

Instagram: Building a complete app, User Documents, Integration

Due: December 7th, 2015. 9:00 AM

Group size: 2

Description

In this assignment, you will develop a replica of the famous Instagram app. In the previous assignment you had to make some design decisions; in this assignment you will analyze the design decisions of Instagram developers.

Task

Part 1: Analyze Instagram UI

Instagram provides different views and functionality. In this assignment we are interested in the home view, the user profile view, and the camera view. See the screen shots below.

Assume that your user is already logged in. Your user should be able to take a new photo, post it, comment on and like photos of others, and do all the actions in the screen shots below that are not highlighted in red. Your user will be following 2 and have 2 followers at least.

Your app will run offline independent of internet connection. The followers' posts will be read from a file.

Inspect and sketch the UI elements that make up the views of interest. Interact with all the controls to see how the UI behaves, e.g., a modal view appears or an alert view disappears with animation. Label the main frameworks and view controllers associated with each active UI element e.g., UIImagePickerController, UIDocumentInteractionController. When you start developing your app you might find that a UI element is not what you expected initially. Try to figure out why Instagram developers made some design decisions, and what alternatives are there.

Describe and justify the main UI decisions in your app in 1 page in UI analysis.pdf. (You can include sketches or snap shots.)

❑ UI analysis.pdf

Part2: Object modeling (see [definition](#))

Now that you have a rough idea of the views that you will need in your app, it's time to develop the app data model. What objects do you need to represent the data in each of the views of interest.

Specify the data model, classes/structs, attributes and enums, in Object model.pdf. (You can choose any specification/modeling language as long as you are clear.)

❑ Object model.pdf

Part3: Prepare sample data

Many apps provide users with sample data when they first launch the app. In an Instagram app that data will include one post that appears in the home view from the user “InstagramDeveloper” and a sample photo and text. Because we will not get more data from the server and we do not have real friends in the app, your sample file should include 2 friends each with 2 posts at least.

Sample data is bundled with the app. At first launch copy the data to user documents since you will need to modify it, e.g., when your user makes a comment or likes one of the friends posts. Also make sure that the sample data doesn't get added to the home view at every launch, i.e., the posts should appear always at the top of the home view based on post time.

Part4: Build the UI

Your task is to mimic the original Instagram as much as possible (look and feel including color scheme and font style). Any deviation should be explained in UI analysis.pdf. In the attached screen shots you are not required to develop the items highlighted in red, but feel free to do so.

In the home view:

Include all UI elements for each post except for the location and people tags. Allow commenting. Make the name of the posting person link to their profile view. No need to implement the SEND TO view.

Challenge yourself: support location tag.

In the user profile view:

Allow the user to change profile picture using only image picker (no need to import from social media). Allow the user to EDIT PROFILE. No need to implement the refresh or settings button the appear in there right corner of this view.

In the camera view:

You can choose to use the basic UI from the image picker controller and not the custom UI in the original Instagram app.

Challenge yourself: embed the camera view in a similar UI as the original app.

Support all image and video sources.

Challenge yourself: put a limit on the video length and notify the user properly.

Challenge yourself: add >3 image filters with basic apply/don't apply functionality (Hint: use Core Image). You do not have to add the additional image editing features, e.g., brightness and settings.

In the Share to view you only need to implement the Followers view with image thumbnail and caption text field only.

Challenge yourself: Implement the Add Location feature.

Your app should have a consistent UI on all iPhone devices, portrait orientation.

Include an app icon.

Include a launch image.

Part5: Serialize and archive your data

Your app should keep the user data in the device memory. In the original app, the data is stored in a remote server. Turn on airplane mode on your device and see how you can still see about 10 posts, but you cannot load more without a connection. These posts are stored in the user cache. For our purpose, store all the data of the app in user documents.

Part 6: Optimise your code

Your UI should be responsive. Read “[Asynchronous Design Techniques](#)” in order to spot where you should work on background threads (if needed).

Part7: Challenge yourself

Implement the features highlighted in red in the screen shots below.

