Google Mobile Cpanel Admin App

for Enterprise Google Apps

A report on the Summer Internship 2013
at Google India Private Limited

Submitted to IDC, IIT Bombay by

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Declaration

The project ‘Google Mobile Cpanel Admin App’ for iOS has been carried out during the Summer Internship Program 2013 at Google India Private limited in its Bangalore office.

The undersign hereby declares that this is entirely an original work carried out during the span of the internship and has not been plagiarized in part or full from any source.

Pritam Pebam

Mumbai
8th July, 2013

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Pritam Pebam

Non-Disclosure

The content of this document is published strictly for the purpose of the requirement for the submission of a report on the Summer Internship 2013 underwent by Pritam Pebam as a UX Design intern at Google India Pvt. Ltd.

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Google India Pvt. Ltd.

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Content

Introduction

Abstract

Google Mobile Cpanel app is the admin console for Enterprise Google Apps for mobile devices.

Google Apps is a cloud-based productivity suite which comprises of several Google services/products including Gmail, Google docs, Google drive, Google Calendar etc for enterprises, SMBs or teams. Through Google Apps, enterprise users are allowed to customize these products according to their requirements.

Usually an IT admin does all the major adminstration or management tasks of their users/employees through the dashboard of the desktop version of the Google Apps. Through the Mobile Cpanel Admin app, Google is bringing the high-level administration & management capabilities to mobile devices, both in Android & iOS platform so that users can enjoy the service on a mobile device.

Introduction

The internship

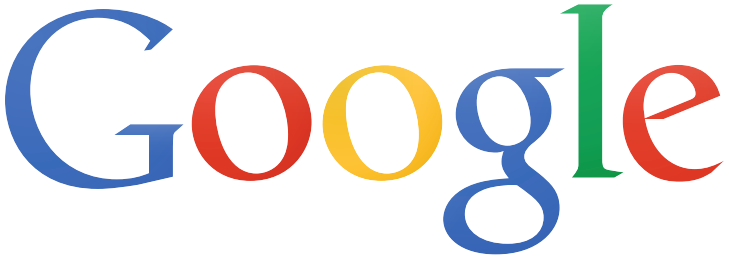
As part of the summer internship experience required to fulfil the academic requirements of the M.Des program at IDC, IIT Bombay, the internship was underwent at the Bangalore office of Google India Pvt. Ltd. during the month of May, June & July 2013.

The project ‘Google Mobile Cpanel App’ was picked from among the Google Enterprise products dealing with the Enterprise Google Apps. During a span of 10 weeks, hi-fidelity mocks were delivered and the product was successfully pushed to *dogfood**.

* Dogfood: Confidential new version of a product or feature, only visible to Googlers.

Introduction

About Google



Google is a multi-national corporation founded by Larry Page & Sergey Brin. Headquartered at Mountain View, California, Google has more than 70 offices spreaded over 40 countries around the globe.

Google offers several web-base services including (but not restricted to) web-search, cloud computing, mobile operating system, web-analytics and online advertising technologies.

In recent years, Google has undergone radical design changes for all its products through the lift-off of ‘Project Kennedy’. The project called for a cohesive vison for all Google products. Born out of the Kennedy Project is a small team known as the Google UXA team whose main objective is to desgin & develop a UI framework which transforms Google products into a beautiful, mature, accessible and consistent platform.

Google Product Cycle

Google product follows a 2 tier testing & feedback gathering before it is launched to the public.

Fishfood: A very early version of the product is released to the team through an internal channel call fishfood. It usually has the minimal features with only basic interactions that give a high level overview. The team members test basic feasibility and feedbacks are noted.

Dogfood: Once the product is in a good shape, the product is released to all (or selected) Googlers which is known as ‘dogfooding’. Googlers internally provide feedbacks through which some of the critical problems or statistics are identified.

Once the app is ready for the public, in case of iOS apps, before the app is sent to the iTunes App Store for approval, the product is sent for review to a team of Googlers which will verify if it meets Google guidelines & Google standards.

The project

The scope of the internship is to design an app for the iOS platform which provides Google Apps admin features and is in compliance with iOS & Google UXA standards. An early stage Android Cpanel App already exist in *dogfood* before the start of the internship.

'*Objective & Key Results*' (*OKR**) are set at the beginning of the project to set a goal to be achieve through the internship. The main goals are as follows:

1. Design the main four screens
    - Dashboard
    - User list
    - User Detals
    - Edit User
2. Explore Search feature for the app

* OKR: A Google method of setting individual, team, or company goals and objectives for the quarter.

