActivity.kt code:
https://github.com/smartinternz02/NewsHeadlines/blob/main/app/src/main/java/com/example/newsheadlines/MainPage.kt

Linking MainActivity with DisplayNews.kt

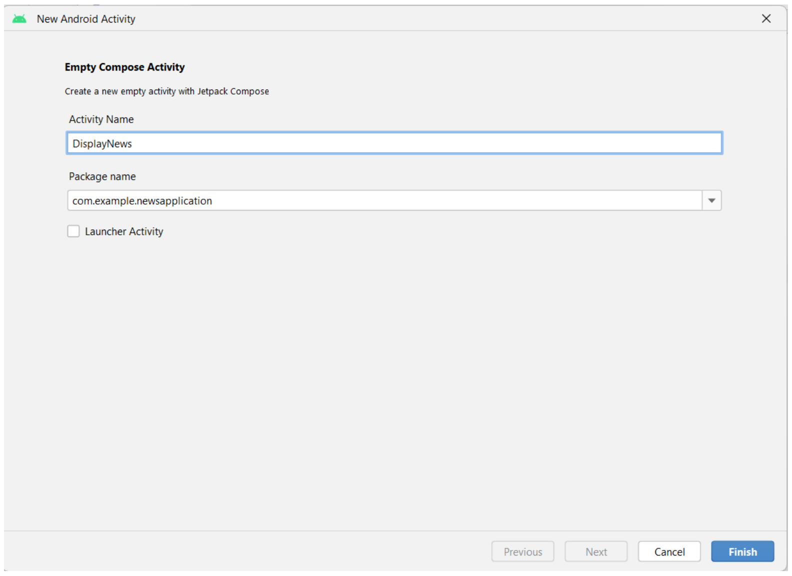


```
            modifier = Modifier
                .fillMaxHeight()
                .weight(0.3f)
        )


        Column(
            verticalArrangement = Arrangement.Center,
            modifier = Modifier
                .padding(4.dp)
                .fillMaxHeight()
                .weight(0.8f)
                .background(Color.Gray)
                .padding(20.dp)
                .selectable( selected: true,  enabled: true,  role: null,
                    onClick = {
                        Log.i( tag: "test123abc",  msg: "MovieItem: $index/n${movie.description}")
                        context.startActivity(
                            Intent(context, DisplayNews::class.java)
                                .setFlags(Intent.FLAG_ACTIVITY_NEW_TASK)
                                .putExtra( name: "desk", movie.description.toString())
                                .putExtra( name: "urlToImage", movie.urlToImage)
                                .putExtra( name: "title", movie.title)
                        )
                    })
        ) {  this: ColumnScope
```

Step 4 : Creating DisplayNews.kt file



```
package com.example.newsapplication

ntActivity() {
vedInstanceState: Bundle?) {
InstanceState)

heme {
 container using the 'background' color from the theme

 = Modifier.fillMaxSize(),
MaterialTheme.colors.background

( name: "Android")

!")
```



