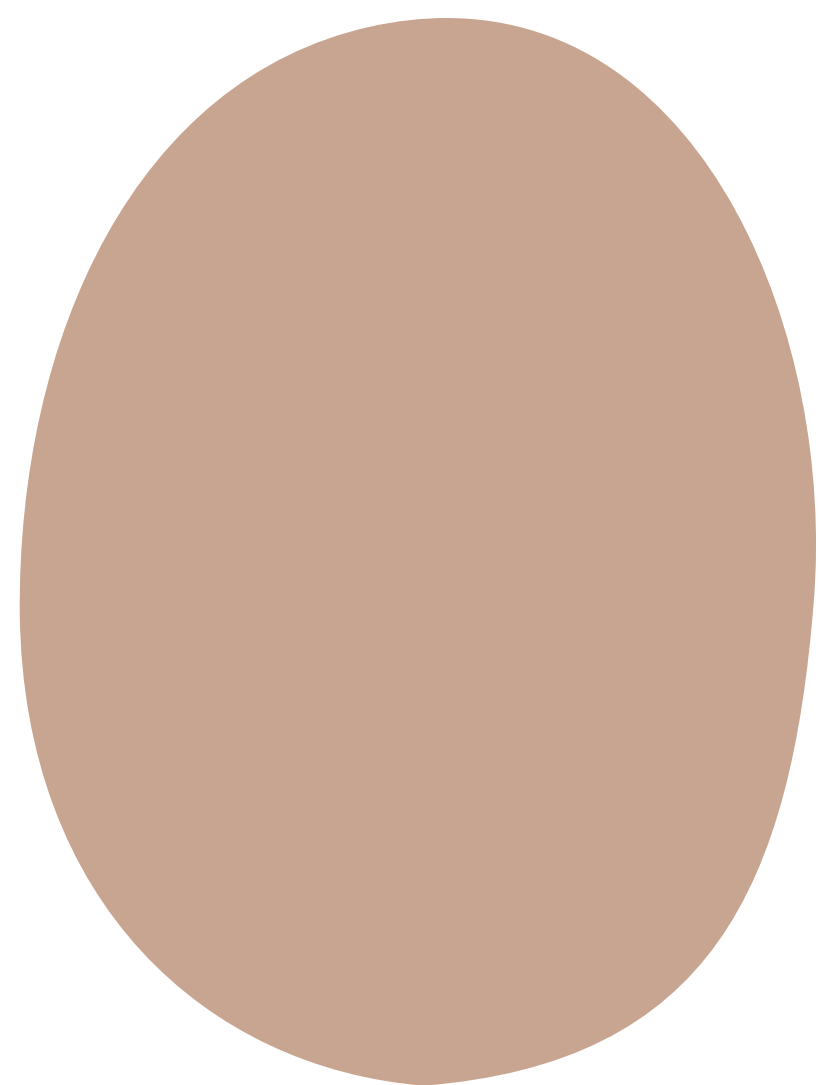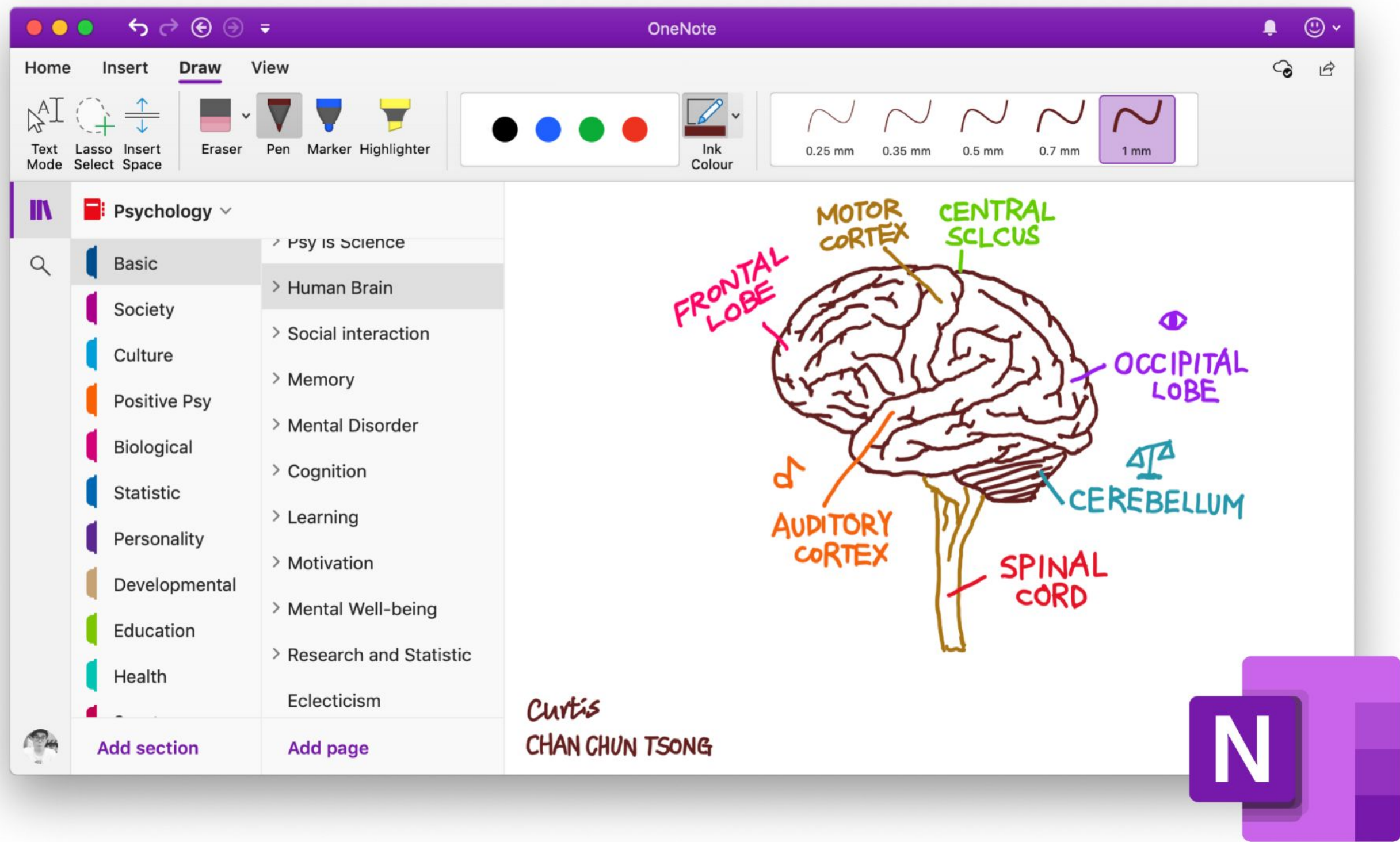# CS 398: Design Review

