

# CS478: Software Development for Mobile Platforms

## Project #2

Due time: 11:59 pm on 2/28/2021

Submit using Blackboard web site

*Total points: 100*

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For this project you will design and code a new Android app that implements the following functionality. The main activity in the app displays a collection of songs from various artists. The collection is organized either as a list or as a 2-column grid, depending on the user's preference. The display of each song consists of two items, a thumbnail picture of the song's album cover and text giving the song's title and singer (either a solo artist or a band).

When the user clicks on a song item, the main activity is stopped, and a browser window is displayed instead. The browser window shows a page with a publicly available video segment playing the song. By clicking a play button on the page, the device user can watch the video and listen to the song. A user would return to the main activity by pressing the device's "back" soft key, for instance, when the video clip is complete.

The main activity of the app must support an "option menu" with two options allowing the user to select between viewing the songs as a list and as a grid. Selecting one of the two views has no effect if that view is already shown in the activity. However, if the other view is selected, the current display is reconfigured according to the user's choice.

In addition, each song item should support "long click" functionality. A long click on any list item will bring up a "context menu" showing the following three options for the song under consideration: (1) View the video clip (similar to a simple click); (2) View a browser's page with the song's wikipedia page; and (3) View a browser's page with the artist (or band) wikipedia page.

The design of your project is subject to the following main constraints.

1. Each song item in the list or grid should display the same 3 items: (1) a thumbnail image of the video clip associated with the item, (2) the title of the song, and (3) the artist or band singing the song. The image should appear on the left-hand side of the item, be centered vertically and have roughly a square shape. The title of the song and artist (or band) should appear to the right of the thumbnail, with the title of the song above the artist (or band) name. The name of the the song should use a larger font than the artist's or band's name. The latter name must be italicized.
2. You must use Android's *RecyclerView* to implement the list and the grid. Switch between the list and the grid display by changing the *LayoutManager* associated with the *RecyclerView*. You may use predefined Android layout managers in the *RecyclerView*.
3. When launching the browser activity, your app should use the OS to find an appropriate browser, rather than choosing a specific browser hard-wired in your app.
4. Use a publicly available web site to play the song. Here is an example of a song by a band: (1) Comfortably numb, (2) Pink Floyd, (3) <https://www.youtube.com/watch?v=hiUHoABnhME>. Here is an artist's song: (1) Misirlou, (2) Dick Dale, (3) [https://www.youtube.com/watch?v=IRH\\_70\\_Foow](https://www.youtube.com/watch?v=IRH_70_Foow).

5. You should open the wikipedia pages in a way similar to the video clip, that is, using any available browser on your device, rather than a specific browser.
6. The collection of songs should contain no less than six items. When displayed as a list, the list should be long enough to exceed the height of a Pixel 3 XL display, thereby requiring the use of a vertical scrollbar in order for the user to view all the items.

**Implementation notes.** For this project use a Pixel 3 XL device running the usual Android platform (API 30—Android 11). Design your list view in such a way that it will display optimally in portrait mode, and reasonably well also in landscape mode. You are not required to provide backward compatibility with previous Android versions.

*You must work alone on this project.* Submit the entire Studio project as a zip archive using the submission link in the assignment's page on Blackboard. No late submissions will be accepted.