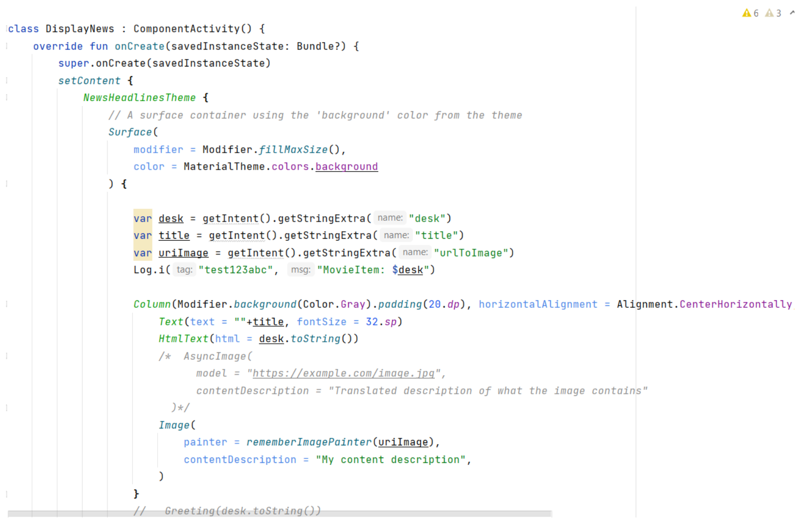
Empty Compose Activity

Create a new empty activity with Jetpack Compose

Activity Name: DisplayNews

Package name: com.example.newsapplication

Launcher Activity

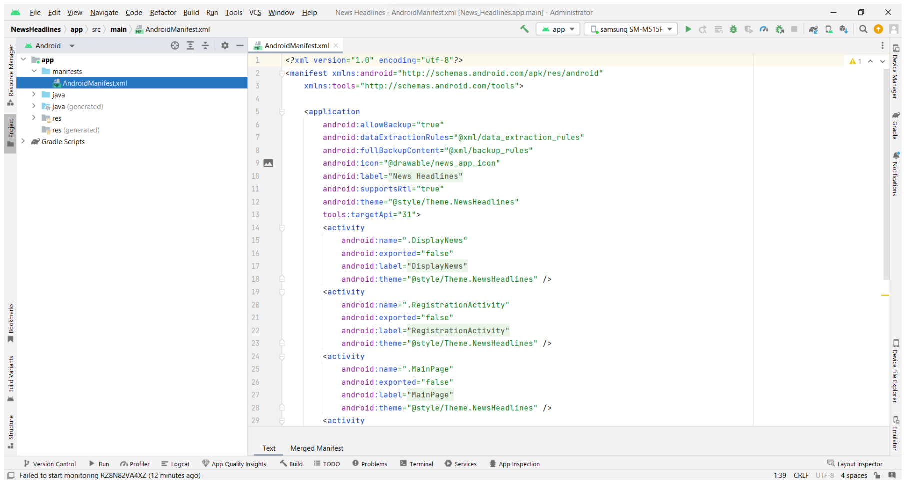


```
class DisplayNews : ComponentActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContent {
            NewsHeadlinesTheme {
                // A surface container using the 'background' color from the theme
                Surface(
                    modifier = Modifier.fillMaxSize(),
                    color = MaterialTheme.colors.background
                ) {

                    var desk = getIntent().getStringExtra( name: "desk")
                    var title = getIntent().getStringExtra( name: "title")
                    var uriImage = getIntent().getStringExtra( name: "urlToImage")
                    Log.i( tag: "test123abc",  msg: "MovieItem: $desk")

                    Column(Modifier.background(Color.Gray).padding(20.dp), horizontalAlignment = Alignment.CenterHorizontally
                        Text(text = ""+title, fontSize = 32.sp)
                        HtmlText(html = desk.toString())
                        /*  AsyncImage(
                                model = "https://example.com/image.jpg",
                                contentDescription = "Translated description of what the image contains"
                          )*/
                        Image(
                            painter = rememberImagePainter(uriImage),
                            contentDescription = "My content description",
                        )
                    }
                //   Greeting(desk.toString())
```

Complete DisplayNews.kt code:
https://github.com/smartinternz02/NewsHeadlines/blob/main/app/src/main/java/com/example/newsheadlines/DisplayNews.kt