Team 211
Qianqian Wan, Jinyu Chen, Tianyi Tong, Qi Xuan Cui
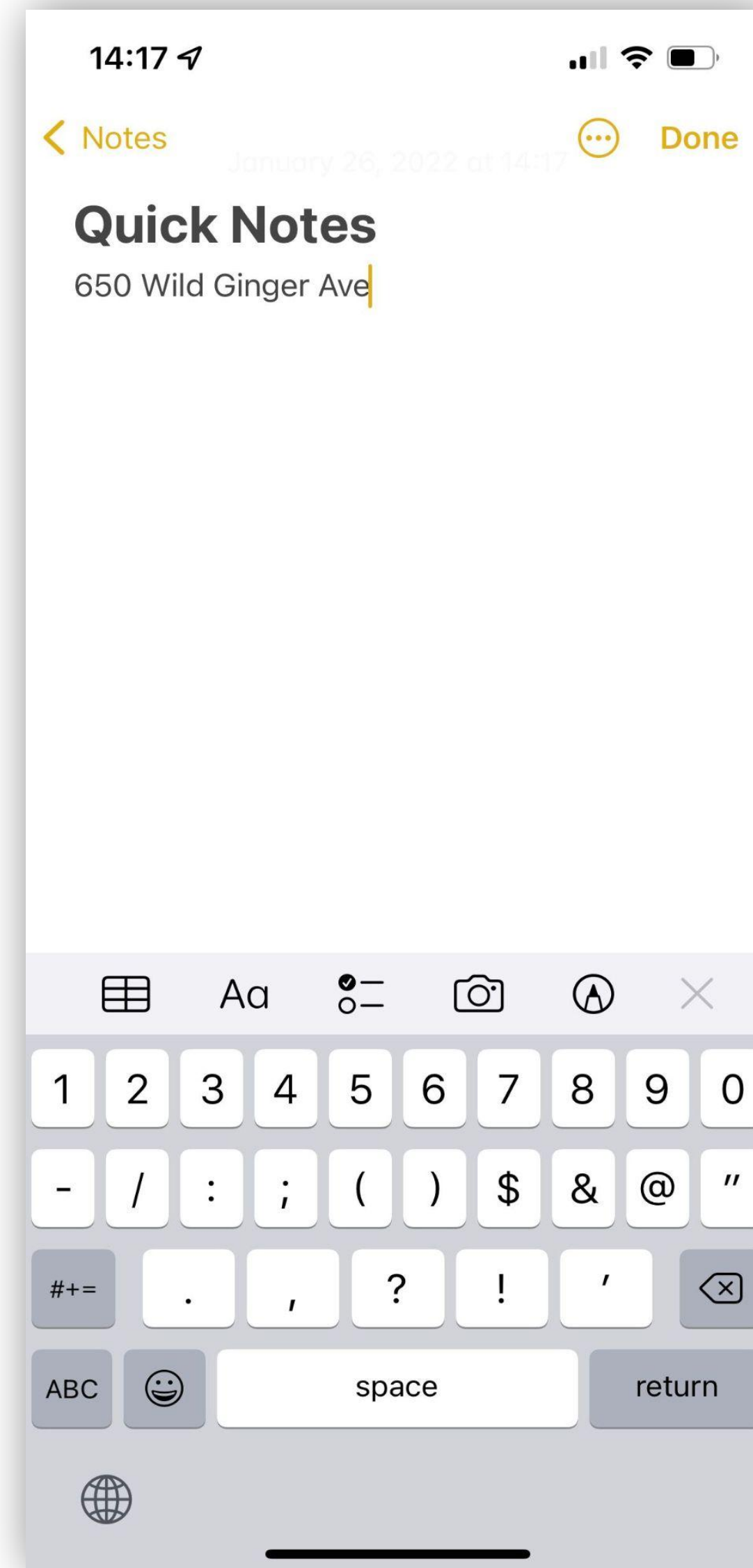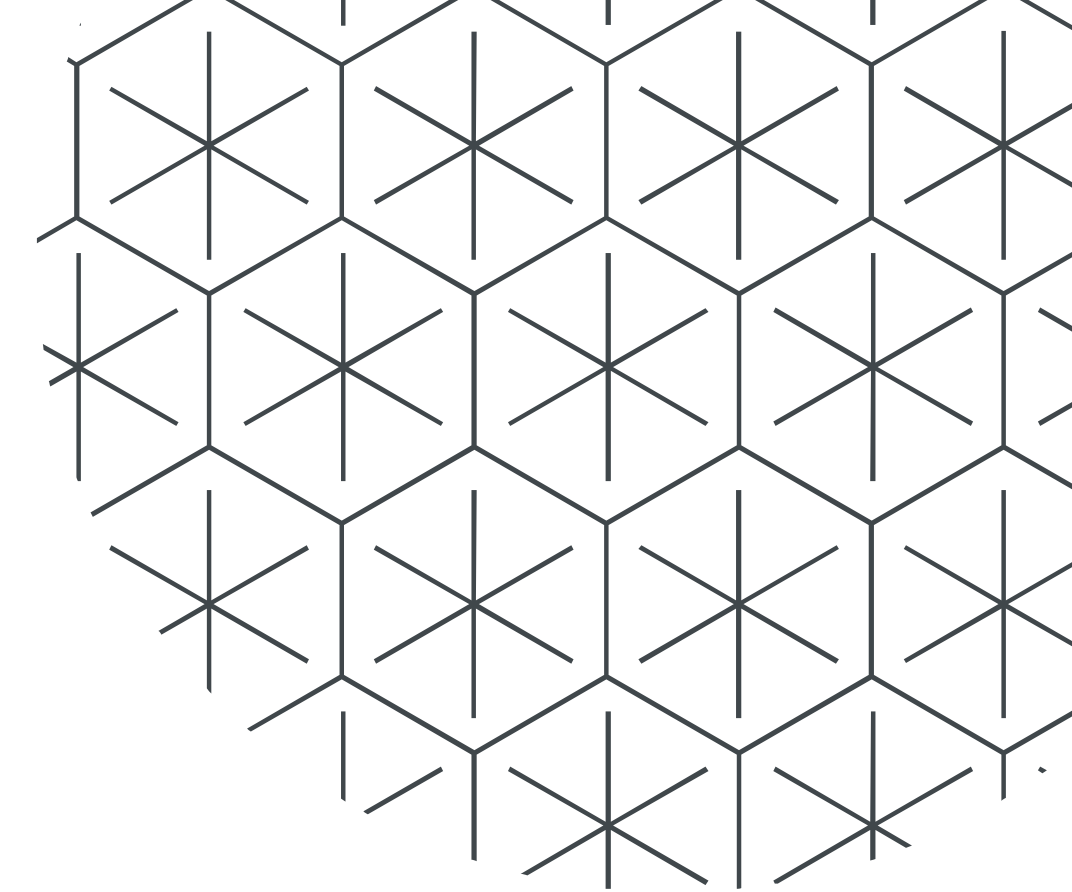
Introduction