Domain requirement

To be able to design a cutting edge iOS app which reaches millions of users worldwide which stands up to the Google standard, a critical understanding of both the iOS Human Interface guidelines & Google's own UXA guidelines is necessary.

The first week of the internship was spent in studying all design guidelines pertaining to Android UI, iOS UI and Google UXA guidelines.

In addition to this, a comparative study on several hundreds of iOS and Android patterns is carried out to identify best practices & existing solutions to common interaction design problems.

The design problem

Google Apps delivers several of it’s products to enterprise users whose behavior and requirements vary a within a very wide range. The Google User research report identifies major tasks users carry out on the web version.

The philosophy behind ‘why a mobile app?’ is not to have a clone of the web version; rather to provide users with device specifc features that builds up the ecosystem eventually providing a more coherent experience.

The problem herein lies in the product conceptualization, on how cpanel should look & act like and how to come up with a focused design on a basic framework that can be implemented immediately but leaves room for upgradation, improvements or feature addition in later releases.

User research

A definitive data-base user research had been carried out through the existing web version of the cpanel dashboard.

The insights highlights that a rough 75% Google Apps enterprise users belong to SMBs. Of these, the results highlight 9 themes on exploratory issues, confusing/puzzling elements, brand trust, interaction behavior, requirement of uniques needs around specific users, efficiency, adoptation, effects from kennedy redesign & user satisfaction.

Following this, 4 different personas are prepared which roughly covers all range of user types.

An Antique shop: Covers users who need basic feature

A Delivery Service: Covers users who are internediate level

A Tax Service firm: Covers users who personalize services or need customization

A Consultation firm: Covers advance users.

These four personas are the guiding user types on which feature decisions and mobile apps designs are implied.

* Stats & findings base on ‘Google Control Panel UX Reports & Findings’

The process

The entire design process can be broken down into sections as follows

1) Identifying functionalities & feature implications

2) Identify design problems on the existing android app

3) Establish design solutions as per iOS guidelines

4) Prepare visuals: Sketching & Mockups

5) Design iterations & feedback

6) Prototype

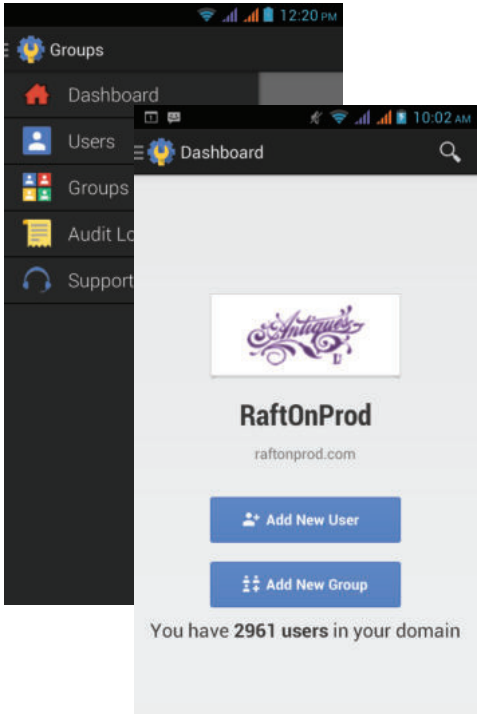
The process:

Identify functionalities & feature implications

The android app had already been built after understanding key insights from the user study report carried out through the existing desktop version.

Due to time constraint, the scope of the internship was limited to understanding design problems identified through the existing android app and solving architectural level issues for the features built so far.

A few days was spent to understand what tasks can the android app achieve, what are the key features available from a product stand-point and in understanding the underlying Information architecture.



The process:

Identify design problems on the existing android app

Carrying forward the understanding from the previous phase, issues or possible improvements pertaining to the information architecture, User interface, visual design are identified at this phase.

As Android devices have a ‘back’ button on the device itself while it is absent on iOS devices, there is an inherent problem to accomodate the ‘back’ button on the app UI on the iOS app while the requirement is obsolete on an Android device.

Due to the differences in the basic interaction design principles for both the platforms, an alternative for a certain interface pattern has to be identified to solve a certain design problem. For instance, modal pop-ups are common with android apps while it is uncommon on an iOS app.

The process:

Establish design solutions as per guidelines

Design solutions to the problems identified are established. These design solutions should comply with the iOS guidelines as laid down by Apple as well as Google UXA guidelines for mobile devices.

