KARL HARVEY

KITTEN GALLERY

Introduction

Kitten Gallery is an Android application built using the open source Glide framework, written in Java. The application uses the Glide framework [1] to display images of cats, using URLs from the Place Kitten [6] service.

Setting up the project

A new project was created with a blank activity in Android Studio, with a target SDK of 23 and a minimum SDK of 19. Ideally, the target SDK would be version 27, as Oreo this is currently the most used version of Android [3]. This could not be achieved in this project due to hardware limitations.

Building version 1.0 of the Gallery

The first iteration of the application consisted of a TextView which served as the header of the application, and six ImageView objects, into which cat images were loaded. These were created using XML in the main_activity.xml layout. The string values for the TextView and the application itself were set in the strings.xml file, in the “values” folder. The application’s icon was created, and added into the mipmap folder.

In order to add Glide functionality to the project, internet permissions were set in the manifest file, and the following code snippet was added to the dependencies section of the application’s build.gradle file:

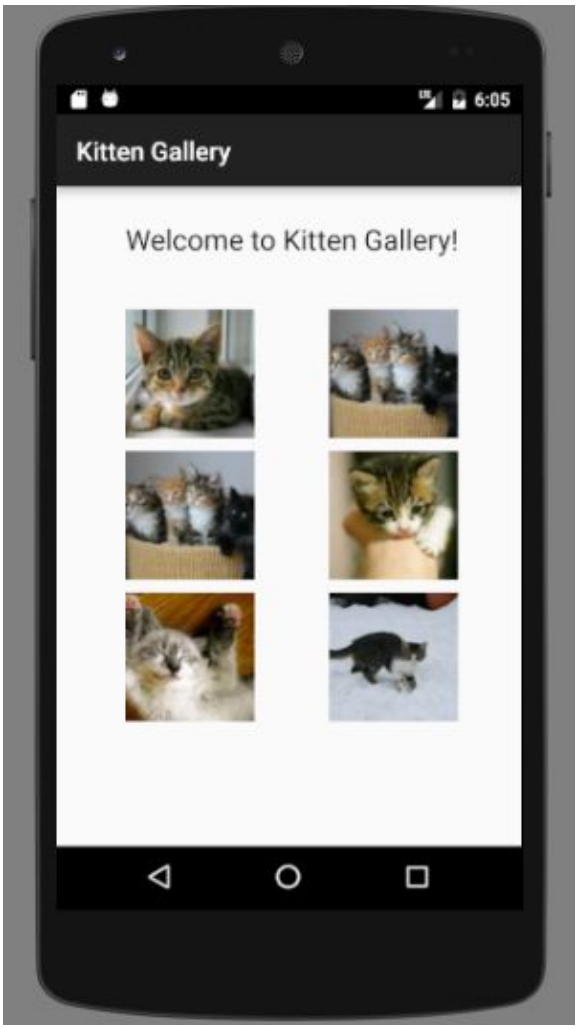
```
compile 'com.github.bumptech.glide:glide:3.8.0'
```

The next step involved creating six empty ImageView objects, and six private String variables to contain the URLs which will be used to retrieve the cat images. The appropriate view IDs and imageView names were changed, as well as the URLs. After this, each empty ImageView object was assigned code to create a simple view using the sample code found below.

```
    ImageView imageView = (ImageView) findViewById(R.id.my_image_view);

    Glide.with(this).load("http://goo.gl/gEgYUd").into(imageView);
}
```

The Android Virtual Device used to run the application is a Nexus 5, with Android Marshmallow, API 23, with x86 system image. When run using this AVD, the application appeared as shown in the image below:



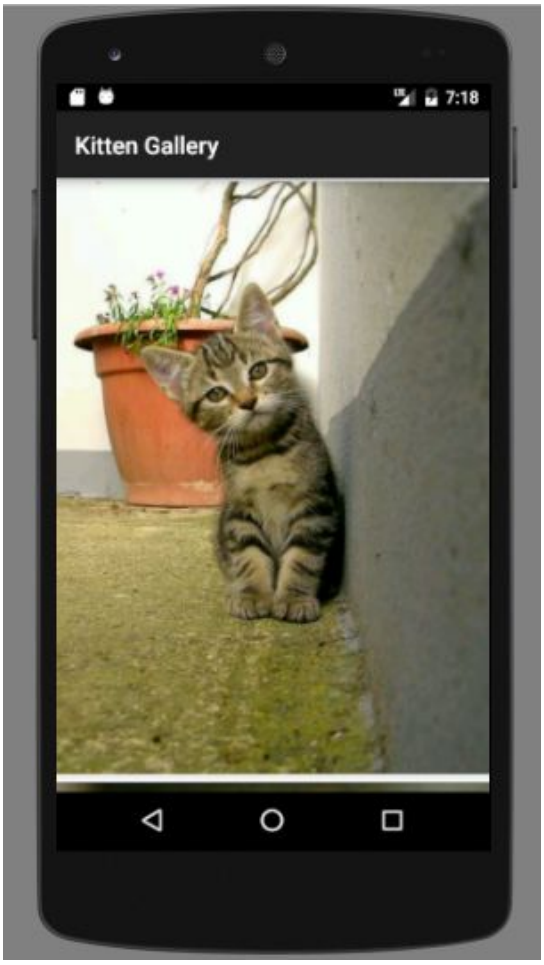
Building version 2.0 of the Gallery

I knew changes needed to be made to create a more efficient gallery, especially when it came to how the URLs were being stored and accessed. Instead of using separate ImageView objects to contain the pictures, I found a tutorial that instead used a ListView. Also, instead of having separate URLs within their own variable, they were put inside of an array [5].

The code for the ListView was written in the MainActivity. This code consisted of the array of image URLs to be used, code to get the ListView layout, and code to associate the array of URLs with the adapter class.

In the SimpleImageListAdapter, the context is set up to provide access to the resources from the MainActivity. The listview_image layout is used to hold the images within the activity_listview layout. LayoutInflater is used to instantiate layout XML file into its corresponding view object. Inflater is used to render the images by creating view objects in memory. The Adapter uses convertView as a way of recycling old View objects that are no longer being used.

When run on the AVD, the application appears as shown below, with the user being able to scroll vertically in order to see more images:



References

1. https://github.com/bumptech/glide
2. https://www.youtube.com/watch?v=fxSSgyl0m5k
3. https://www.youtube.com/watch?v=xMyfY02Bs_M
4. https://developer.android.com/about/dashboards
5. https://www.youtube.com/watch?v=xMyfY02Bs_M
6. https://placekitten.com/