OneNote

Apple Notes

Know the Clients

- Target User
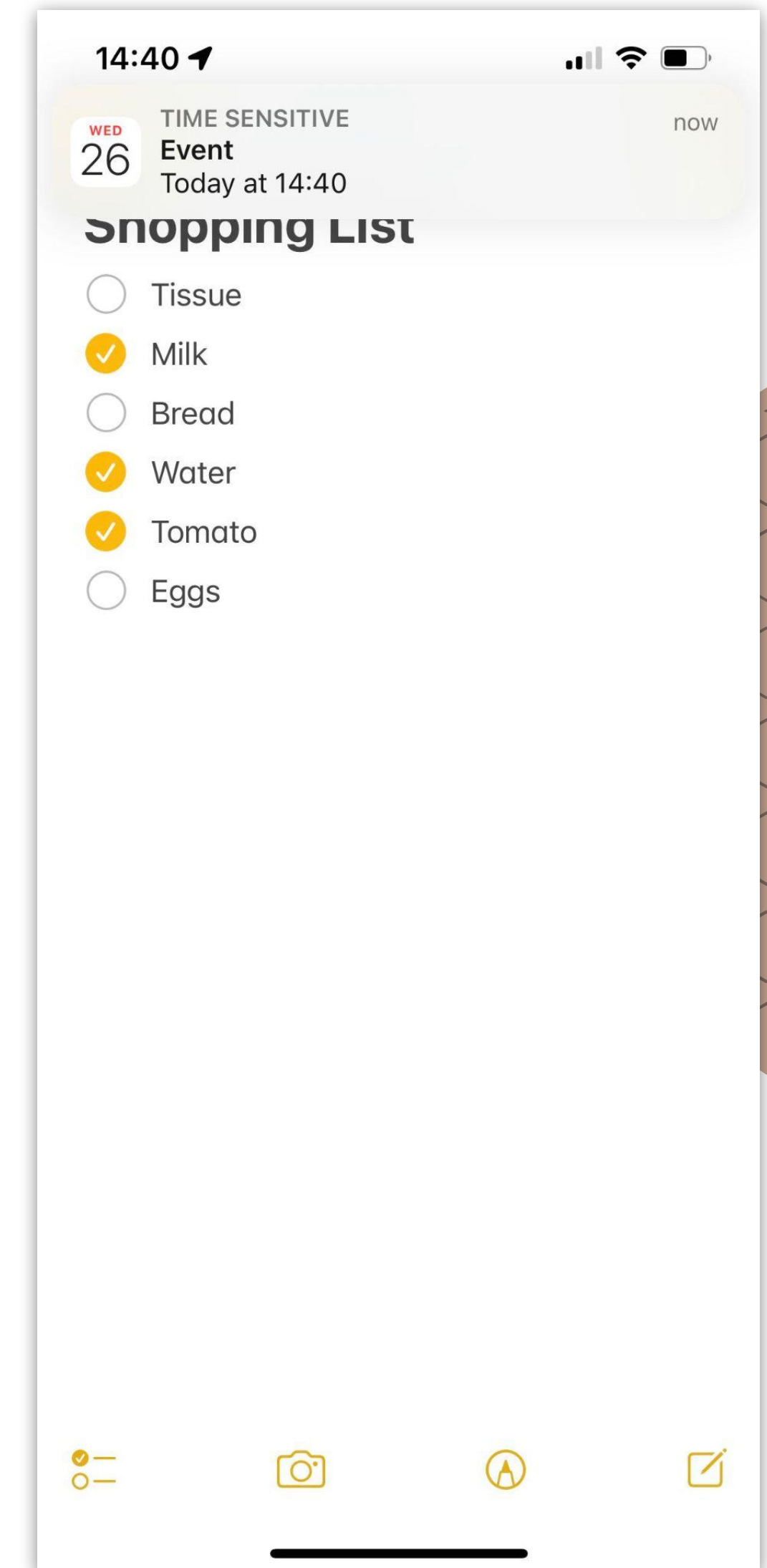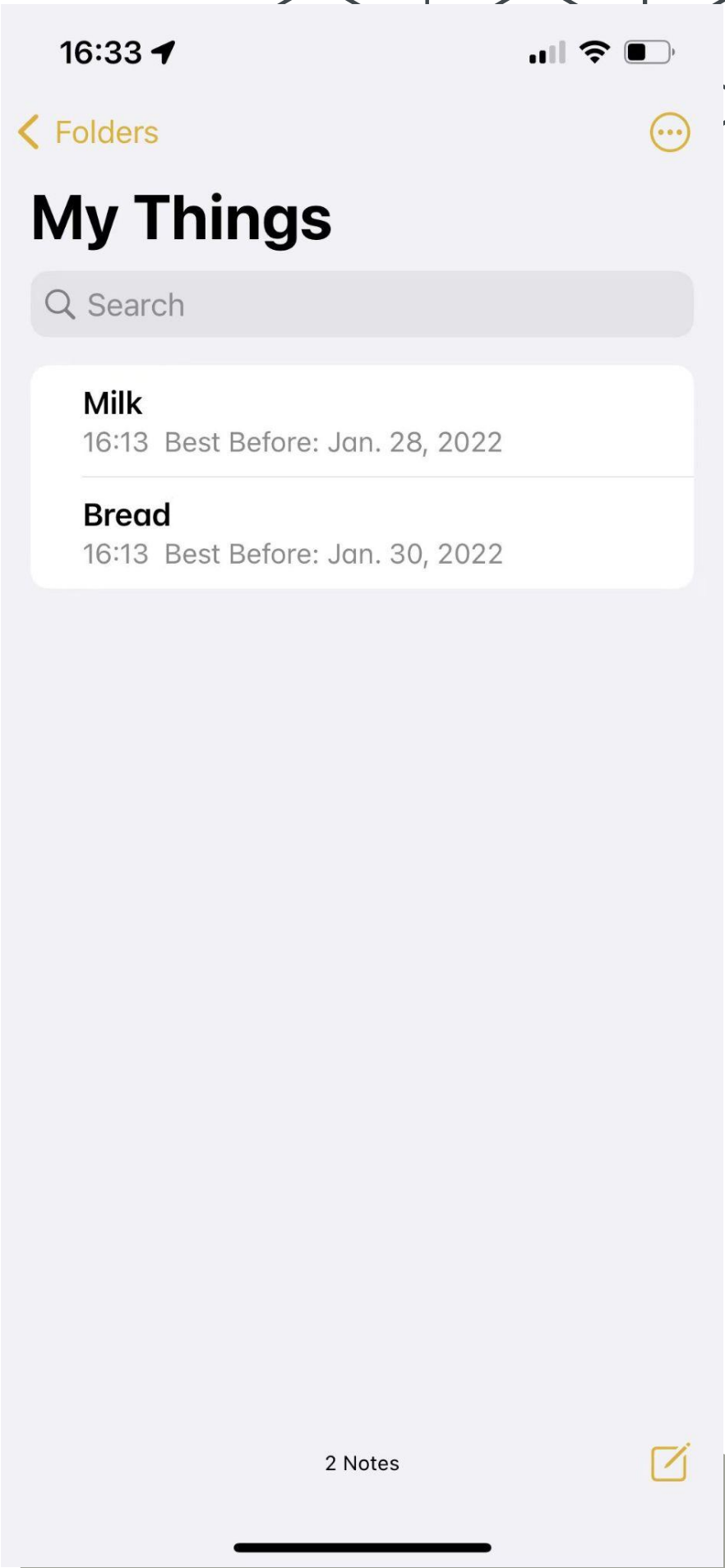- Interview
- Personas
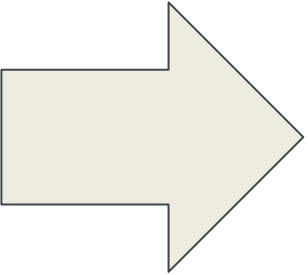- Requirements