In the process, multiple solutions are explored through different design approaches. These solutions usually can be categorise into 3 forms:

- **Conventional Design:**
  This solution is often easy to implement with very less dependecies. This design solutions are aimed for immediate implementation.

- **Non-Conventional Design:**
  This solution often requires inputs from team members and usually needs couple of iterations before a final interface can be decided. This design is aimed to push the limitations put by API availability in order to improve the user experience.

- **Bold Design:**
  This solution often defy best practices or common patterns. The solution aims in providing a unique identity and experience pushing forward with additional features that are not achievable immediately.

The process:

Prepare Visuals: Sketching & Mockups

Rough sketches are prepared to capture the solutions on paper. As sketches are quick and helps capture the essense, several versions of each solutions are prepared through sketching. After multiple refinement, a specific approach is chosen. Until a specific approach is finalized, no sketches or design ideas are discarded.

The UI is then directed towards the chosen approach and more detailed sketches are prepared. The same approach generally yields multiple designs with slight variant. Preparing hi-fidelity pixel perfect screen mocks helps in filtering the best among the variations. These hi-fidelity mocks are then shared with other designers and team members to gather feedbacks.

The process:

Design Iterations & Feedback

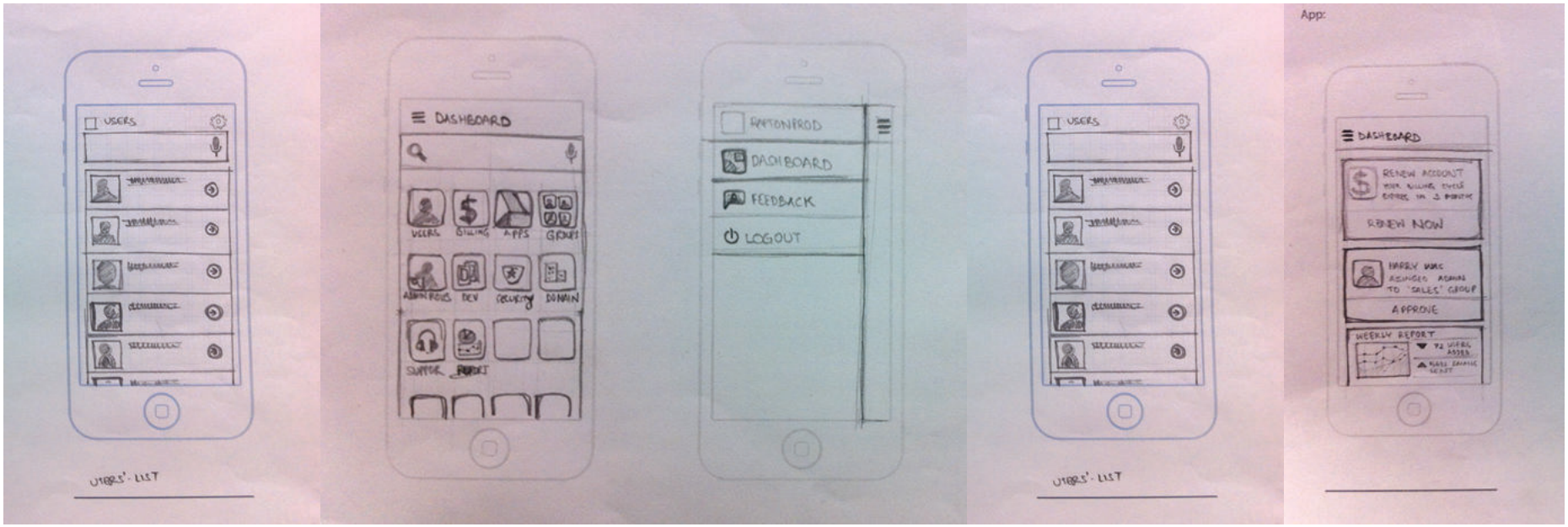
The hi-fidelity mocks often yields valuable feedbacks ranging from minor ones to critical ones as it’s one of the first phase where the design is shared apart from the designers in the team.

Through the feedbacks from the entire team (designers, developers, Project Manager), the design is quickly iterated multiple times until a plausible solution is achieved. Obtaining feedback & iterating can take from quite a few times to several times until finalization and UI freeze.

Once the design is finalized, specifications like colors, size, margins, transparency values etc are determined (as per UXA guidelines) which are then handed over to the developers for implementation.