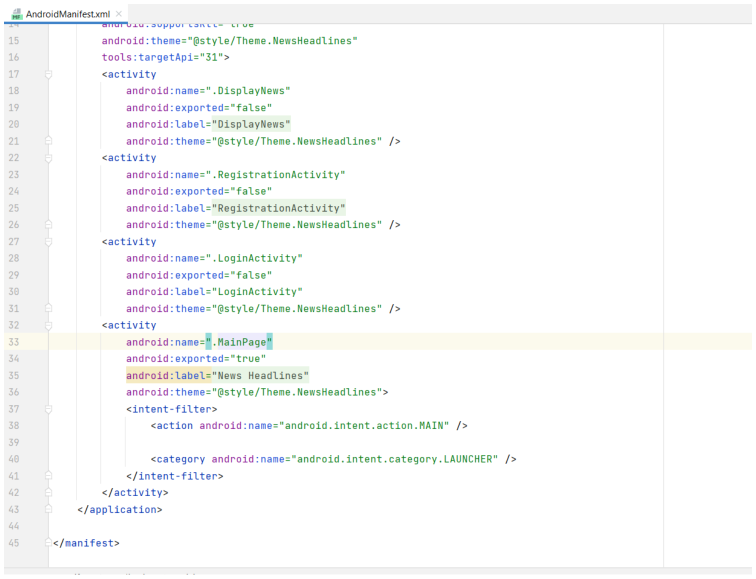
Task 8:

Modifying AndroidManifest.xml



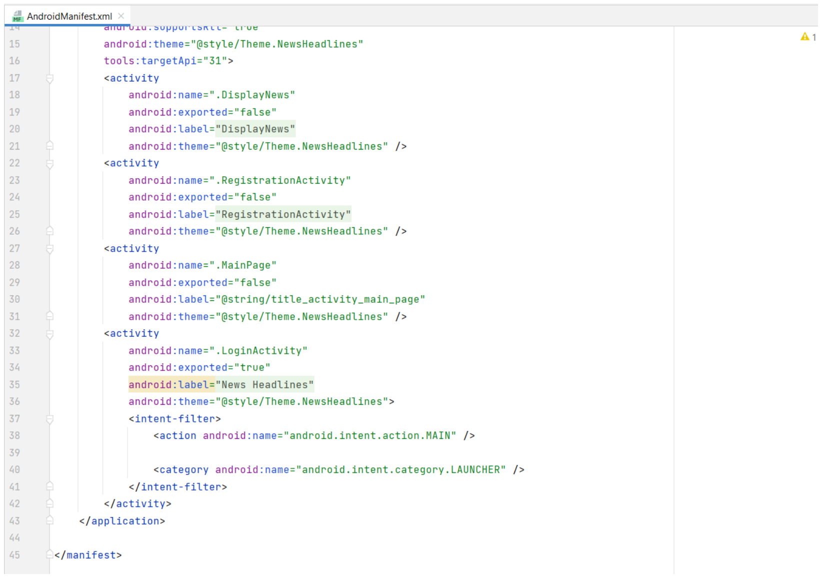
```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@drawable/news_app_icon"
        android:label="News Headlines"
        android:supportsRtl="true"
        android:theme="@style/Theme.NewsHeadlines"
        tools:targetApi="31">
        <activity
            android:name=".DisplayNews"
            android:exported="false"
            android:label="DisplayNews"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".RegistrationActivity"
            android:exported="false"
            android:label="RegistrationActivity"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".MainPage"
            android:exported="false"
            android:label="MainPage"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
```

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.



```xml
        android:theme="@style/Theme.NewsHeadlines"
        tools:targetApi="31">
        <activity
            android:name=".DisplayNews"
            android:exported="false"
            android:label="DisplayNews"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".RegistrationActivity"
            android:exported="false"
            android:label="RegistrationActivity"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".LoginActivity"
            android:exported="false"
            android:label="LoginActivity"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".MainPage"
            android:exported="true"
            android:label="News Headlines"
            android:theme="@style/Theme.NewsHeadlines">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

Changed AndroidManifest.xml.



```
        android:theme="@style/Theme.NewsHeadlines"
        tools:targetApi="31">
        <activity
            android:name=".DisplayNews"
            android:exported="false"
            android:label="DisplayNews"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".RegistrationActivity"
            android:exported="false"
            android:label="RegistrationActivity"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".MainPage"
            android:exported="false"
            android:label="@string/title_activity_main_page"
            android:theme="@style/Theme.NewsHeadlines" />
        <activity
            android:name=".LoginActivity"
            android:exported="true"
            android:label="News Headlines"
            android:theme="@style/Theme.NewsHeadlines">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