+

- Constraints

→

- Simple & Easy-to-use
- Mobile

+

- Basic text input & formatting
- Making lists
- Notification

Imagine...
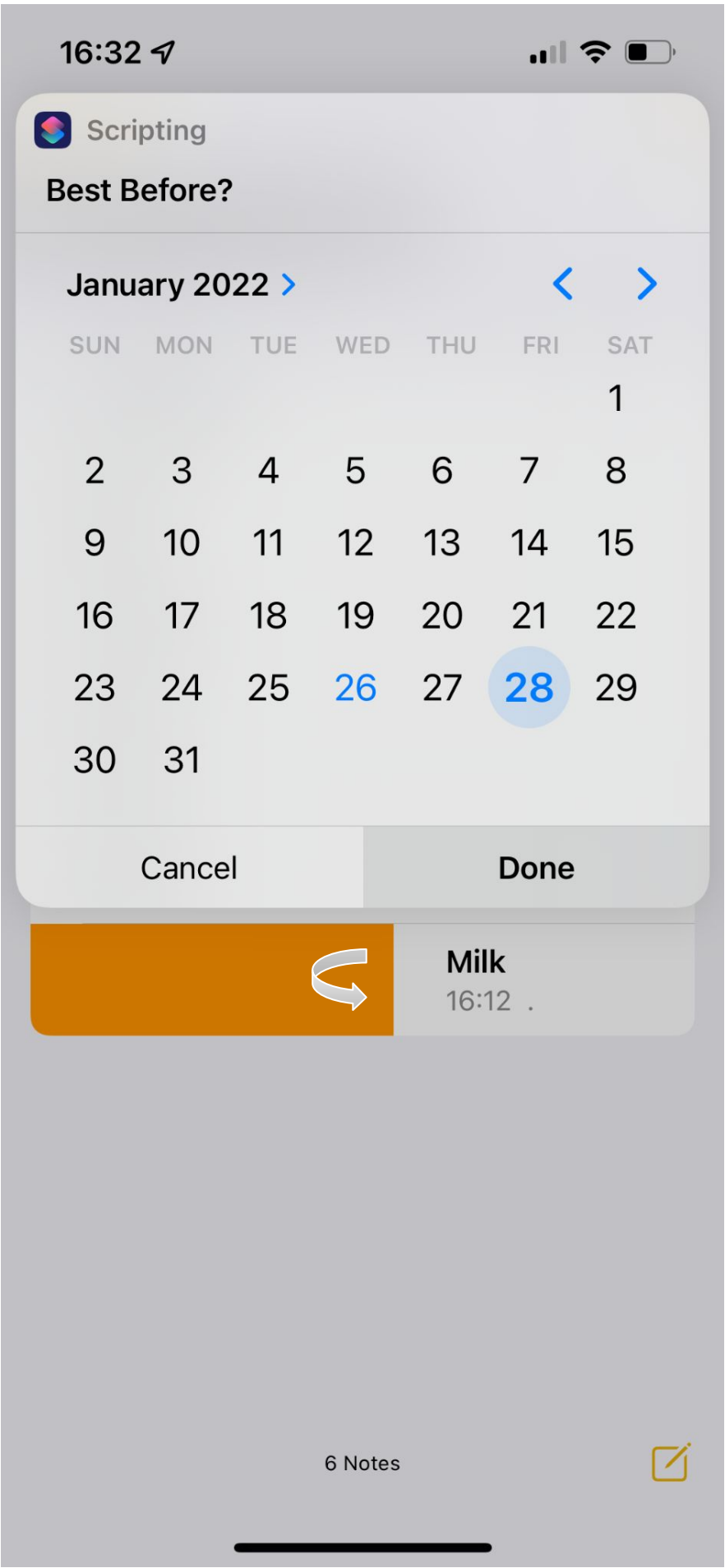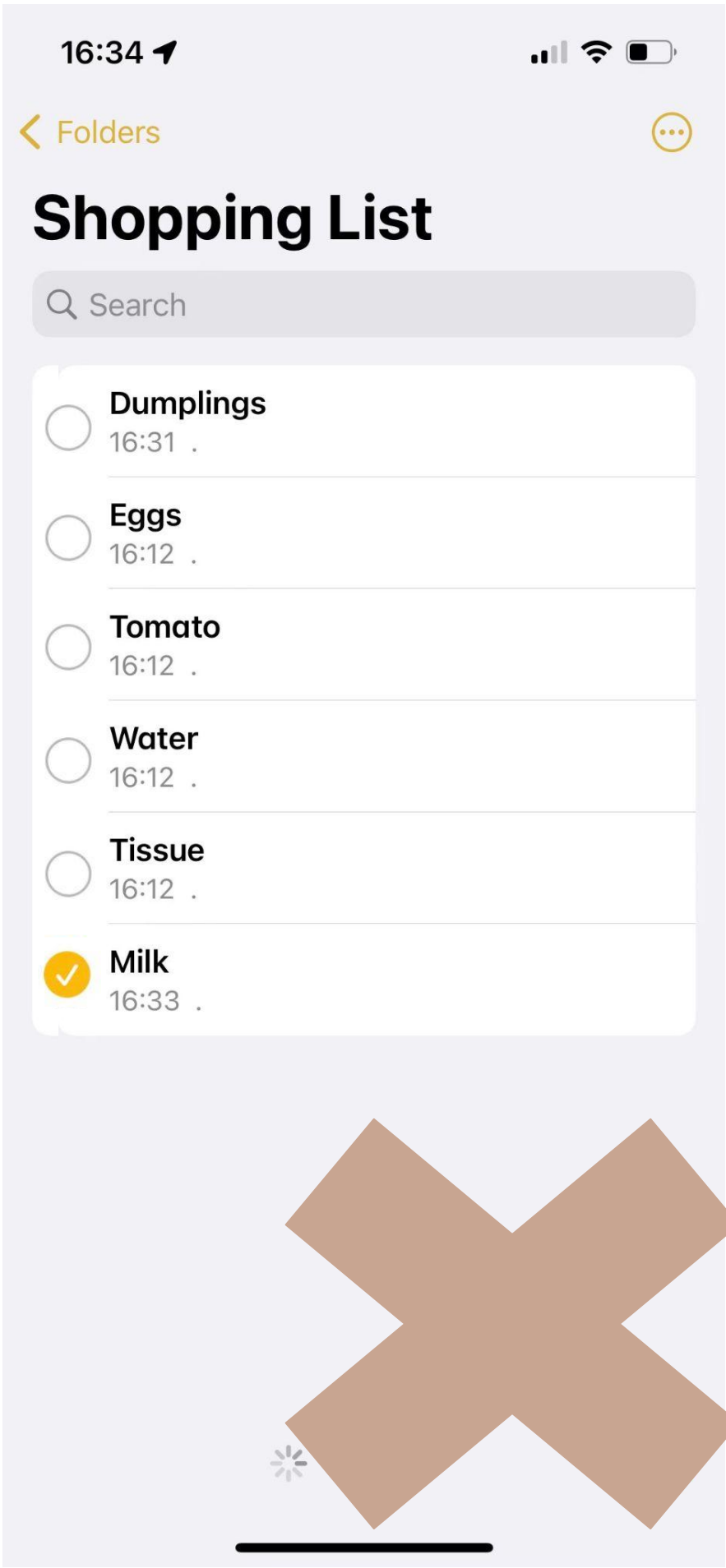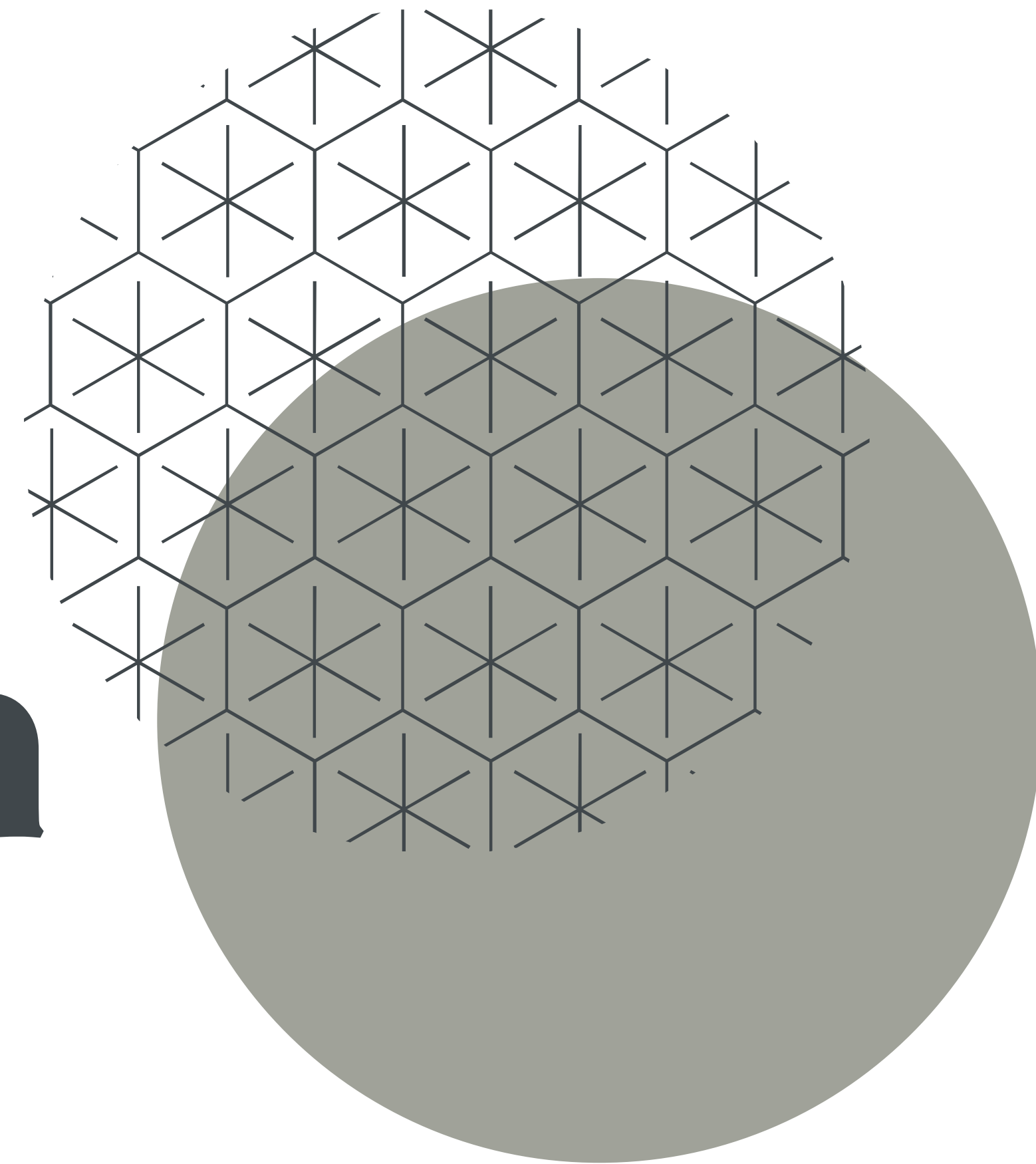
Project Plan
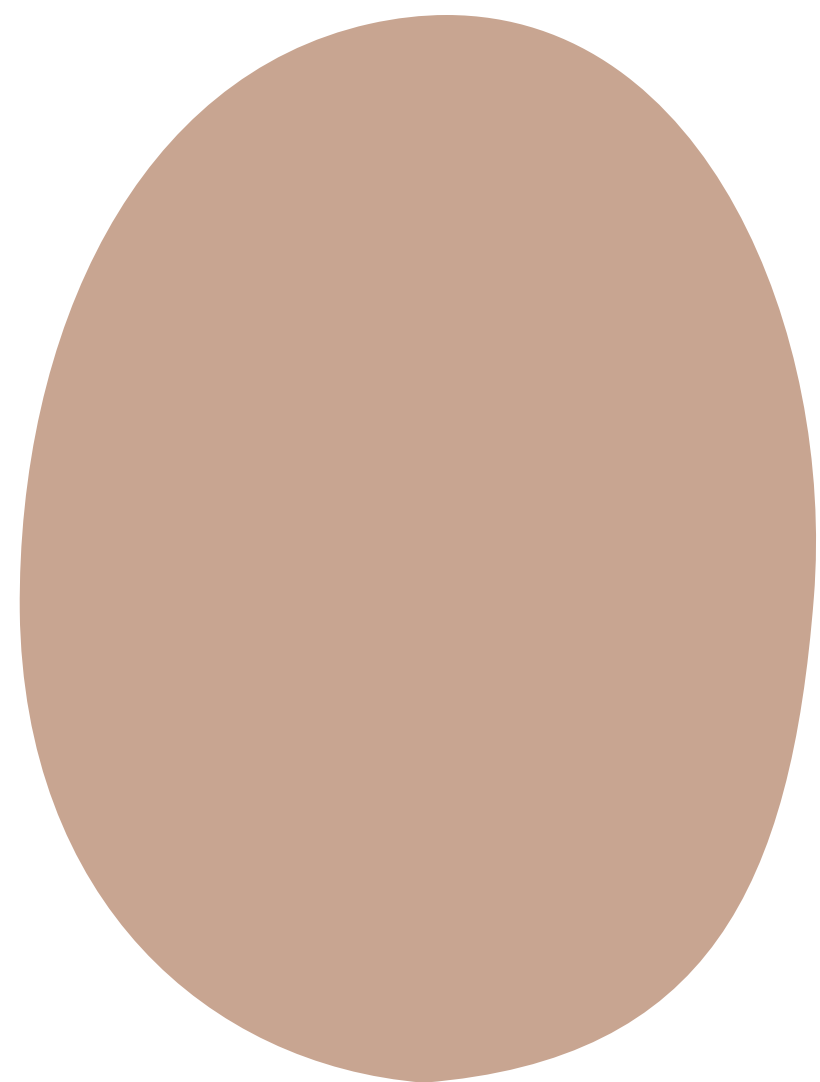
Constraints

