

## YouTube Video Player in Android

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### Objective:

Implement an Android application that integrates a YouTube video player and allows users to play YouTube videos.

### Instructions:

1. Create a new Android project in Android Studio.
2. Add the necessary dependencies to your project to use the YouTube Android Player API.
3. Obtain a YouTube API key from the Google Developers Console.
4. Modify the layout file "activity\_main.xml" to include a `YouTubePlayerView` element to display the YouTube video player.
5. In the `MainActivity` class, initialize the `YouTubePlayerView` element using `findViewById()`.
6. Implement functionality to play YouTube videos:
  - a. Initialize the `YouTubePlayerSupportFragment` or `YouTubePlayerFragment` within the `MainActivity`.
  - b. Retrieve the `YouTubePlayer` instance from the `YouTubePlayerView`.
  - c. Set a `YouTubePlayer.OnInitializedListener` to handle the initialization of the `YouTubePlayer` instance.
  - d. Implement the `onInitializationSuccess()` method to handle the successful initialization of the `YouTubePlayer`.
  - e. In the `onInitializationSuccess()` method, load and play a YouTube video using the `loadVideo()` method, providing the video ID.
7. Run the application on an emulator or a physical device and verify that YouTube videos can be played within the application.

### Additional Tasks (Optional):

1. Enhance the user interface by adding additional elements, such as a search bar to search for YouTube videos or playback controls (play, pause, stop, etc.).
2. Implement error handling for scenarios such as failed initialization or loading of YouTube videos.

3. Implement additional functionality, such as playing playlists or controlling video playback programmatically (e.g., seeking to a specific time).

**Note:**

Include the codes written by you for this assignment in your submission document.

Remember to adhere to best practices, such as using proper naming conventions, adding comments when necessary, and organizing your code effectively.