ITP-342
Final Project

Goal

- Create an iPhone or iPad app of your choice.
- App should demonstrate mastery of the concepts discussed in the course.
- App should include two items that are not covered in previous homework assignments.

Overview

For your final project, you will create an original app of your own design.

Your final app will be graded on the quality and completion of the code and how it fulfills the requirements. You will demonstrate the app (individually) during the final exam time scheduled for the class or at an agreed-upon time before the exam time.

Requirements for App

- Your app must be written in **Swift**.
- Your app must have **@2x** and **@3x** versions of the app icon and follow the appropriate guidelines.
- The images for your app must be in **Assets.xcassets** with at least **@2x** and **@3x** versions
- Your app must use a **storyboard**
- Your app must contain least **4 Content View Controllers** and each one has a corresponding class. A `TabBarController` or a `NavigationController` does not count.
- Your app must use the **delegation design pattern** that uses a data source or delegate (such as `CollectionView` or `TableView`).
- Your app must use the **MVC design pattern**. Data should be in a model class (or classes). If you need to share the data across controllers, use a **singleton**.
- Your app must implement **persistent storage**
- Your app must use **2 third party APIs / Frameworks**. Examples include:
  - Firebase
  - Google Maps
  - Google Places
  - Sign in with Google
  - Realm

  - Facebook
  - Twitter
  - Instagram
  - Yelp
  - Ticketmaster
  - Spotify
  - OpenWeather
  - Dialogflow

- Your app must use **2 Apple Frameworks**. Examples include:
  - ARKit
  - CloudKit
  - Contacts
  - UIKit (only components not covered in homework)
  - Core Location and MapKit (counts as one)
  - Core ML
  - EventKit
  - HomeKit
  - HealthKit
  - Localization and Internationalization (counts as one)
  - Messages
  - PassKit
  - PDFKit
  - PhotoKit
  - SiriKit
  - Social
  - Speech
  - StoreKit

- **Complexity** of Apple framework / third party API integration will be considered in grading
- If you want to implement an Apple framework / third Party API that isn't listed, it needs to be approved during the App Proposal
- Your user interface should follow good design principles and the **HIG**.
- Your app must be well commented, having a least a comment per method
- Your app has to compile and run in order to be graded.
- Comment your code. Include your name and email at the top of your files.
- If your app requires a physical device, please indicate this in your submission.

- Compress your project to create a zip file and submit it on Blackboard.

Extra Credit (up to 20 pts)

- You have the opportunity to earn extra credit on your final project by going above and beyond the requirements.
- Extra credit ideas should be approved during App proposal period
- Some examples:
  - Properly supporting iPad layout using size classes
  - Use Mac Catalyst to make your iPad app support Mac
  - Implement a custom nib and reusing it across view controllers
  - Implementing an `IBDesignable`
  - Implementing SwiftUI
  - An additional third-party API / Apple Framework

Final App Submission

- Zip your source code and submit your final app on Blackboard. We cannot grade your app without your submission. If you do not submit, then you will receive a 0.
- During the scheduled final exam time for the class or another agreed-upon time, compile and run your app in front of the instructor or one of the TAs. You will also need to show your code and answer questions.
- If you are unable to demo your app in person, then you must make a video of your demoing your app and explaining what you did. Upload your video to YouTube (or another platform) and post the link in the comments section of the submission on Blackboard. Answer or explain the following:
  - Build and run the app showing all of the screens and functionality.
  - What APIs/SDKs did you use and how?
  - What Apple Frameworks did you use and how?
  - Describe how and where you used the delegate pattern.
  - What is MVC and how are you using it?
  - Show the storyboard and explain one type of segue and how you passed data between the view controllers. Show the 4 View Controllers that have corresponding classes.
  - Describe how you used persistent storage.
  - Show the home screen (Simulator or device) in order to see the app icon and name.
  - Show the assets to see multiple versions of your App Icon and other images.

- Demonstrate app showing off user interface, flow, and how you followed Apple's Human Interface Guidelines.
- Show your comments in your Swift files.
- Show your overall project organization.