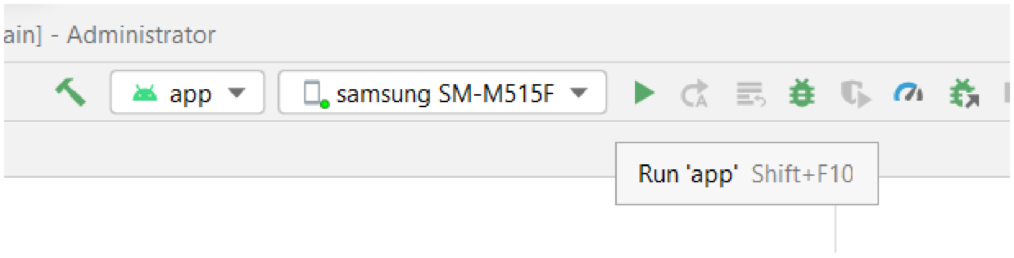
Complete code is given below:
https://github.com/smartinternz02/NewsHeadlines/blob/master/app/src/main/AndroidManifest.xml

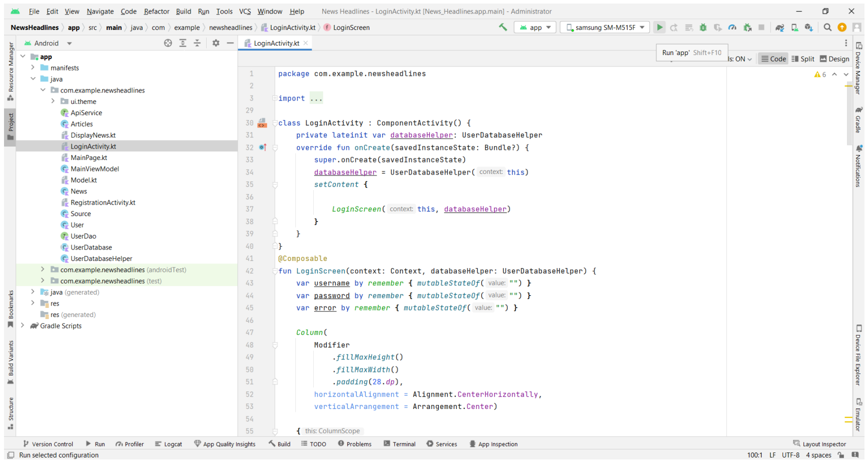
Task 9:

