Capstone Stage 1

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GitNotify

Description

GitNotify is a simple GitHub client that shows you all the events you have received from projects that you follow or from companies that you are working for, making it really simple to manage all of yours GitHub activities, like commits, pull-requests, comments and issues. In a single dashboard you will be able to, for example, see details about the last pull-request your friend made to your open-source project, keep track of new issues found in your favorite library, or even read comments made on your last work.

Intended User

This app is intended for developers. More specifically, for GitHub users that are not satisfied with the client options already available in the Google Play Store. Especially because the company does not provide its own app.

Features

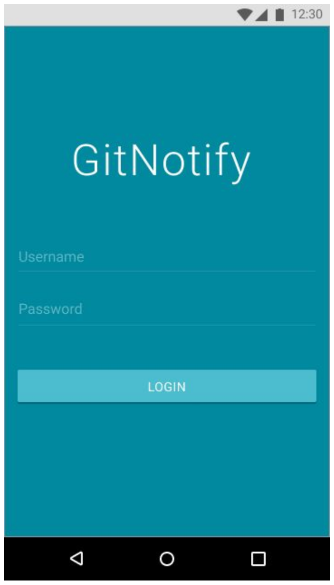
The main feature of this app is its ability to follow all the events happening in the user's GitHub account. Working as a dashboard, the user will be able to list events in a timeline format, with a simple way to change between visualizations, that are centered on the user or on the organizations that he is associated with. Each event will have a "detail" view, where the user will be able to see more information about it, for example, the latest commit, comment or pull-request.

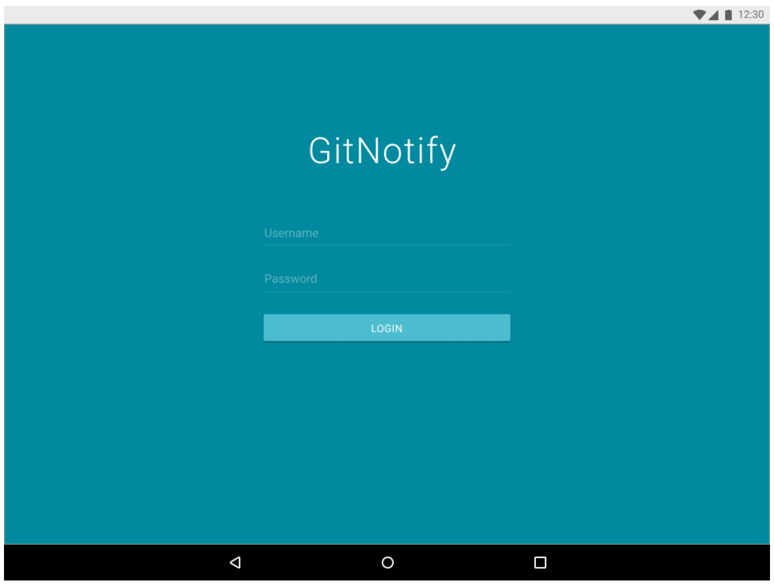
Other features will include:

- Internal database, for offline visualization
- Background sync, to keep the data always up-to-date
- Layout for tablets
- Homescreen widget