Scope

Android application

A note–taking Mobile application built with Kotlin, with basic functionality to organize pieces of information.

Cost

Zero project budget

No access to paid resources such as project management tools and real Android devices.

Time

Course project

With only 3 months and 4 developers, and must be able to conduct a final demo on March 25, 2022.

Risks

Schedule & Performance

Activities may take longer than expected.

- reduce activity dependencies
- regular schedule reviews (sprint planning)

Lose access to Android

Rely on Android Emulator to build and test the application.

- willing to spend a reasonable amount on getting or borrowing a real Android device

Milestones

Planning & Requirements: Jan 10 – Jan 14

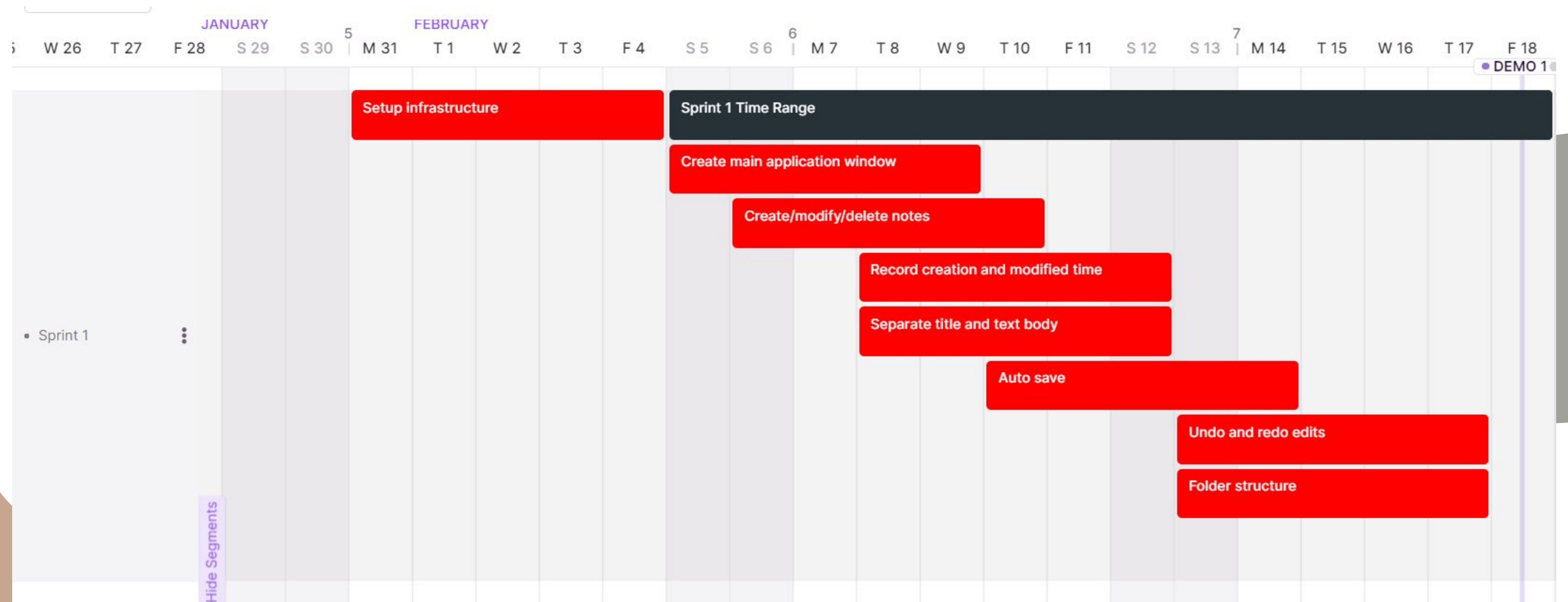➡️ **Analysis & Design:** Jan 17 – Jan 28

