CS 371L: Bulko
Programming Assignment 10
Photo Collection

Due Date: November 19, 11:59 pm

1 Problem Definition

In this assignment, you are going to create a Photo Collection app that manages photos added from either the system album or the camera. There will be two VCs: a Main VC which lists all the photos as shown in Fig. 1(a), and a Detail VC which presents one selected image as shown in Fig. 1(d).

In the Main VC, a Collection View is used to present all photos taken from the system album or the camera. The user is also able to select one image and view it in the Detail VC.

Note that to test the camera component, you need to use a real iPhone or iPad instead of a simulator. If you don’t have one, I have an iPad that you can try installing your app on. I will bring it to class, and also have it in my office if you want to drop by during office hours or any time I happen to be there.

2 Detailed Instructions

• Create a Single View application project named <lastName><firstName>-HW10.

• Main VC (Fig. 1(a)):
  – Embed in a navigation controller.
  – Add a Collection View and a custom Collection View Cell. The cell contains an Image View with content mode Aspect Fill. The Collection View works in a way very similar to the Table View, in that they both use delegate and datasource to populate the cells.
  – Programmatically make the Collection View Cell square, and automatically adjust the cell size such that we have 3 cells for each row. UICollectionViewDelegateFlowLayout should be helpful.
  – Add two bar button items. By clicking the left bar button, the user is able to add photos from the system album. By clicking the right bar button, the user is able to add photos from the camera. To implement this, UIImagePickerController should be helpful.
  – When selecting one image, it will segue into a Detail VC presenting the selected one. Pass the image using the prepare (for segue:) function.

• Detail VC (Fig. 1(d)):
  – Add an Image View with content mode Aspect Fit to the Detail VC and make it full screen.
  – Present the selected image in the image view.
2 DETAILED INSTRUCTIONS

(a) The Main VC.

(b) Select photos from the system album.

(c) Taking photos.

(d) The Detail VC.

Figure 1: Application demos
3 Grading criteria

1. The UI elements are defined in the storyboard. (10%)

2. The system album component works as expected. (20%)

3. The camera component works as expected. (20%)

4. The collection view presents all the photos. (20%)

5. The size of the collection cell can automatically adjusted to the screen size, so that we have 3 cells per row. (20%)

6. The detail VC works as expected. (10%)

7. **Note that if the app does not build and run, ZERO points will be given.**

8. The Coding Standard is followed. One point deducted for each violation.

4 General criteria

1. I will be looking for good documentation, descriptive variable names, clean logical structure, and adherence to all coding conventions expected of an experienced programmer, as well as those outlined in the Coding Standard document. There will be penalties for failure to meet these standards.

2. Your code must compile and run before submission.

3. Xcode will automatically generate standard headers to your .swift files. Add two lines to each Swift file that list your EID and the course number, so that the header looks like the following:
   ```
   //
   // Filename
   // LastnameFirstname-HW10
   // EID: xxxxxxx
   // Course: CS371L
   //
   // Created by xxxxxxx on x/xx/19.
   // Copyright 2019 xxxxxxx. All rights reserved.
   //
   ```