User Interface Mocks

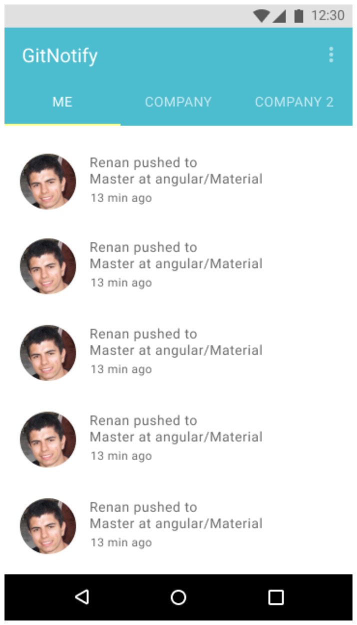
Login Screen





Smartphone and Tablet mode

Dashboard



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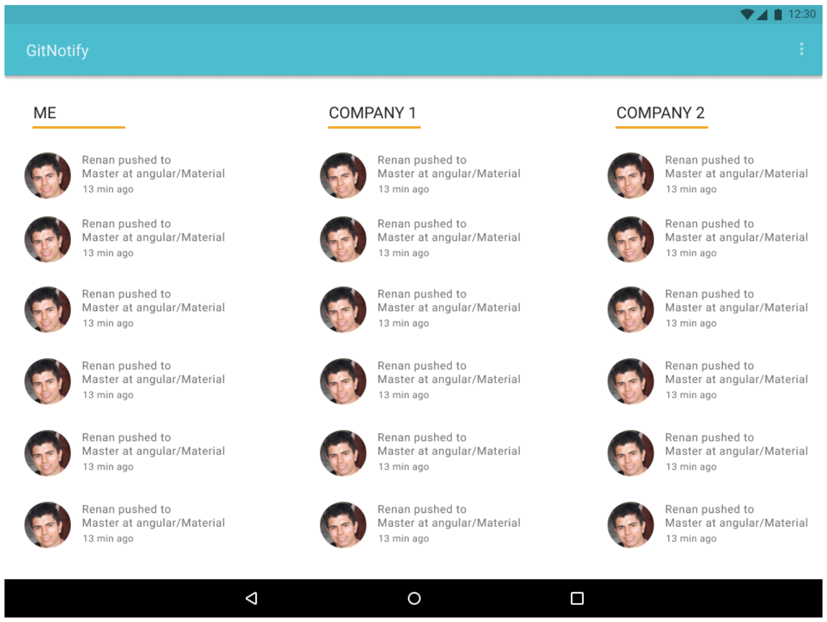

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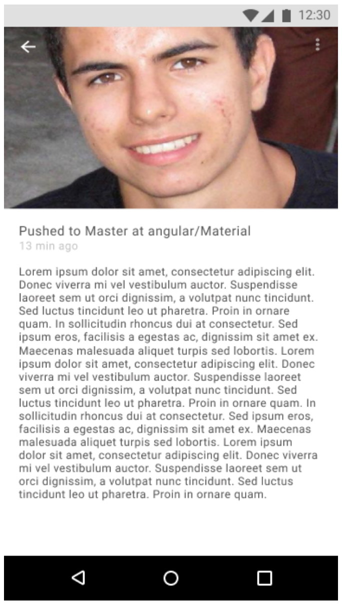
In smartphone mode, the main screen will show events grouped by organizations and in a chronological order. To simplify the navigation, each company will be presented in a tab.
In tablet mode, because of the larger screen, the layout will be adapted to show multiple organization events.

Detail Screen



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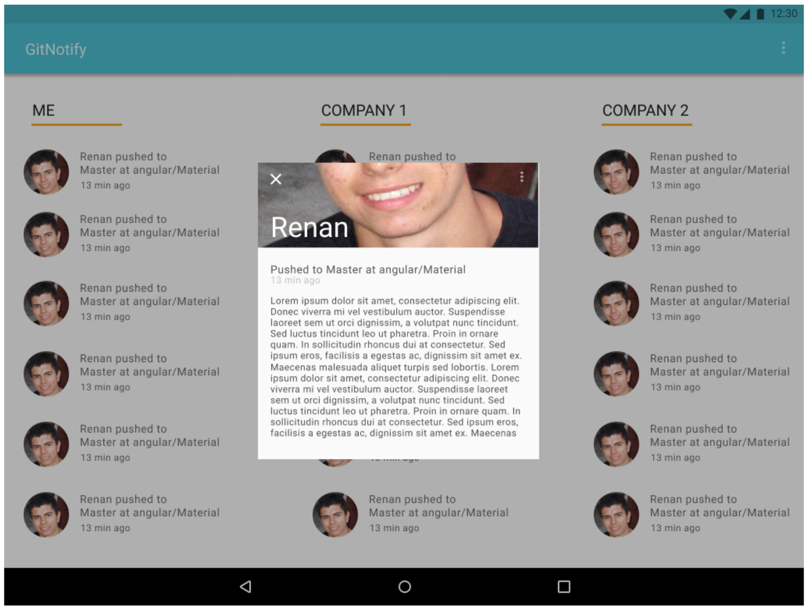

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In smartphone mode, the Detail screen will be presented in a separate view, as oppose to the tablet mode, where it will be shown inside a Dialog. This screen will have complete details about the event selected on the dashboard. Each event carries different types of information, so this view must be able to change the UI to represent all the data retrieved from the GitHub API.