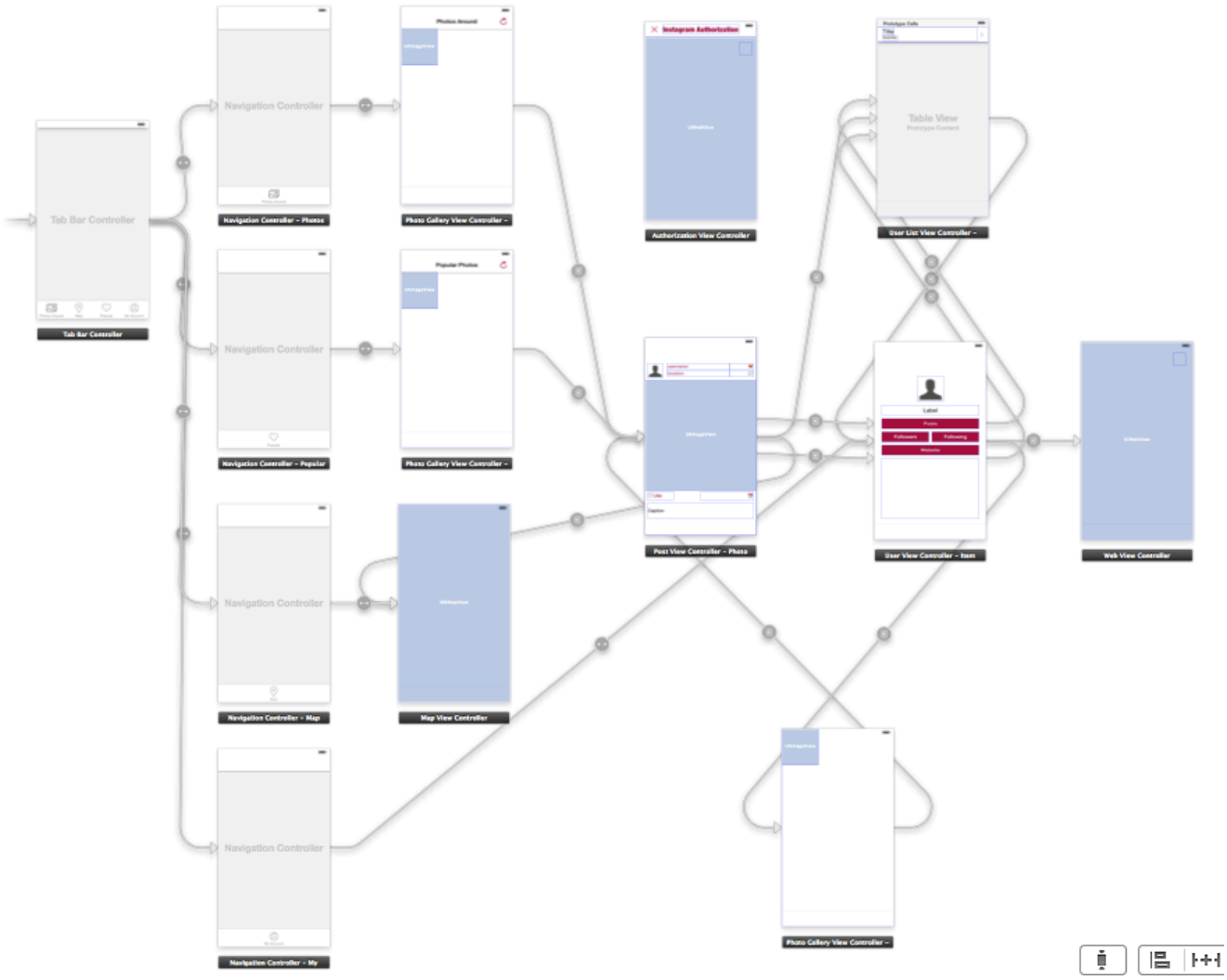
Grading Final App – 100 pts, 35% of overall grade
The official rubric will be posted on Blackboard under Assignments.

- APIs/SDKs with difficulty – 25 pts
- Apple Frameworks with difficulty – 25 pts
- Design Patters (Delegation and MVC) – 10 pts
- Storyboard, Constraints, and View Controllers – 15 pts
- Persistent Storage – 10 pts
- Images, app icon, and app name – 5 pts
- Flow of app and HIG – 5 pts
- Project Organization, comments, and coding style – 5 pts

If the project has warnings, errors or does not compile, penalties will apply.
If the project barely works or has features not implemented that contribute to the above rubric items, penalties will apply.

Example – Photos Around

Storyboard



Example – Photos Around