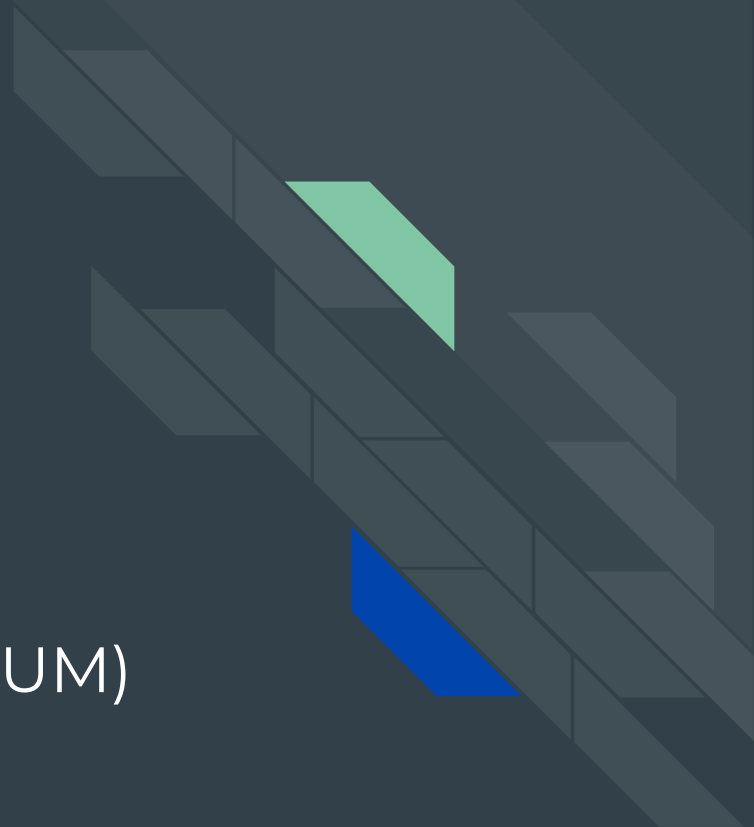Server Under the Mountain (SUM)

# Problem

As a user or organization you cannot easily host a cryptographically secure server for specific data types such as notes, tasks, documents, media, contacts, and more.

Existing solutions are either proprietary and therefore not easily auditable for security or they require extensive configuration by a user with a background in IT infrastructure. Most popular application suites track user behavior and serve ads, which is a major privacy concern.

Open source solution for managing a **private, secure, and highly scalable** data repository.

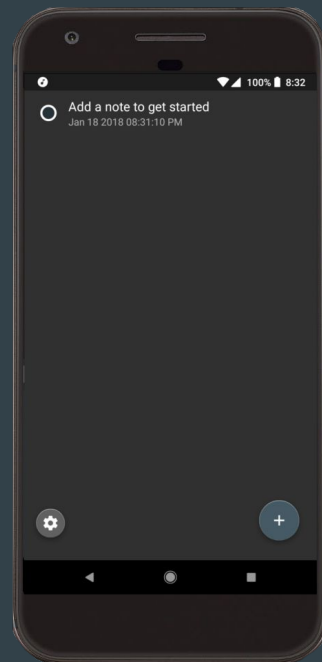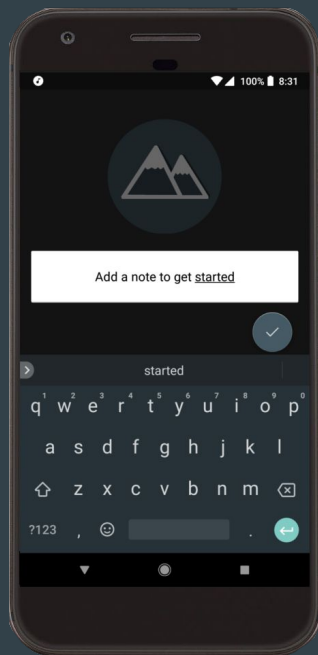Server Under the Mountain (SUM)

SUM Notes

SUM Gallery

SUM Calendar

**... and more applications built around privacy and security.**

# SUM Notes - Built for short thoughts and long markdown documents.

Proof of Concept for supporting mobile devices on our cross-platform software suite.