There are 15 different types of events, and all of them are going to be represented on this screen.

Key Considerations

How will your app handle data persistence?

The app will use a Content Provider in conjunction with a Sync Adapter.

Describe any corner cases in the UX.

The main screen of the app will be a dashboard with two different layouts, depending on the screen size of the device. As shown on the mocks above, for smartphones the screen will present the information in tabs, having each item a list of events related to an organization or to the user's personal account. In tablet mode, this screen will be modified to show the tabs in a column form, inside a horizontal scroll container. That way, the user will be able to see and manage multiple organizations at the same time.
Another difference from the smartphone mode is that the "Details" screen will be shown in a Dialog, as opposed to a full Activity, mainly because of the extra screen size available on the device. That way, the UI must be implemented as a reusable component, to satisfy the two conditions.

Describe any libraries you'll be using and share your reasoning for including them.

- Retrofit: to simplify HTTP requests
- Dagger 2: for dependency injection. Used to facilitate the isolation of different application layers and, therefore, simplify the creation of automated tests
- Picasso: for downloading and caching images
- ButterKnife: to simplify binding views in the code
- Gson: JSON serialization/deserialization
- Schematic: to simplify the creation of the content provider

Describe how you will implement Google Play Services.

The app will use two Google Play Services:

- Google Analytics to measure how many users were actively using the app in a period of time and which type of event is the most accessed
- Google AdMob to show banner ads on the details screen

Next Steps: Required Tasks

Task 1: Project Setup

- Configure libraries
- Configure dependency injection
- Configure unit tests

- Divide the project structure into layers:
    - Domain: business logic
    - Repository: interaction with the device storage, SQLite, AccountManager, etc
    - Model: POJOs that represents the data model
    - UI: Activities, Fragments and Presenters

Task 2: Account Manager

- Create Login Activity
- Validate input fields
- Login user with GitHub API
- Store access token in the Account Manager of the device
- Create protection from unauthorized users. Always check, in the MainActivity, if the user has a valid token

Task 3: Sync Adapter

- Design the Database schema
- Create the Content Provider using the library Schematic
- Create the Sync Adapter
- Configure the periodic sync
- Request list of organizations from API
- Request list of events from each organization from API
- Store ETAG header from each request (Cache control)

Task 4: Consolidate Data

GitHub events are separated in the following categories:

- CommitCommentEvent
- CreateEvent
- DeleteEvent
- ForkEvent
- GollumEvent
- IssueCommentEvent
- IssuesEvent
- MemberEvent
- PublicEvent
- PullRequestEvent
- PullRequestReviewEvent
- PullRequestReviewCommentEvent

- PushEvent
- ReleaseEvent
- WatchEvent

Each category holds different types of information that must be decoded and stored in a structured way so that we can pull this information later to display in the Details View.

In order to consolidate this information, it will be necessary to create decoder classes to each one of those categories.

Task 5: Implement Dashboard

- Implement Cursor Loader for the list of events
- Implement Tabs, ViewPager and RecyclerView for the smartphone layout
- Implement Horizontal Scroll View and RecyclerView for tablet mode
- Implement "swipe to refresh" on each list

Task 6: Implement Detail View

- Pull information from decoders, described above, to show details about each event
- Implement the UI elements on a Fragment that will be displayed inside an Activity or inside a Dialog
- If necessary, make additional requests to collect more information about the selected event

Task 7: Widget

- Implement Widget that will display the most recent events in a list format, pulling data from the Content Provider

Task 8: Google Play Service

- Include Google Analytics track events on each Activity and on the selection of events on the dashboard screen
- Include Google AdMob Banner Ad on the Detail View