Submission

Create a zip archive including the following items

- ☐ UI analysis.pdf
- ☐ Object model.pdf
- ☐ Instagram xcode project
- ☐ Members.txt — (Only for new teams)
- ☐ (optional) addendum.pdf 1-page of anything further than the required submission

Email your submission to hamdan@cs.rwth-aachen.de with subject [iPhone 2015] A05 submission

Grading

We will grade this assignments using the following questions.

- Is the app is working as expected in all simulations (without warning or errors)?
- Is the app responsive?
- Is the structure of the app following MVC correctly?
- Is the app handling all errors correctly?
- Are all the required features implemented?
- Is the data stored and retrieved correctly and without blocking the UI?
- Is the implementation modular (use function for concrete tasks instead of a code jam)?

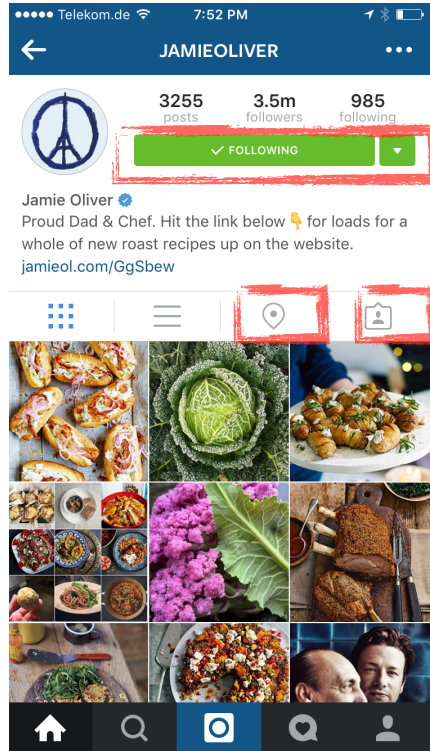
★ 1.0 — Accomplish at least 3 “challenge yourself” tasks. Your design should clearly show that you went above and beyond what was given in the assignment sheet by improving usability, features, or performance of the implementation.

Incomplete submission will receive at maximum 2.3.

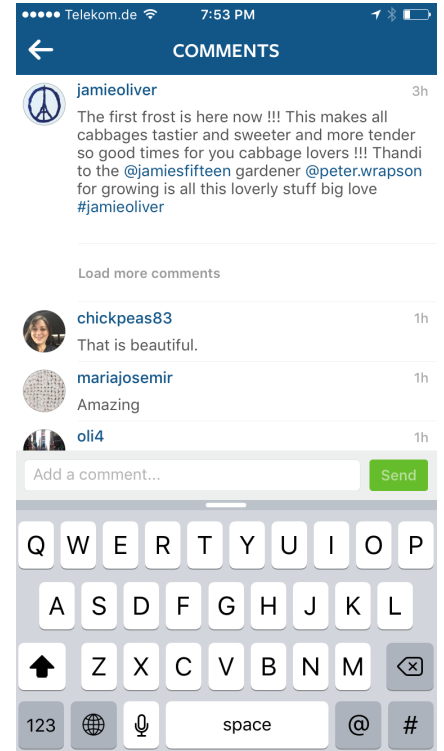
Late submissions *will not be graded*.



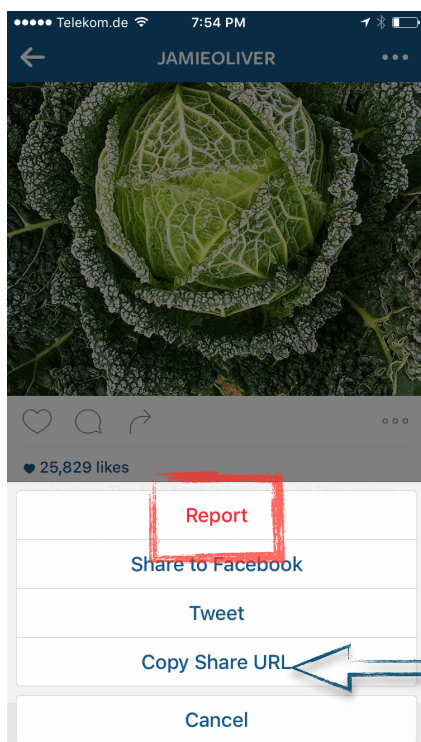
Home view



User profile view



Comments



Replace with
copy file path

