



MEMORY DIARY





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About The System

- The app main focus is to develop a place where users can record every cherished moment into their **own personal diary**, and remember it for the rest of their lives.

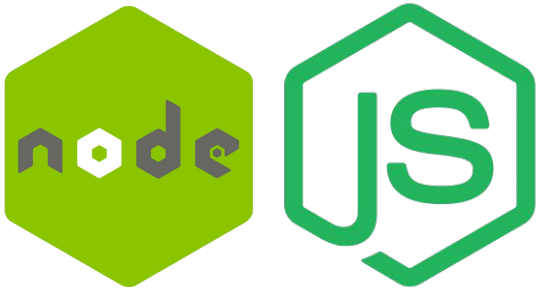
- All their memories will be within reach in the application that acts as their personal diary, so that they can view and add new memories **at any given moment**.

Registration To The App:

- The use of ***Google Cloud Platform*** as a whole, and the use of ***Cloud Vision API*** in particular, have enabled us to use a well-trained learning machine by Google to identify objects and elements that appear in the image that has been uploaded to a memory in the user's diary.
- Identifying image content is a necessary and central component for implementing an advanced search in an app.
- Advanced Search is measured in its ability to produce relevant results for a search query. This ability is endowed with identifying keywords that are relevant to a particular memory, even if not necessarily written in it.

- ***Algolia*** helps to create relevant, scalable, and lightning-fast search and discovery experiences.
- With Algolia we were able to build a **Custom Search Engine** for our needs.
- For each memory created, edited, or deleted, we had to **update the appropriate index** in the search engine, so that the search engine will remain reliable and will produce results as correct and relevant as possible.

- We have chosen to use ***Firebase platform*** as a database for all of the app's users, for the purpose of backing up the information and for the authentication process.
- The use of Firebase has helped us to **recover** users **lost information**, as a result of accidently deleting the app or **switching** to a new phone.



- In order to produce an **up-to-date search engine**, we had to listen to the events of adding new memory to the user's diary, editing existing memories or deleting memories from Firebase.
- For that, we have written a **server side code** in **JavaScript** that listens to the database changes made in Firebase Cloud Storage.
- When a create / edit or delete event occurs, the JavaScript code on the server side arises and interfaces with Algolia, **to update the search engine** with the relevant changes.

Main Feature : **Advanced Search**

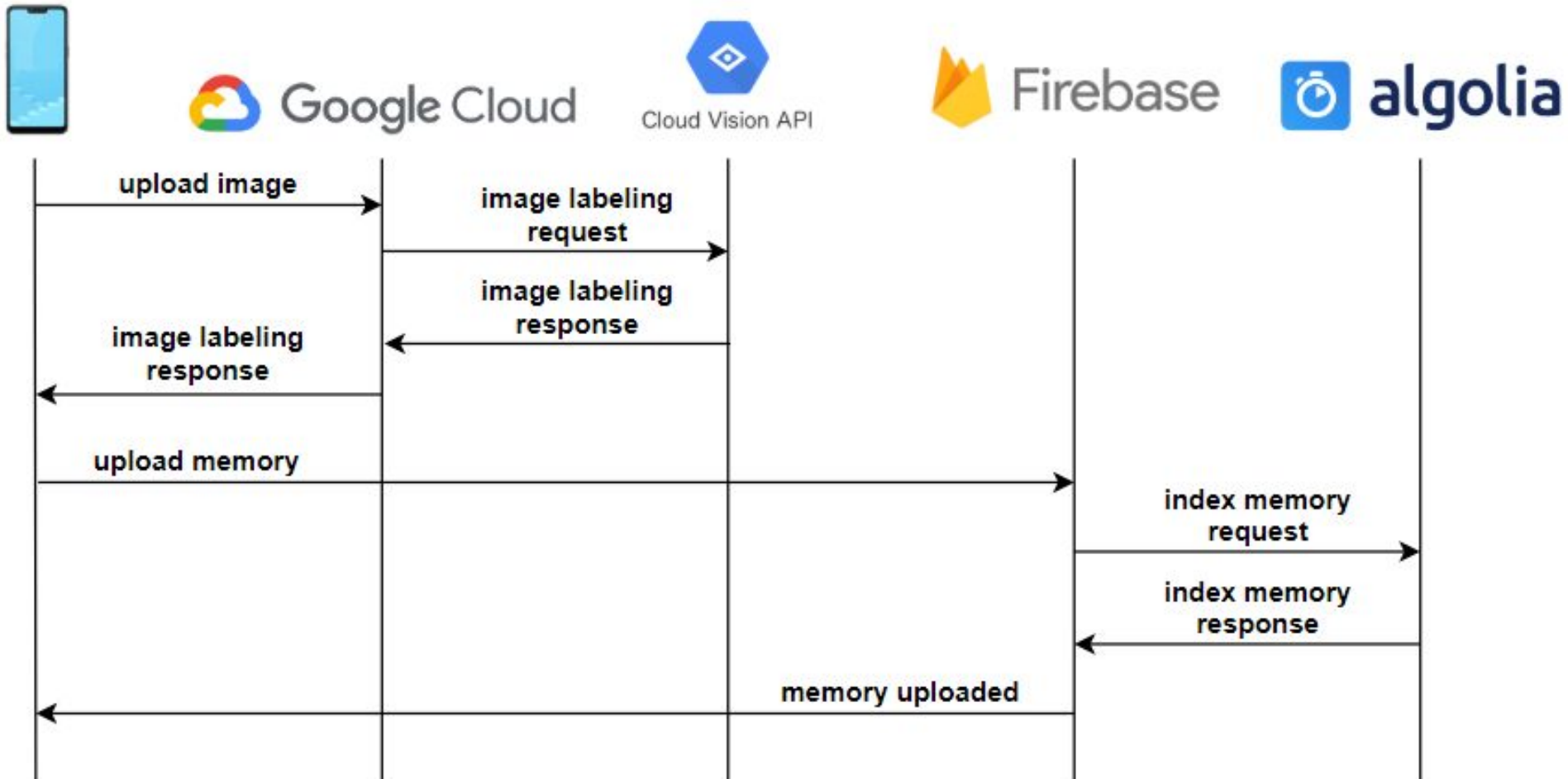
- In this app, we have implemented an ***advanced user search engine*** where it can search for memories that have been logged in the diary.
- The search we used was smart enough to show results for a **query** based on the photo that was attached to the memory.
- The user can also search for memories based on the **keywords** he wrote in the experience description, and the **date** the memory was created.