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



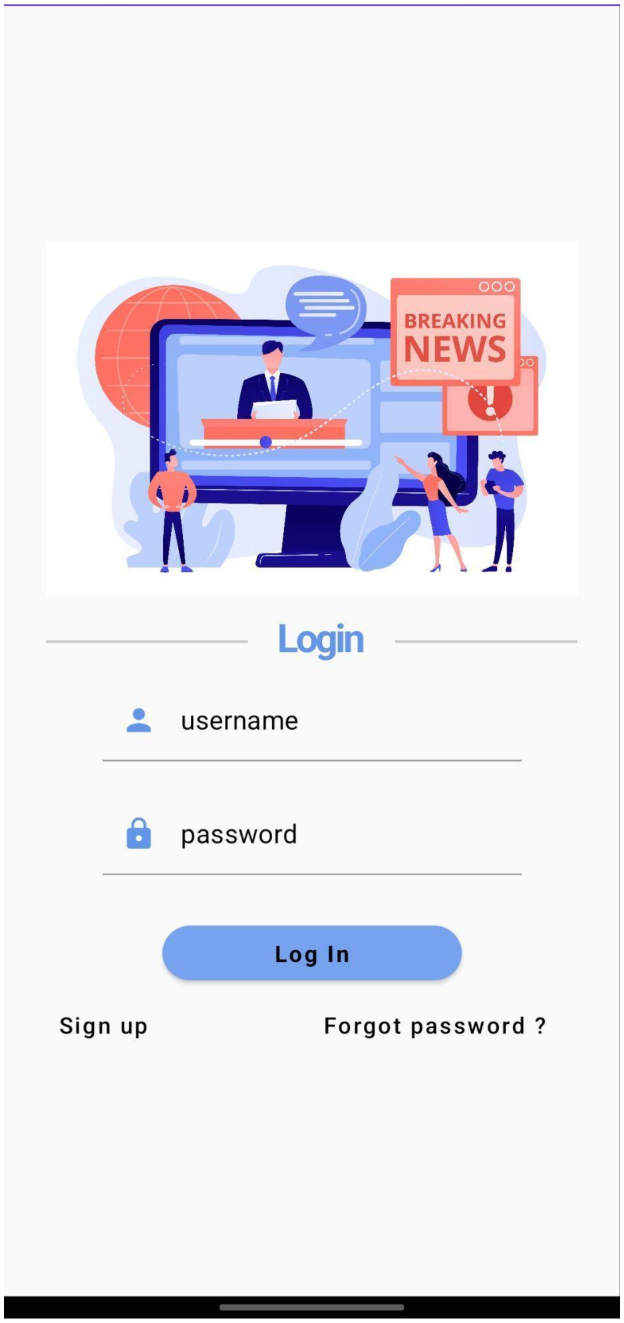


```kotlin
package com.example.newsheadlines

import ...

class LoginActivity : ComponentActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper( context: this)
        setContent {

            LoginScreen( context: this, databaseHelper)
        }
    }
}
@Composable
fun LoginScreen(context: Context, databaseHelper: UserDatabaseHelper) {
    var username by remember { mutableStateOf( value: "") }
    var password by remember { mutableStateOf( value: "") }
    var error by remember { mutableStateOf( value: "") }

    Column(
        Modifier
            .fillMaxHeight()
            .fillMaxWidth()
            .padding(28.dp),
        horizontalAlignment = Alignment.CenterHorizontally,
        verticalArrangement = Arrangement.Center)

    {  this: ColumnScope
```

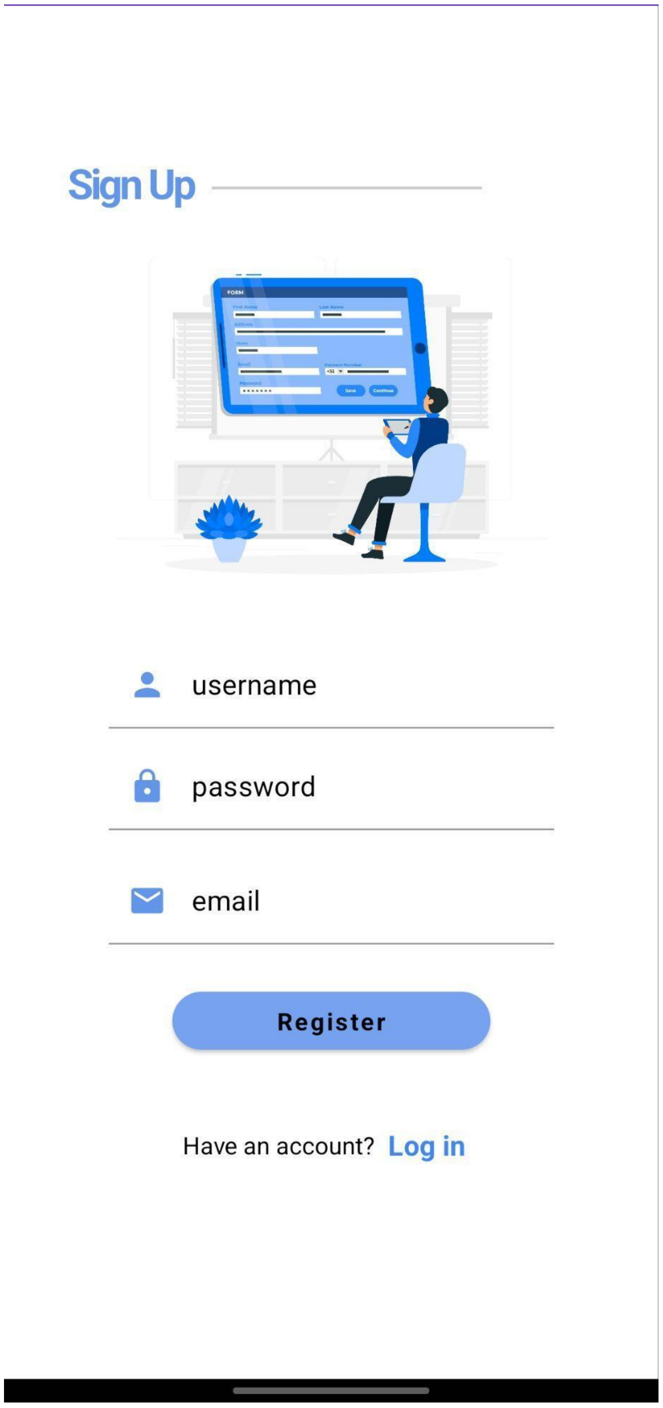
Complete Project Link:
https://github.com/smartinternz02/NewsHeadlines

