Android Tutorial

Topic : Implementing video streaming in Android using the Exoplayer Library

Team Members:

1. Tahsin Ahmed (3)
2. Abdullah Ashik (32)
3. Mahfuzul Islam Shawon (35)

Project Name: Green Academy
Team Name: DU_Titans

Introduction:

ExoPlayer is a powerful and flexible media player library developed by Google that is specifically designed for Android applications. It offers a robust framework for playing audio and video content in Android apps, making it an essential tool for developers who want to create rich and immersive media experiences. Whether you're building a video streaming app, a music player, or any application that involves multimedia playback, ExoPlayer provides the necessary tools to handle media playback efficiently and effectively.

ExoPlayer is a significant improvement over Android's built-in MediaPlayer, as it offers several key advantages:

Modular and Customizable: ExoPlayer is designed as a modular library, allowing you to include only the components you need. This makes it highly customizable and adaptable to various use cases.

Support for Various Media Formats: It supports a wide range of media formats, including adaptive streaming protocols like DASH (Dynamic Adaptive Streaming over HTTP) and HLS (HTTP Live Streaming). This ensures compatibility with a broad spectrum of media sources and streaming services.

Seamless Adaptive Streaming: ExoPlayer can efficiently handle adaptive streaming, which automatically adjusts the video quality based on network conditions. This ensures a smooth and uninterrupted playback experience, even on variable internet connections.

Subtitle and Audio Track Support: ExoPlayer enables you to add subtitles and select from multiple audio tracks, making it suitable for internationalization and accessibility.
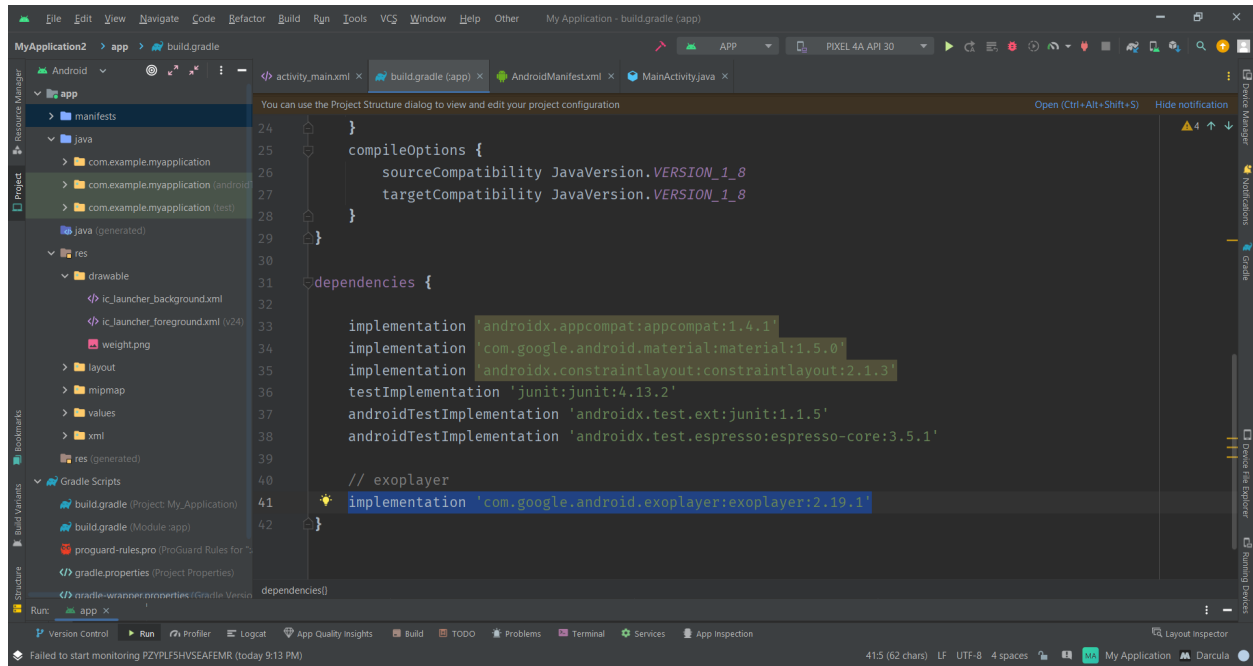
Extensive Control: Developers can gain precise control over media playback, such as seeking, buffering, and playback speed adjustments. This level of control is crucial when building feature-rich media apps.

Integration with MediaDRM: ExoPlayer integrates seamlessly with Android's MediaDRM framework, ensuring that your content is protected and secure.

Now we have to open a new project in android studio.