Main Feature : **Advanced Search**

The **implementation** of the advanced search is made up of **two** main steps:

1. Memory Indexing - Performs while creating, editing, or deleting memory.
2. Running query and displaying the results.

Memory Indexing : Create Memory Sequence Diagram



Creating Memory
&
Adding To Diary

Sequence Diagram :
Execute Search

Implementation of the Advanced Search Feature

- Most of this feature **implemented in Kotlin** language. Kotlin is a modern and innovative language designed to run on **JVM** and specifically developed for Android app development.
- We have chosen to learn to develop in Kotlin language to experiment with another programming language **besides Java**, a language we have not learned before, and to **gain experience** in an ever-evolving language that is becoming increasingly popular in Android application development.
- As well, the code responsible for listening to the changes that are made in Firebase Cloud Storage, and updating accordingly Algolia we wrote with **Node.js** in **JavaScript** language.

Feature II - Backup in the Cloud

- We see great value in providing the ability to backup and restore lost information, especially as it is **sensitive information with great personal value**. Today, for most advanced applications, such as Whatsapp, there is the option to backup and restore user personal information.
- While designing the app, we chose to store all user memories in **Firebase Cloud Storage** rather than a local database on the user's device. We made this choice because we wanted to allow the user to recover lost information as a result of deleting the app or moving to a new phone.
- In addition, storing the information in a cloud database will allow us to develop additional user interfaces **in the future**, which can also create, delete or edit existing memories through the browser, desktop application or any other interface.

memory-diary-17156

- Diary
  - BLdd2DUstmfSko5QNnCmKXzLBS52
  - H4KPWJO7gEeRIV9vR2qh9xDrT1C3
  - c05SkAvf5JM6eWAqkikc8wus7CA2
  - gj4bX9JRbpY3U0IgkMGq34ahm6g1
  - njPHDp5oURcNZeHJMBwtUUk6xUd2
    - -LoGCZ-nRa1FdK40rV42
      - creationTime: 156795206369
      - description: "We visited some random waterfalls that we found
      - imageLabels
        - 0: "Sky"
        - 1: "Mountainous landform
        - 2: "Mountain
        - 3: "Cloud"
        - 4: "Landscape
        - 5: "Highland
        - 6: "Tree"
        - 7: "Hill"
        - 8: "Fell"
      - imagePath: "https://firebasestorage.googleapis.com/v0/b/mem
      - memoryId: "-LoGCZ-nRa1FdK40rV4
      - memoryTitle: "First day in Icelan
      - userId: "njPHDp5oURcNZeHJMBwtUUk6xU
    - -LoGSO29AfV4UoknTmQK
  - se5b8hpJD5MKxjRH1YRuZobayEB3
  - xZfbupNFJrd2ff6DNCYqdXXODue2

-LoGCZ-nRa1FdK40r...