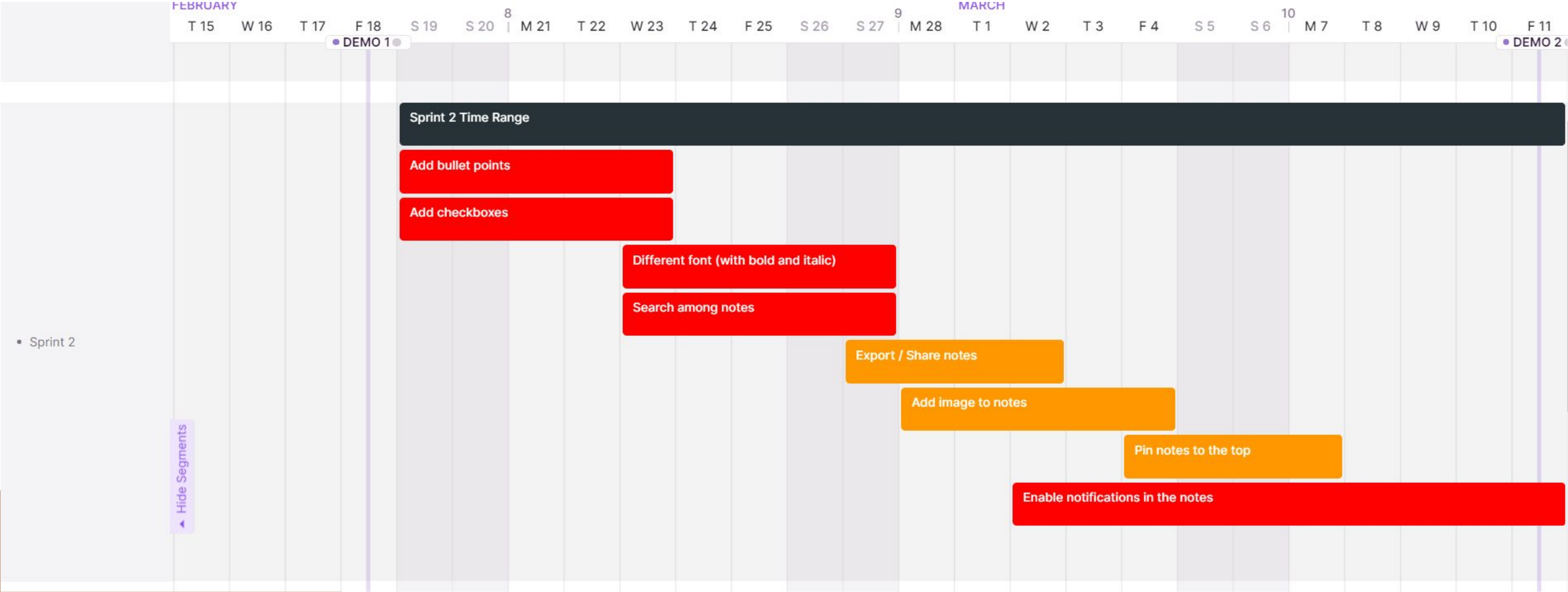Infrastructure: Jan 31 – Feb 4

Sprint 1: Feb 5 – Feb 18

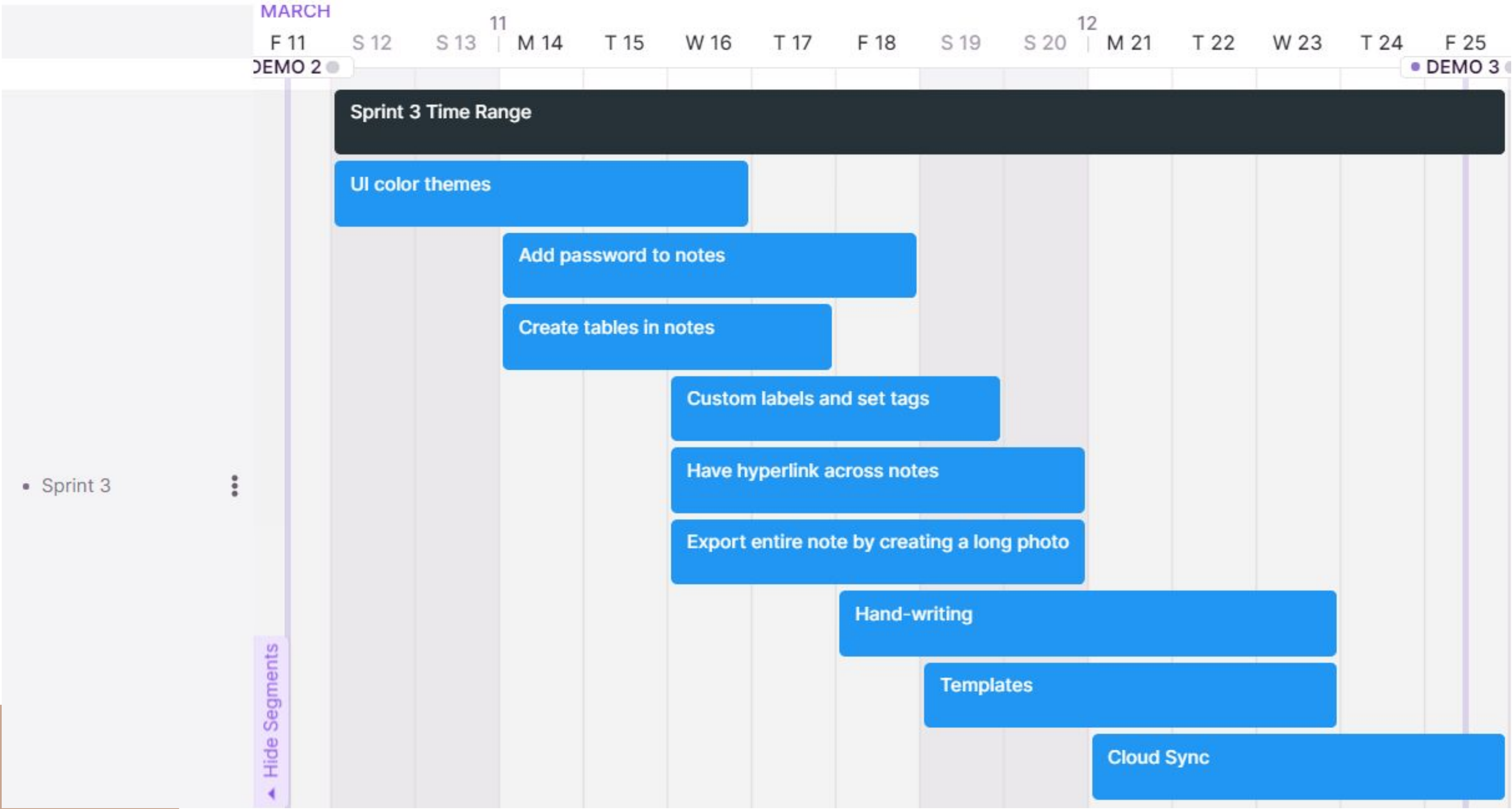Sprint 2: Feb 19 – Mar 11 *(Reading week)*

Sprint 3: Mar 12 – Mar 25

Infrastructure + Sprint 1

Sprint 2

Sprint 3

Requirements
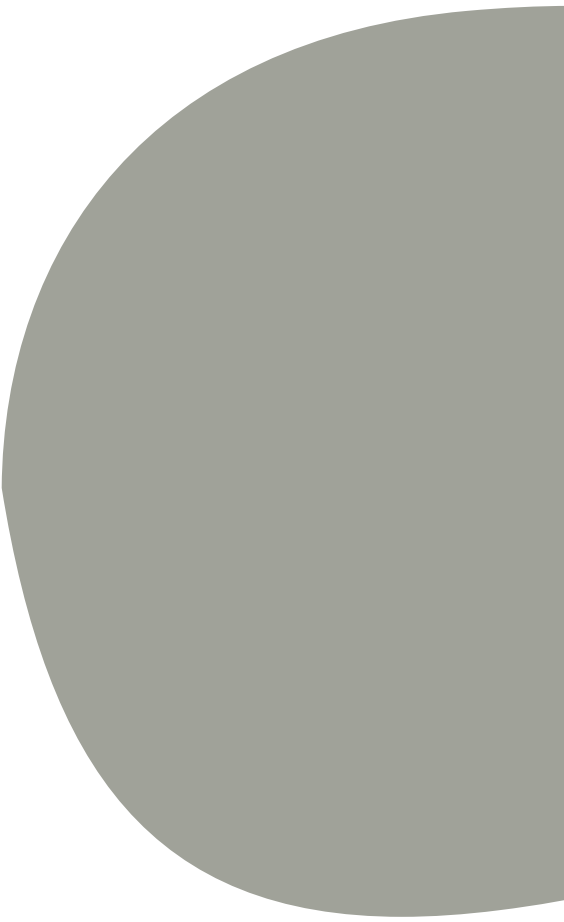
Personas - Student A

BIO
Student A has many exams and deadlines every day. He/she needs to efficiently manage them. Has missed one or two important assignments/exams.

GOALS
Need a mobile app to record and notify them so that he/she can be always on-time.

FRUSTRATIONS
- Hard to find most-needed note for the moment out of dozens of unordered notes.

- Cannot get notified even have recorded the specific time for that deadline/exam.

- Cannot give a color-scheme to different notes to set

Age: 20

Occupation: Student

Status: Single

Location: Waterloo

Archetype: Classmate

Personality: Forgetful

Personas - Student B

BIO

Student B has the need to go to grocery stores every week. He wants to be organized, so he has the habits to note down every single item he wishes to buy on his phone.

GOALS

Need a mobile app to create shopping lists, preferably with bullet points and checkboxes.