Add Dependency:

Have to go in build.gradle(:app) in project then set up exoplayer dependency.You have to add
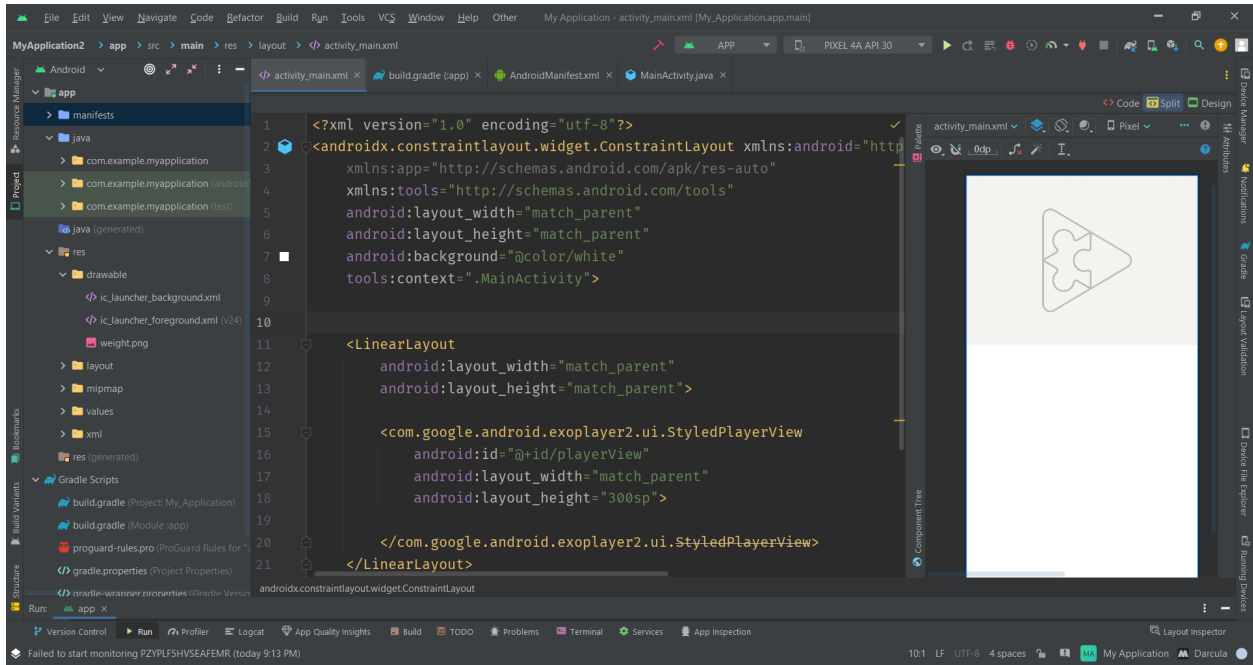The latest version of exoplayer.If not then your app might be crashed.

Design xml:

Go to your xml file and design as you wish.Here is a sample of designing your xml file
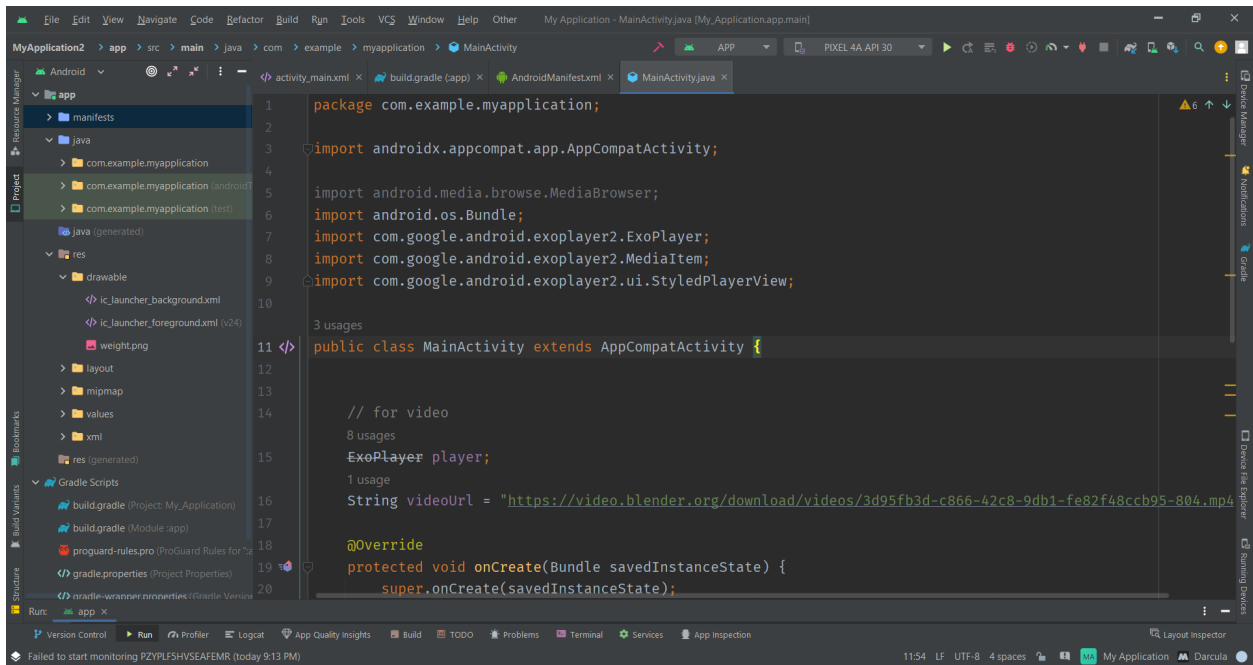But you have to use this part surely

```
<com.google.android.exoplayer2.ui.StyledPlayerView
</com.google.android.exoplayer2.ui.StyledPlayerView>
```