The Design:

Sketches



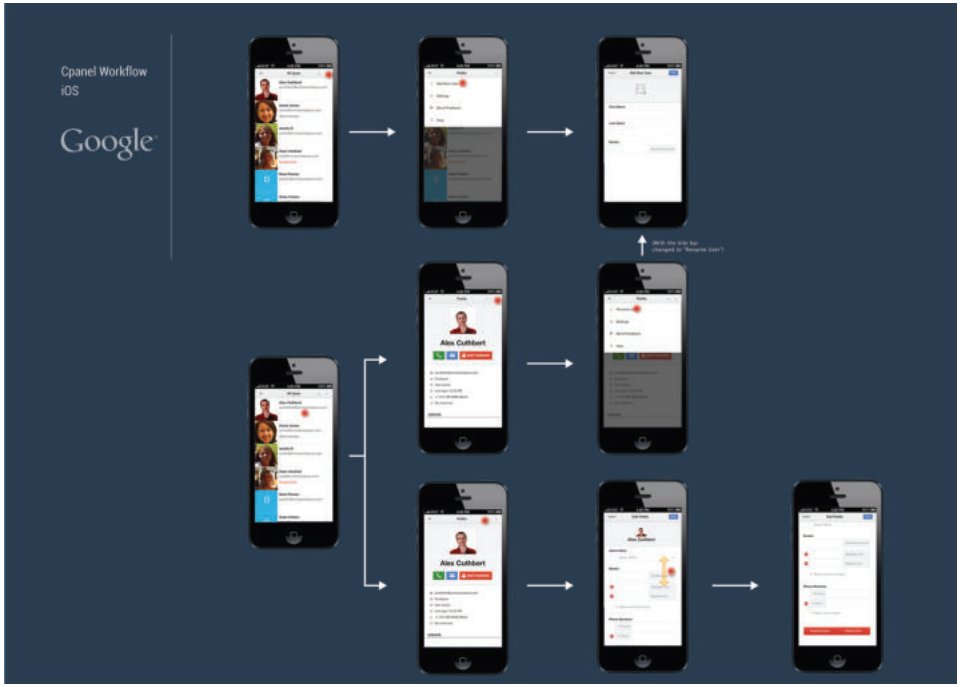
Early Stage exploratory sketches

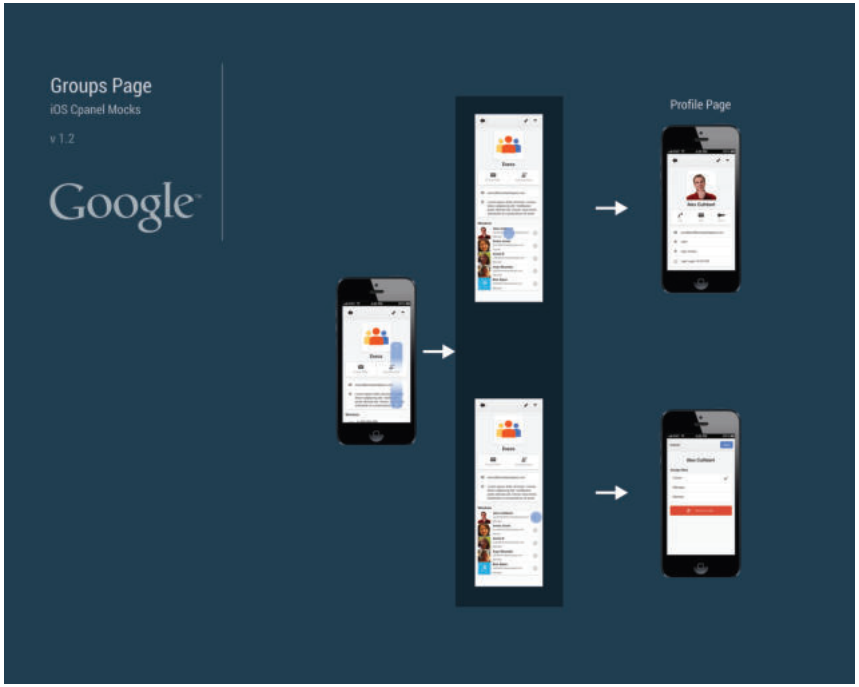
The design of a mock usually is preceded by rough sketching. Through quick iterative sketching, minimum-viable design solutions are identified.

The interaction design of the app is first sketched out first before the architecture is laid out. This saves lots of time and avoids jumping right into the water.