# Security Options

a. **Complete Lockdown** - For the ultra paranoid

Data never leaves one device, it's only stored locally and all data is encrypted.

b. **Secure Cloud** - The average user

All data is encrypted in a local database, zipped locally on a specified schedule, then the encrypted zip file is uploaded to a cloud storage provider. Even if your cloud provider is hacked they do not have the ability to decrypt your data since they do not own the key to decrypt the zip file. The cloud storage provider offers a layer of protection for your data because of authentication with TLS, optional 2FA, and optional U2F.

# Additional Features

**No Trackers**

SUM applications do not use any analytics to monitor user behavior.

**Scheduled Cleanups & Incognito Modes**

Delete select types of data on a schedule or purge everything across multiple apps.

**Highly Extensible**

Developers can add SUM services to existing applications to offer more security.

**Safe Import & Export**

Easily move data from your secure repository to other apps, or the other way around.

**Minimal Footprint & Enhanced Accessibility**

No bloatware and easily accessible open source files mean quicker security audits and localization.

**Easily Side-Loadable**

Basic instructions for how to compile and load onto devices instead of going through an app store.

# End of Proposal
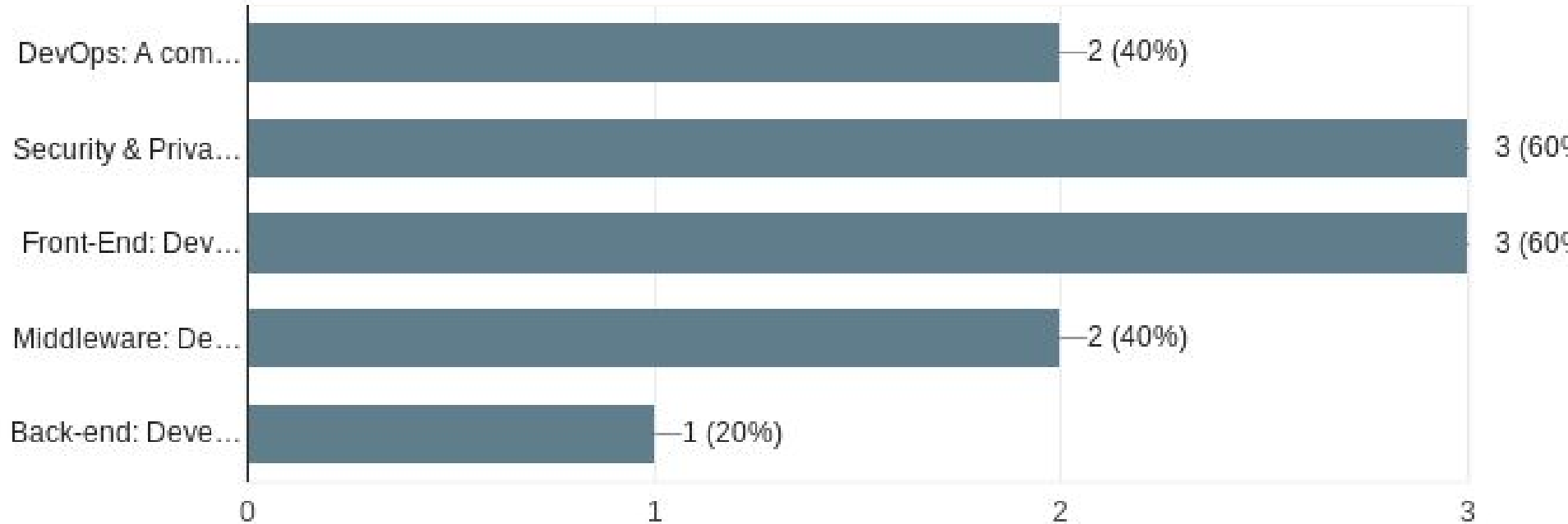
# Server Under the Mountain (SUM)

## Roadmap & Sprint Planning

# Select 1 to 3 roles you want to focus on

5 responses



| Role | Responses |
|------|-----------|
| DevOps: A com... | 2 (40%) |
| Security & Priva... | 3 (60%) |
| Front-End: Dev... | 3 (60%) |
| Middleware: De... | 2 (40%) |
| Back-end: Deve... | 1 (20%) |