Final Output of the Application :

Login Page:



Register Page :



Sign Up

username

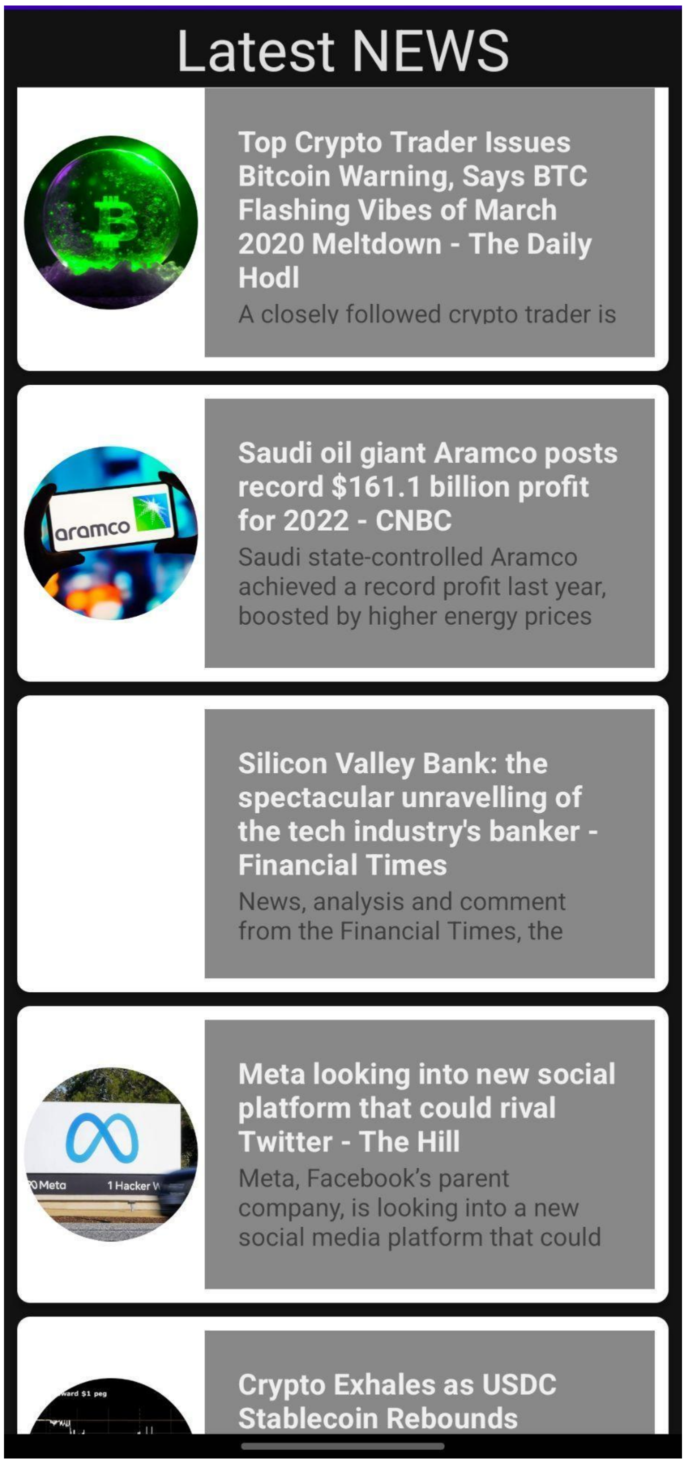
password

email

Register

Have an account? Log in

Main News Headlines Page :