FRUSTRATIONS

- *Cannot remember what exact brand he wants to buy – need to take pictures of items at home to find matching ones*

- *Too many notes on the app and he cannot find the note which has the shopping list that he wrote*

- *List of shopping items may get too long and it's difficult to sort out all items he wants to buy in a specific grocery section (categorization)*

Age: 22

Occupation: Student

Status: Single

Location: Waterloo

Archetype: Classmate

Personality: Organized

Affinity Diagram
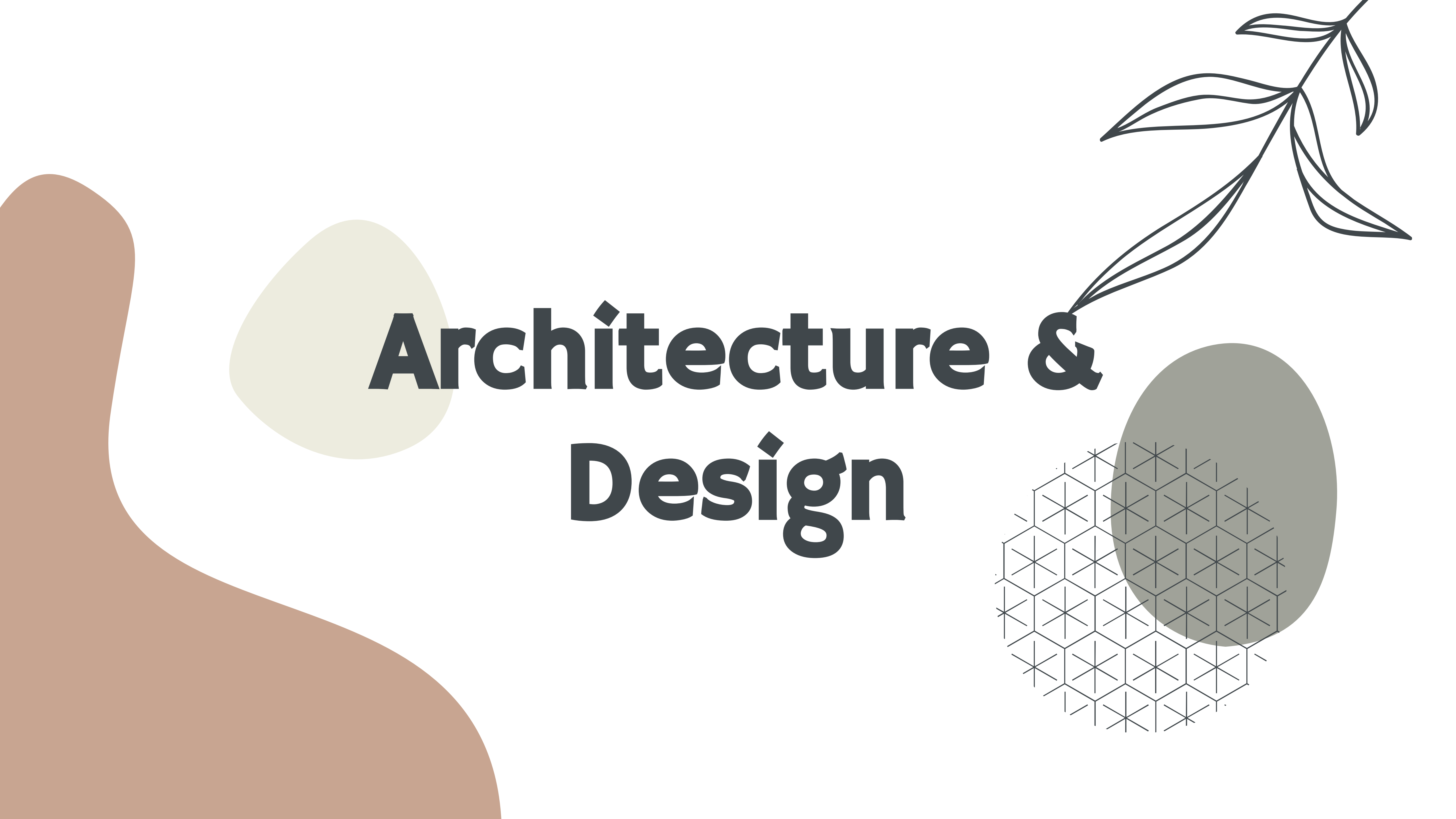
Key Requirements / Features

High

- ❏ Search among notes
- ❏ Separate title and text body
- ❏ Create, modify and delete notes
- ❏ Undo and redo edits
- ❏ Record modified time
- ❏ Auto save
- ❏ Different font
- ❏ Folder structure
- ❏ Bullet points / Checkbox
- ❏ Notification

Medium

- ❏ Pin note to the top
- ❏ Export / Share notes
- ❏ Add image

Low

- ❏ Create Table
- ❏ Hyperlink across notes
- ❏ Export note as a long photo
- ❏ UI color theme
- ❏ Hand-writing
- ❏ Templates
- ❏ Custom label and set tags
- ❏ Cloud sync
- ❏ Password to access notes

Architecture & Design

Technical Constraints

- **Kotlin** ⟶ Forced to switch to Android development

- **Libraries** ⟶ NotificationCompat APIs: *androidx.core:core-ktx:1.6.0*

  Encode/decode JSON: *kotlinx.serialization*

Non-Functional Requirements

- Performance
  - App should launch and restore all state in < 3 seconds

- Usability
  - Open a note in < 3 touches
  - Select different options for pencils in < 2 touches

- Localization
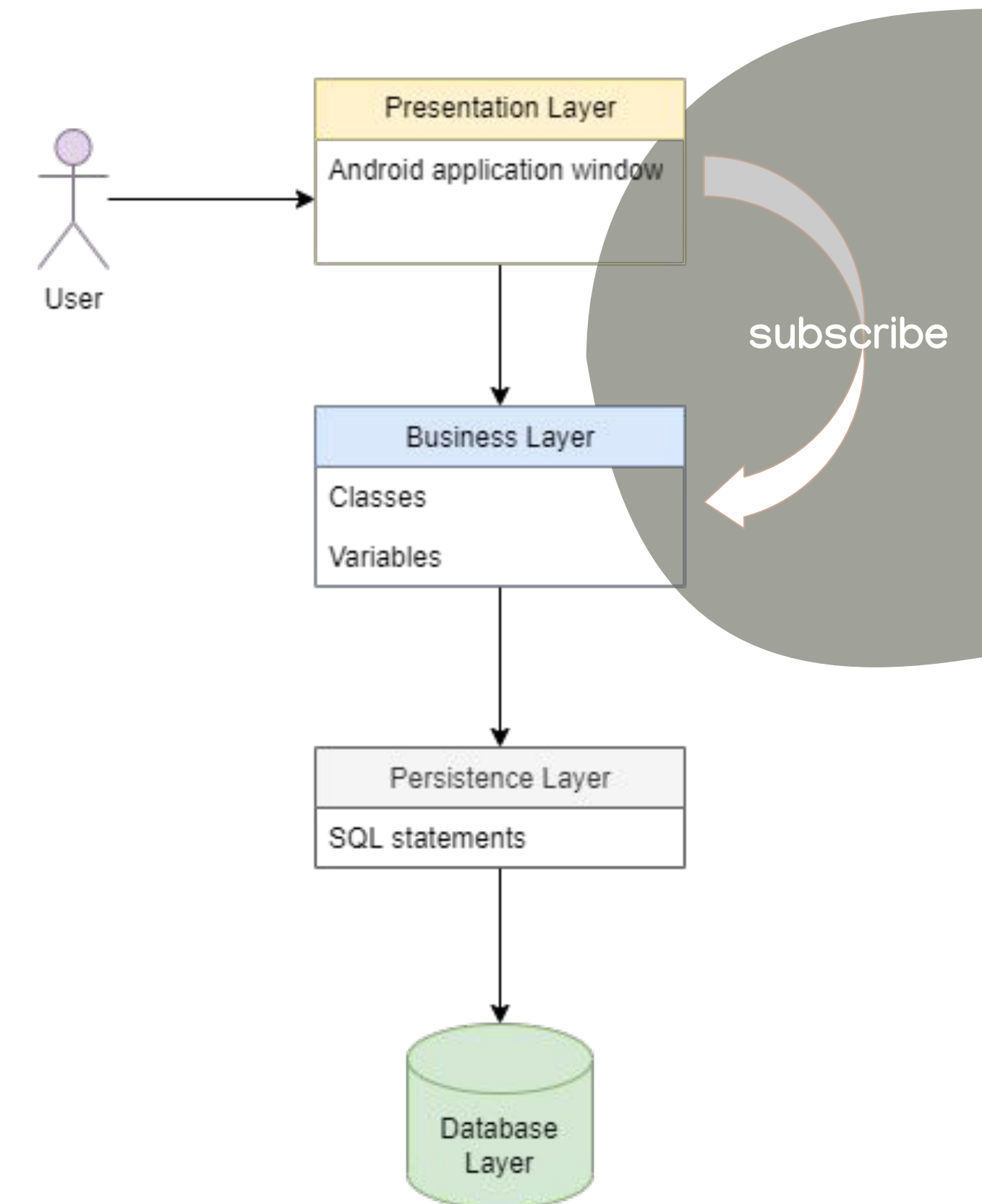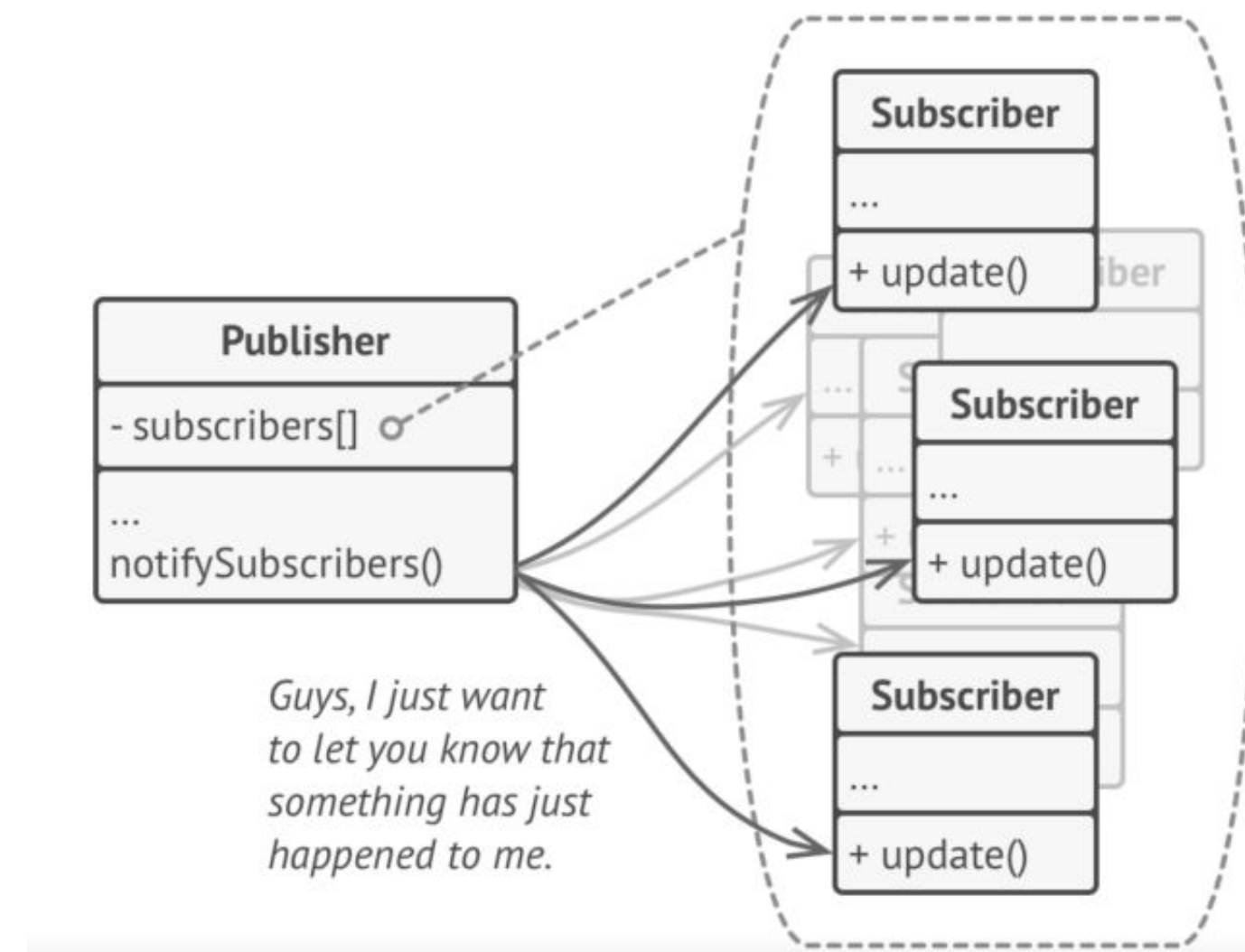 - Enter text in > 5 different languages to ensure special characters work