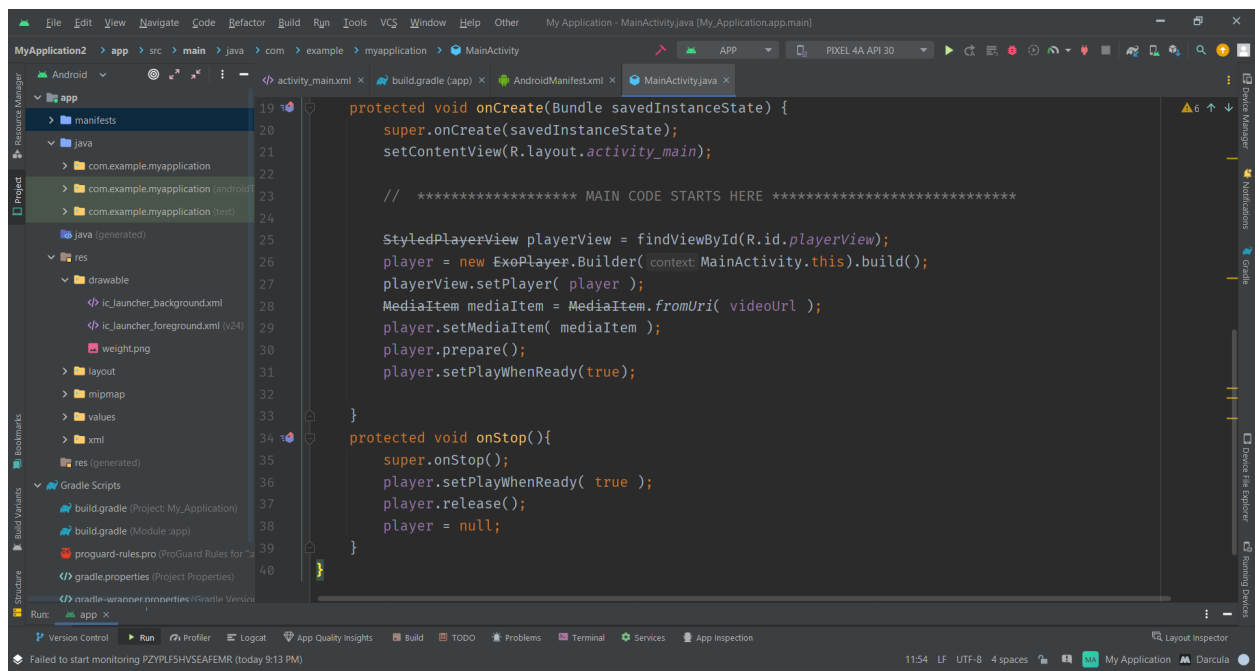Don't be panic that last StyledPlayerView is crossed

Java code:

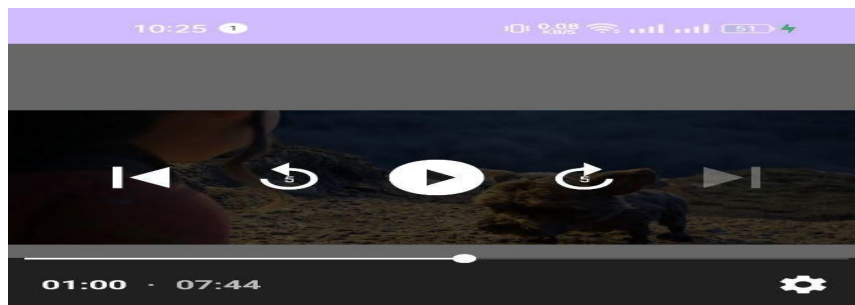Now go to your MainActivity.Java and code for playing video using exoplayer

You have to notice the videoUrl extension.Otherwise the video won't be paly.

```java
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    //  ****************** MAIN CODE STARTS HERE ******************************

    StyledPlayerView playerView = findViewById(R.id.playerView);
    player = new ExoPlayer.Builder( context: MainActivity.this).build();
    playerView.setPlayer( player );
    MediaItem mediaItem = MediaItem.fromUri( videoUrl );
    player.setMediaItem( mediaItem );
    player.prepare();
    player.setPlayWhenReady(true);

}
protected void onStop(){
    super.onStop();
    player.setPlayWhenReady( true );
    player.release();
    player = null;
}
```

You have to use mediaItem cause it will help to stop , start the video.

Output:

And finally this is our output

Github Link:

https://github.com/ash-2732/AndroidTutorial.git

Youtube Link: You can follow this tutorial

https://youtu.be/_ttcR7VDouE?si=_nSQhNB1JZybeqv8