# What languages and tools are you familiar with? (If you've written something slightly more complex than "hello world", but you don't have to be an expert in it)

5 responses

| Language/Tool | Responses |
|---|---|
| Java | 5 (100%) |
| Python | 4 (80%) |
| Golang | 2 (40%) |
| Bash/Shell | 2 (40%) |
| Git | 3 (60%) |
| HTML/CSS/Jav... | 1 (20%) |
| Encryption and... | 4 (80%) |
| APIs and REST... | 2 (40%) |
| Database langu... | 2 (40%) |
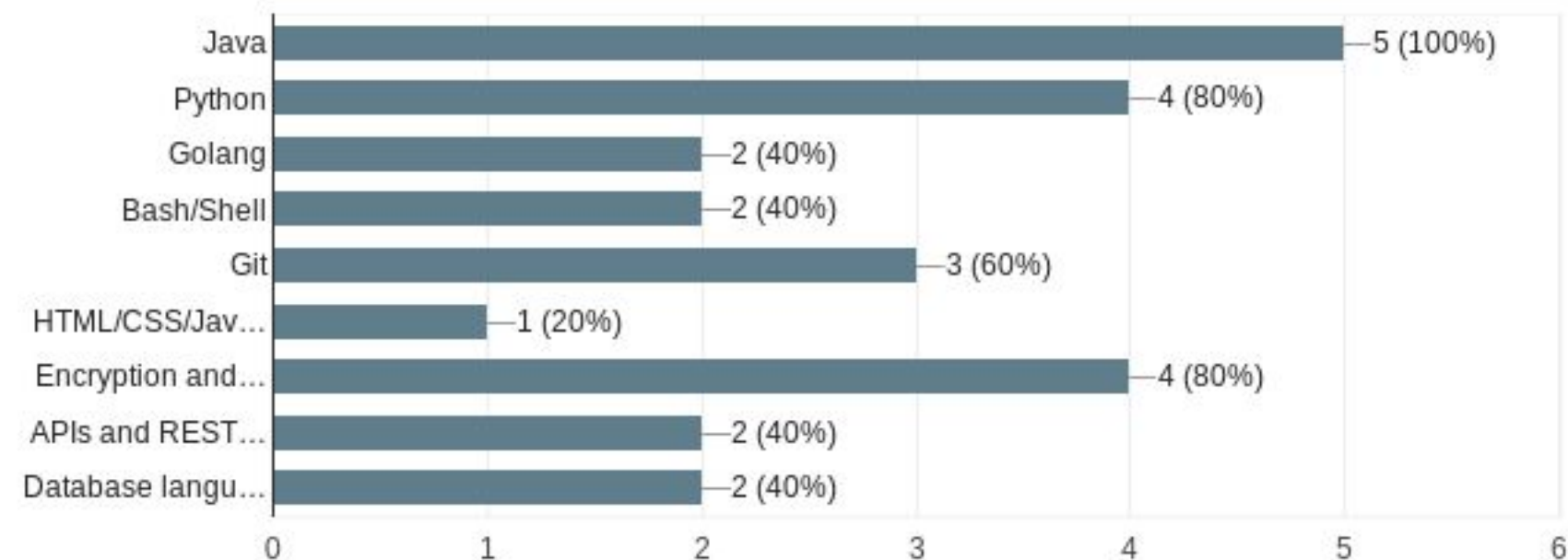
# Primary Roles

Alex        Full Stack & Cross-Platform Developer

Collin      Architecture Lead, Full Stack & Cross-Platform Developer

Michael     Web Developer, Release Lead

Luke        Project Manager, Scrum Master, Android Developer

Jessica     Security Architect, Threat Analysis Documentor, Android Developer

# SUM Notes - Progress



Automatically creates links for urls, phone numbers, email addresses, map addresses, and tags.