The design:

Workflow Diagram





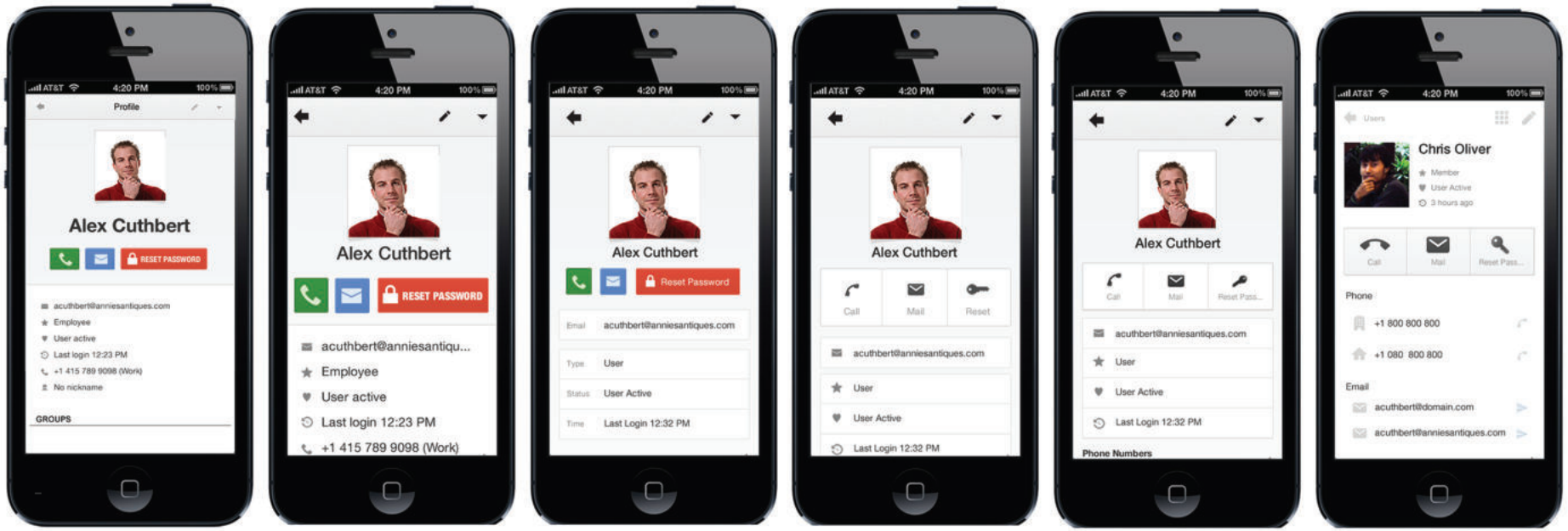
Action workflow architecture

The interaction architecture and information architecture determined is represented through a solid screen-to-screen workflow diagram. As the whole app architecture can be be seen from a holistic view, this stage provides an easy way to identify, if there exist any, major breaks in the interaction design.

The workflow also makes the developers and the rest of the team understand the app thoroughly.

The design:

Mockups



Profile page iterations

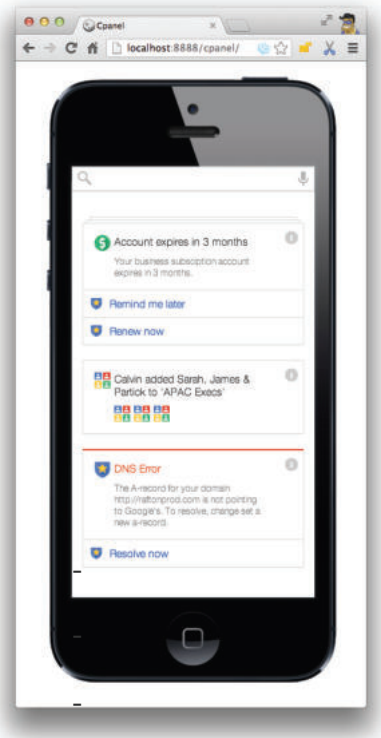
Once the architecture is laid, a design direction is freezed. This enables the team to focus on the specific interface designs.

Pixel perfect hi-fidelity mocks are then prepared and are shared within the team. The team shared inputs and feedbacks through which the mocks are further iterated and refined several times.