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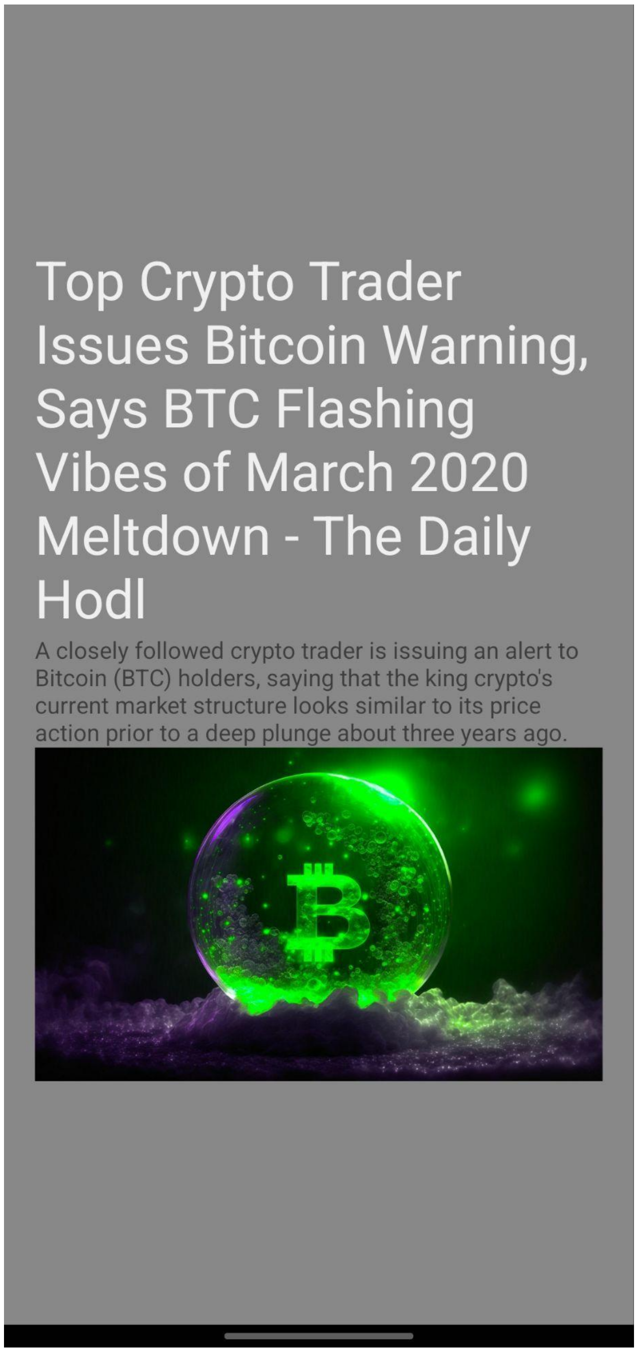
News, analysis and comment from the Financial Times, the

Meta looking into new social platform that could rival Twitter - The Hill
Meta, Facebook's parent company, is looking into a new social media platform that could

Crypto Exhales as USDC Stablecoin Rebounds

Display News Page :



Top Crypto Trader Issues Bitcoin Warning, Says BTC Flashing Vibes of March 2020 Meltdown - The Daily Hodl

A closely followed crypto trader is issuing an alert to Bitcoin (BTC) holders, saying that the king crypto's current market structure looks similar to its price action prior to a deep plunge about three years ago.