Name
-LoGCZ-nRa1FdK40rV42.jpg

Size
52,394 bytes

Type
image/jpeg

Created
8 Sep 2019, 17:14:05

Updated
8 Sep 2019, 17:14:05

File location

Other metadata

Feature III - Memory Tagging & Sharing

- The application supports sharing a certain memory to a contact **via phone number**. The user can send a copy of a specific memory he has in his diary to an acquaintance of his, be it someone who had been with him and experienced the same things as him or else.
- The acquaintance will receive a **cloned version** of the memory and will be able to choose between deleting it or accepting it. Upon acceptance, the memory will be added to his own diary **without any connection to the original**, so he could edit it as he have experienced it.

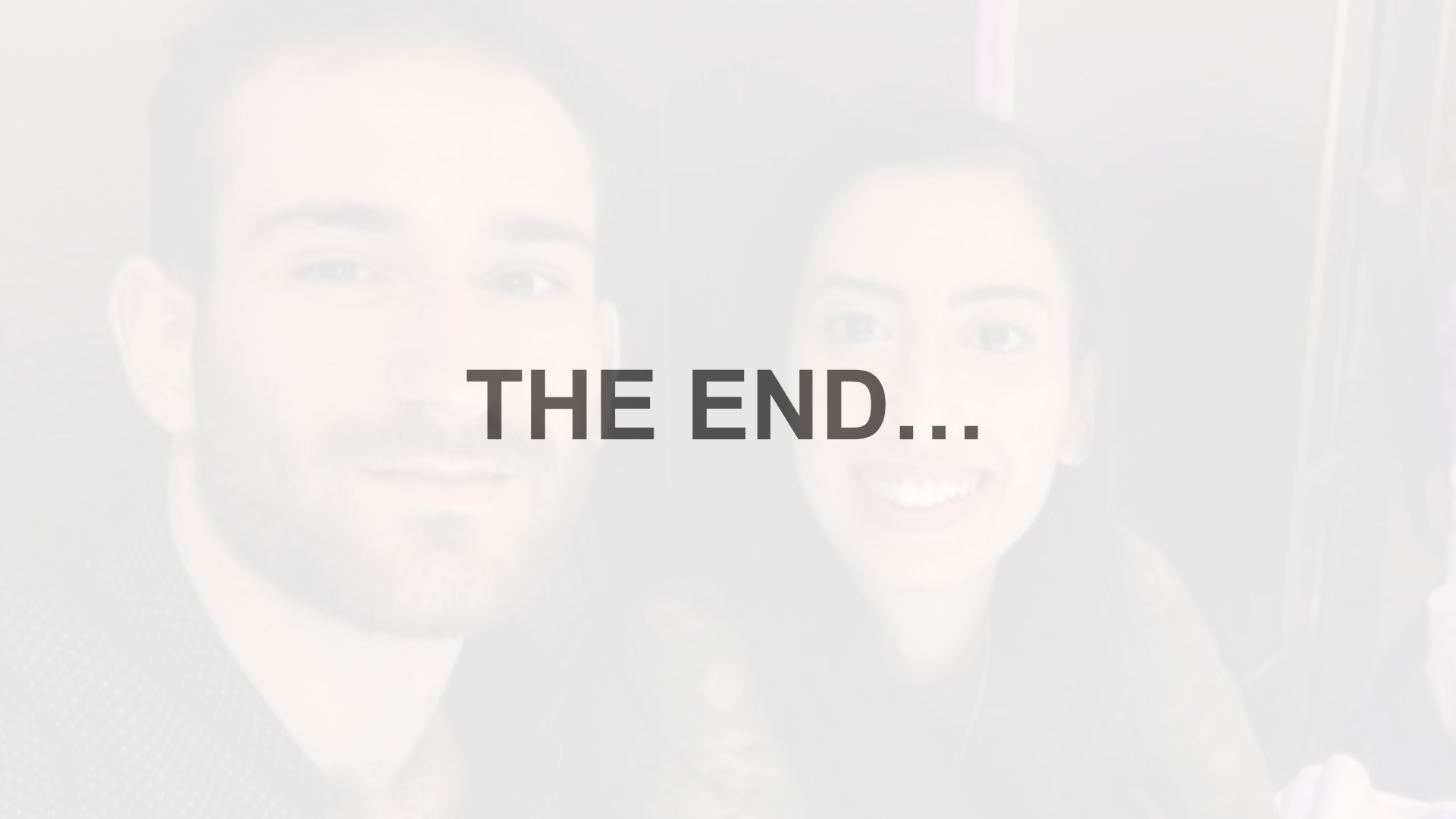
Tagging & Sharing an acquaintance

From the acquaintance side...

Feature IV - Smart Notifications System

- Once the user first logged to the app, the system analyses once a week the amount of **photos taken** in a day and calculates the **average**.
- Then, every time the user goes above average in a day, the system interprets it as a possible new memory to document and **notifies** him of it.

For example, the user goes out on a trip and takes more photos than usual with his phone, the system will notice this change and send a notification asking him if he wants to document something in his diary.


THE END…