System Diagram
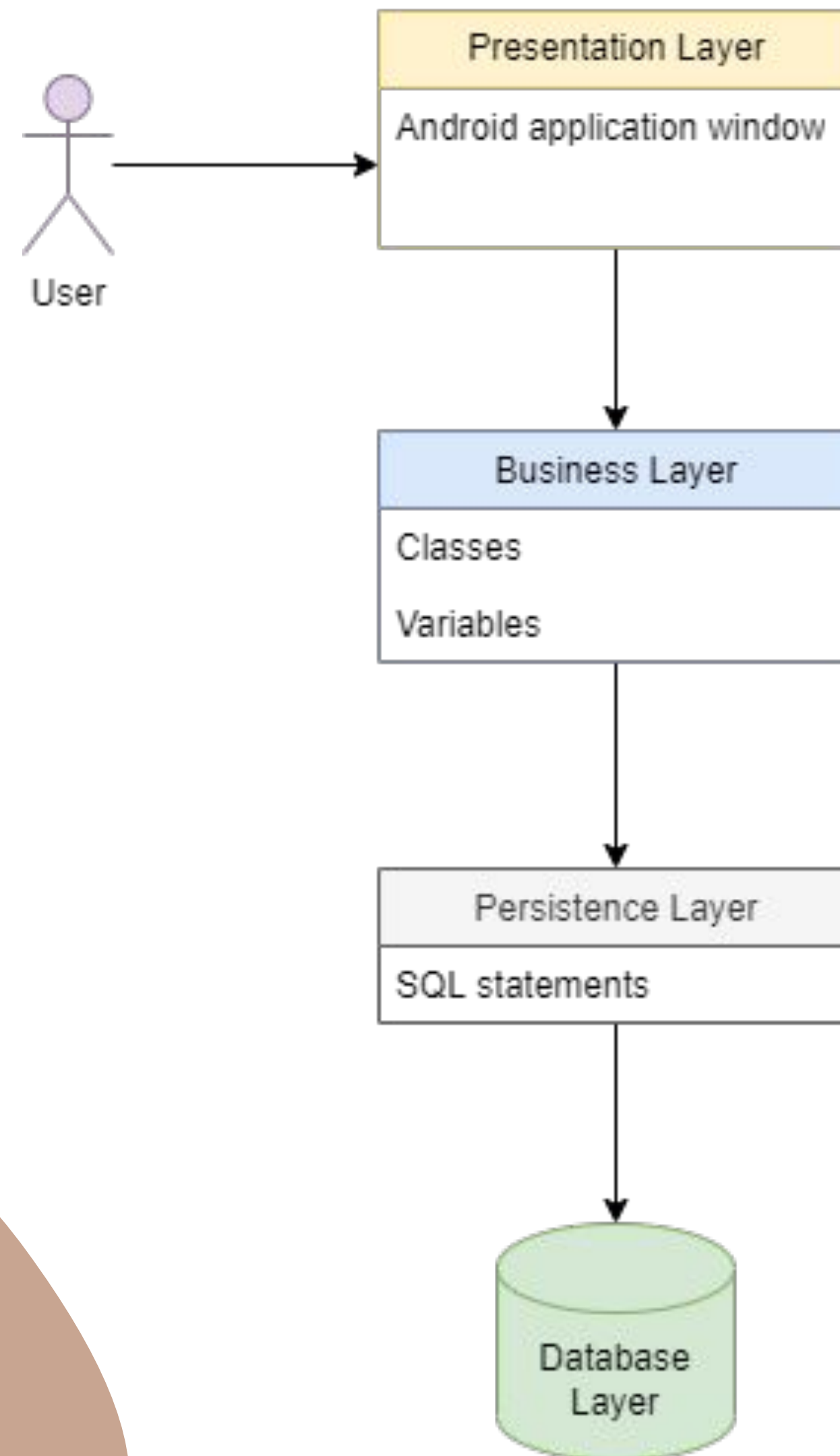
Layered architecture

Design Patterns

Singleton

```
object View {
  init {
    println("View class invoked.")
  }
  fun print() {
    println("Print method called")
  }
}
```

Observer/MVC

Screen 1

ツ All Notes   1000

▼ Snippets

　▼ School

　　📄 CS 398   500

　📄 Deadlines   20

▼ Shopping lists

　📄 Groceries   400

　　▶ Electronics

Edit

Screen 2

My Title

Blablabla...

My Other Title

Blablabla...

Screen 3

My Title

Blablabla blablablabla......
- List item 1
- List item 2
- ☐ TODO 1
- ☐ TODO 2

Aa

Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123

Thank you for listening! :)