Ability to search through notes

Tap a tag below the search bar to show all notes with the same tag

Support for short notes and long lists

Blocks other apps from acquiring screen content, blocks screenshots, uses API to request incognito mode for keyboard

Option to export all data to another app that accepts strings or quick purge of all data

Re-order notes by dragging the left-hand bullet point
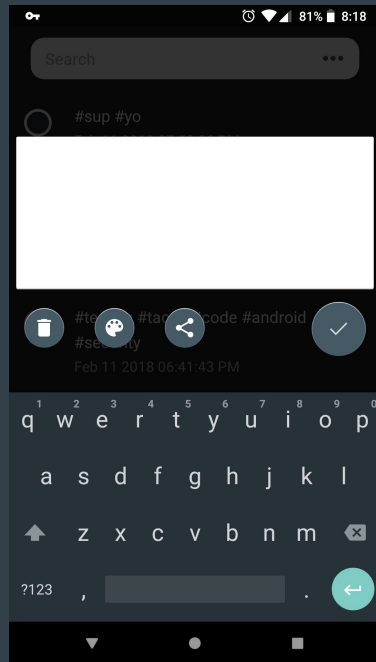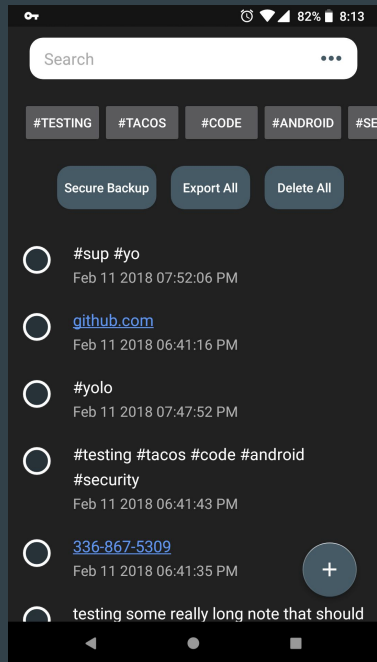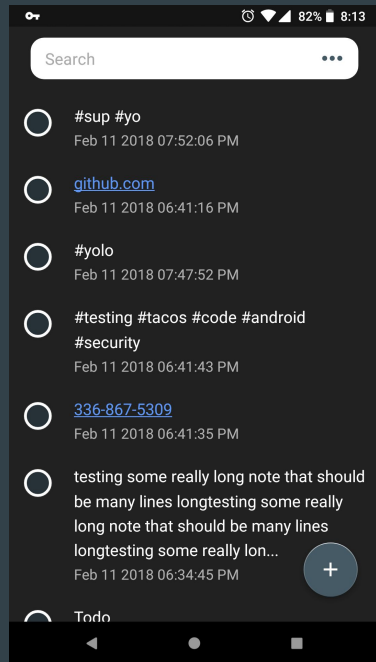
# Mobile Clients

Supporting Android devices for all SUM apps (no iOS)

