

CS478: Software Development for Mobile Platforms

Project #2

Due time: 11:59 pm Central time on 2/27/2022

Submit using Blackboard web site

Total points: 100

Instructor: Ugo Buy

TAs: Sampath Gottikere Kumaraiah, Shahmeer Ahmed, Garima Chaudhary and Yash Kurkure

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Design and code an Android app that displays information about wild animals . The app's main activity displays a grid whose cells contain a thumbnail picture of an animal above the name of the animal. For instance, a grid cell could contain a thumbnail showing a lion, above the name "Lion". Feel free to choose your images from pictures publicly-available (and not copyrighted or otherwise protected) on the Internet. Also, feel free to choose how to fit the pictures into thumbnails appearing in your grid view (e.g. whether to scale the picture or not, etc.) Make sure that thumbnails are separated by thin spaces (no more than 5 dp) uniformly on all four sides when the grid is displayed on a Pixel 3a XL device. Also, size the thumbnails appropriately, e.g., using 2 or 3 columns in portrait mode. You must include enough thumbnails to fill at least most of a Pixel's display with your picture grid (i.e., at least 8 cells if using two columns).

The grid cells should use a uniform format, with identical size and identical height allocated to the thumbnail picture and the text below. The pictures displayed in the grid cells should keep the same aspect ratio as the original publicly-available picture. The text in the cells should fit in one or two lines and be aligned in the center of the grid cell, both horizontally and vertically.

Each grid cell supports two kinds of functionality, depending on whether an app viewer performs a short vs. a long click on the cell. A short click brings up a new activity that shows a big picture of the selected animal on the entire device display. This picture must be a higher resolution and bigger than the thumbnail displayed earlier. The user can return to the grid view by selecting the "back" soft button on the phone. If, instead, a user clicks anywhere on the displayed picture, you must open a third activity with interesting facts about the selected animal, e.g., the average ranges for the lifespan and weight of the animal, the preferred habitat of the animal (e.g., grasslands and savannas), the feeding habits of the animal, and whether the animal belongs to an endangered species.

A long click on a grid cell of the main activity brings up a "context menu" showing the following three options for the animal under consideration: (1) View the entire picture (similar to a short click); (2) Show the interesting facts about the animal; and (3) go to the wikipedia page for the animal.

Implementation notes. For this project, use a Pixel 3a XL device running Android R (API level 30). Design your gridview in such a way that it will display optimally in portrait mode, and reasonably well also in landscape mode. (Bigger gaps between grid elements will be OK in landscape mode.) You are not required to provide backward compatibility with previous Android versions or compatibility with other Android devices.

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. This archive should contain the apk executable that you generated when you tested your app on your Pixel 3a XL AVD. Also, make sure to include your first and last names in the manifest file of your app, perhaps as an XML comment. No late submissions will be accepted.