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Submission Method: Canvas
Score: 15%

Milestone 4: Putting it All Together
ECS 165A - Winter 2019

In the third milestone assignment, you gained a working knowledge of how to add functionalities to a basic mobile app. You were expected to develop functionalities such as creating/retrieving posts and performing a basic search based on username. Building upon the last milestone, the main objective of this phase is the ability to provide more features to your basic app. You need to create at least two new features to further enhance your app, of course, you are not limited to these suggestions and any other creative ideas are welcome and encouraged. **(S1)** Search posts using hashtags, **(S2)** Send notifications on key events (like when someone follows you or someone likes your post) **(S3)** Putting it all together and showing a demo, ideally between two mobile devices if possible.

Think Long-term, Plan Carefully.
Be curious, Be creative!

(S1) Search posts using hashtags:

The goal of this stage is to set up a feature to search a post by its hashtag. There are two parts to this stage. Initially, you need to have a logic to store all the hashtags associated with a post. Secondly, you will need to decide and implement the search feature along with ranking and organizing the search results.

Optionally, you can also implement trending hashtags based on the frequency of each hashtag.

Here are some useful sources:

1. Implement Hashtag mentions: An article describing an implementation of Hashtags in Android.
2. Structure DB for Social Apps: An article describing the structure of DB for Hashtags.
3. Rethinking Hashtags: An article describing an alternate approach to Hashtags implementations.
4. Implementing Hashtags in Android: An article describing an implementation of hashtags in an Android app.

(S2) Sending notifications on key events:

One of the main features for any mobile app is to notify the user regarding various events. This is a crucial part of the app's engagement. In this stage, you will be implementing notifications related to key events such as when getting a new follower or when a person likes your post.

Here are some useful articles:

1. Push notifications in react-native: An article describing an implementation of push-notifications.
2. A Complete guide on push-notifications: An article describing an implementation of push-notifications in IOS.
3. React-native push notifications: A review of an implementation of react-native push notifications.
4. React-native Documentation: The official documentation for react-native push notifications.
5. React-Native push notifications with sound: An article describing an implementation of push-notifications with sounds.

(S3) Putting it all together:

We have observed a wide gap between your UI/UX designs and your actual app implementation. You can use this stage to bridge this gap and make your app as identical as your high-fidelity wireframe designs. Also, you will be using this stage to deploy your app on multiple mobile devices (if possible) and make sure various features work as expected. Optionally, you may consider the following additional functionalities:

1. Suggest top posts based on top hashtags.
2. Suggest users to follow others based on the social graph.
3. Optimize and customize feed based on interactions between users.
4. Private messaging.

Here are some useful articles associated with deploying applications to devices:

1. Running on Device: Official documentation by React Native on how to run the app on the mobile device.
2. Running your app on iPhone: An article describing steps to deploy a reactive native app on iPhone.
3. Creating a signed APK for Android: The documentation on creating a signed APK for android.
4. Deploy react native app: An article on deploying react-native applications.

Milestone Deliverables/Grading Scheme: What to submit?

At the end of this milestone, each team needs to prepare a presentation that concisely summarizes achievements of the milestone. Your presentation at the minimum must include the following:

1. The detailed design and justification of how you store hashtags. For example, the workflow (steps taken) of how a hashtag is created and the logic when hashtags are searched.
2. The workflow of the notification feature and the list of key events when notifications are triggered.
3. A side-by-side comparison of your UX/UI designs in Milestone 2 with the screenshots of the actual implementation.
4. The future work of your app. The list of features you wish to add.
5. The live demo presentation. An example of a live demo flow could be (you are not limited to this flow):
   Login as User Bob on Mobile Device 1 → Login as User Alice on Mobile Device 2 → Search User Bob and Follow Bob → Go to Bob's account Create a Post P → Update the Post P with a Hashtag → Go to Alice's Account and Like/comment the post of Bob created in the above step.

In your submission, please also include the screen recording of your planned demo (for offline viewing). Also, you will need to submit **the presentation slides in .pptx, .key, or .pdf format, the screen recording of your live demo by the due date.** The submission is done through Canvas, and only one group member must submit the package on behalf of the entire group.

If you had any major changes to your initial proposed approach, make sure you describe the changes and include the justification for the change.

The actual presentation and evaluation will be scheduled after the milestone due date. Each group will be assigned a dedicated 15-minute timeslot. The presentation must be completed strictly in 10 minutes (no extra time would be granted) followed by a 5-minute Q&A. In Q&A, each team member will be asked questions related to any part of the milestone to ensure every student's participation and understanding of the whole assignment. Groups with five members will receive an 18-minute time slot.

During the 10-minute presentation, each student must present their respective parts, e.g., each team member would take up one milestone and they would focus on the tier

of the app they are leading (e.g., front-end, app logic, data model, or backend database).

Important Note: The presentation slides, the live demo, screen recording must be identical to the materials submitted by the milestone due date.

As noted in the course syllabus, for each milestone, a portion of the grade is devoted to the presented project as a whole on which all members receive the same grade (70% of the grade), but the remaining portion is individualized (30% of the grade), so for each milestone, not all group members may receive the same grade. In each milestone, **a bonus of up to 20% can be gained** to further encourage taking a risk, going the extra mile, and just to be curious & creative.

Late Policy
There will be a 10% penalty for each late day. After three late days, the homework will not be accepted.

Course Policy
In this class, we adopt the UC Davis Code of Academic Conduct available here.

Disclaimer
The external links and resources that are being provided on this handout serve merely as a convenience and for informational purposes only; they do not constitute an endorsement or an approval of their products, services, or opinions of the corporation or organization or individual. As a student, developer, or researcher, it is your sole responsibility to learn how to assess the accuracy and validity of any external site. This is a crucial skill in the age of the Internet, **where anyone can publish anything!**

Changelog:
Milestone Handout Version v1: February 27th, 2019 (initial posted version)