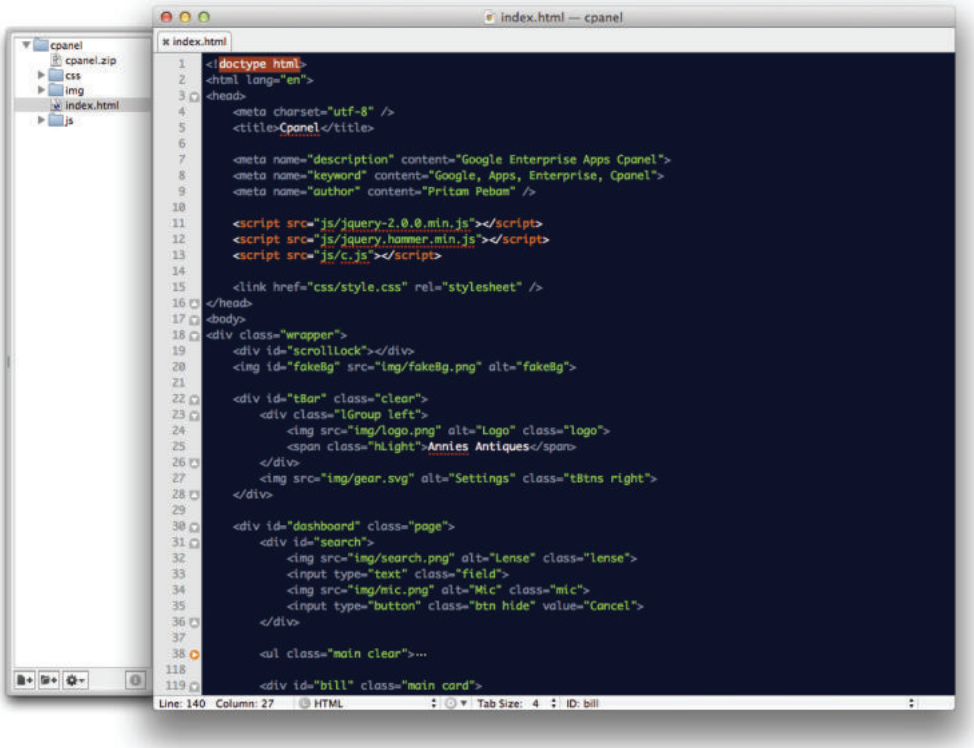
Since visual elements becomes strong in mocks, designing pixel perfect layouts with actual data is critical so that the teams can have a sense of the real output.

The design :

Prototype



Prototyping



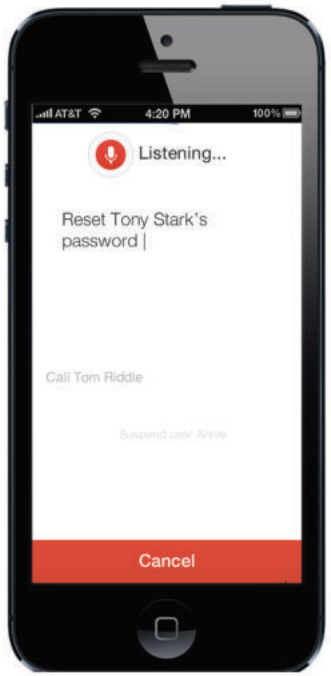
A basic prototype of the exploration phase design is prepared using HTML, CSS and JavaScript.

The prototyping not only has the capability to enable the developers understand the interaction behaviors but rather also helps the designers better understand how the whole interaction fits in. It also helped better refine subtle design nuances which adds to the emotive value that provides a Googley user experience.

Future Scope

Exploratory Version

Exploratory Version



Exploration and feature addition

Due to time constraint, design explorations are not carried out to the full extent. However, re-thinking on the question ‘Why a mobile App?’, a design philosophy ‘reduce time to action’ is established to help decide the core features of the mobile dashboard.

Following this idealogy, certain features are explored and suggested for the next version of the app.

The output

All the OKRs set at the start of the internship has been delivered with additional design improvements.

Apart from the 4 main screens, interactions & UI designs for groups, groups drill down, new feature additions on task oriented action cards, voice search UI etc. are delivered.

New UI improvements are also delivered while encorporating latest changes on the iOS7 platform.

The work carried out during the internship has been released in the Google *Dogfood*.

Epilogue

During the internship, the major interaction design problems were solved while implementing all the major features on an iOS platform. An extensive study on designing for both Android and iOS platform was also carried out including identifying design patterns.

The internship has led to a better understanding of the Google design principles and guidelines tracking back to a close connection with the academic courses carried out under the M.Des program in IDC, IIT Bombay.

The whole process that was carried out as a team provides an exposure towards the industry practices. Also, the face-to-face interactions with the team members which comprise of designers, developers and managers also gave insights to becoming a better team player.

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