1.  Start a Notes app with locally encrypted data in a SQLite database  using [SQLCipher](#)
2.  Expand the Note app's database capability to export an encrypted zip file of all content
3.  Utilize cloud provider APIs to do user authentication and upload the encrypted zip file (of the notes) to a user's account
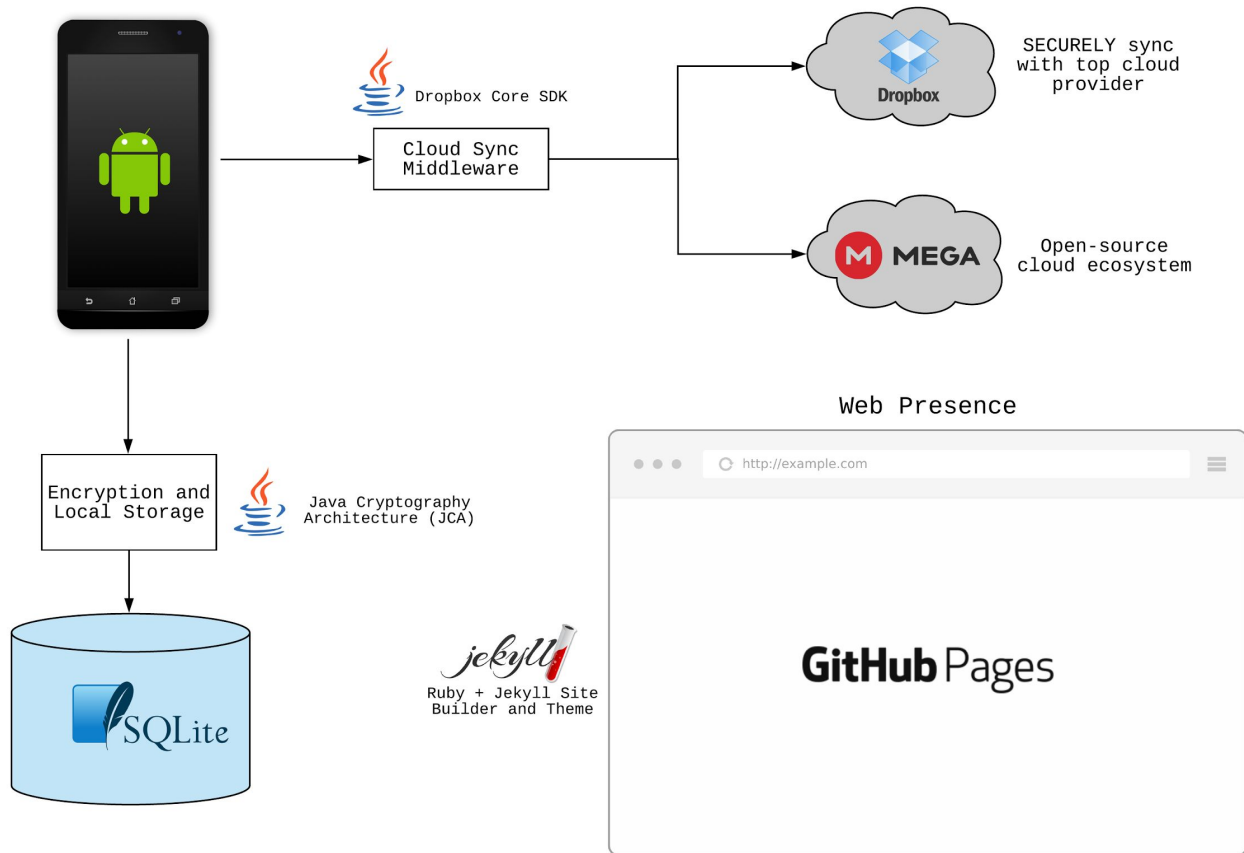
> We are going to support [Mega](#) as an open source cloud storage provider and [DropBox](#) as a proprietary option.

Once we have developed the back-end for an encrypted SQLite database  and middleware for cloud storage APIs then we can expand our product offerings to other types of apps (SUM Calendar, SUM Gallery, etc).

# SUM Architecture

Michael Burke, Jessica Denney, Collin Guarino, Alex Hahn, Luke Roosje

Dropbox Core SDK

Cloud Sync
Middleware

SECURELY sync
with top cloud
provider

Open-source
cloud ecosystem

Encryption and
Local Storage

Java Cryptography
Architecture (JCA)

Ruby + Jekyll Site
Builder and Theme

Web Presence

http://example.com

GitHub Pages

SQLite

# Sprint Roadmap (1 week sprints)

**1**     (2/19) <u>Android Notes</u>: Locally encrypted data and ability to export encrypted zip.
<u>Web</u>: POC for landing page design.

**2**     <u>(2/26) Android Notes</u>: POC for secure cloud backup.
<u>Web</u>: Landing page marketing content.

**3**     <u>(3/12) Android Notes</u>: Secure cloud backup support for one provider.
<u>Web</u>: Finalize release, do not ship.

**4**     <u>(3/19) Android Notes</u>: Secure cloud backup for Mega and DropBox with auth and TLS.
<u>Documentation</u>: Rough draft for threat level analysis and security overview in Overleaf.

**5**     <u>(3/26) Android Notes</u>: Finalize app store listing, ship.
<u>Android Calendar</u>: POC and finalized design/layout
<u>Web</u>: Ship.

# Web Presence

Create a splash page that explains what SUM is and what we have to offer. This is served in the GitHub repo and requires no hosting.

Getting started - HTML, CSS, Javascript

1. Create a repository on GitHub and use one of their "GitHub Pages Templates" as an initial version.
2. Customize the template, theme it, add logo, and start writing marketing content that tells users what we have to offer.

# End of Roadmap & Sprint Planning