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Bachelor Thesis

Milestone 1

Enriched Digital Diary

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Project description

Visiting new places enthruses users to shoot photos.gq In addition to the pictures, users can record a voice narrative or even a video on those visited places. Users usually possess several devices, i.e., mobile phones, cameras, and other devices, which can be used to generate different kinds of digital content. Having generated diverse multimedia digital content that can be linked to a place or a specific activity, users require a helping tool that enables them to organize those generated multimedia content in one multimedia document. We will call this multimedia document "Digital Diary". It is expected from the device to perform some analysis tasks on the generated multimedia content to identify some subjects that those content encode. You can consider this analysis task as an added value for our tool. Once those encoded subjects are identified, the device retrieves additional data about the subjects from open linked data provided, e.g., DBpedia, and includes those retrieved data in the Digital Diary.

Technology stack

Android

Java

Git

SQLite

Data analysing

Google Cloud Vision AI - note: bay be changed to a free version depending on needs for the project

DBpedia – Provides further information of the data returned from the Vision AI

Alternative: JWPL (Java Wikipedia Library) - free, Java-based application programming interface that allows to access all information in Wikipedia. <https://dkpro.github.io/dkpro-jwpl/>

Google Maps sdk – Used to present the location return from the DBpedia analysis

Mock-up and Acceptance criteria's

Registration

A user will need to set up an account after installing the app, so that he can confirm his login options (fingerprint and pin).

- The login page has three fields namely name, PIN and the possibility to scan the fingerprint of the user
- After entering the name, the user needs to set up at least one of the options for login.
- After entering the confirm button an account will be created and the user forwarded to the Login page.
- If no pin is entered nor the fingerprint set up, an error message will appear that the account creation is not possible.

9:30

Set up Account

Name

Enter PIN

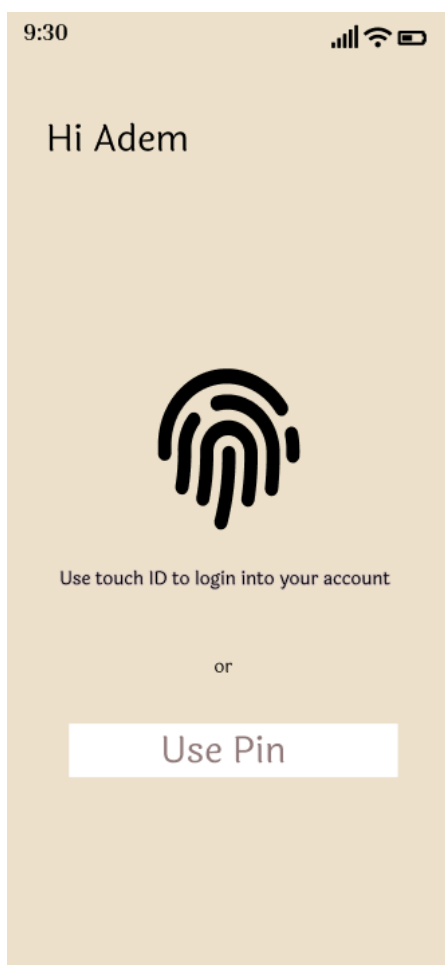
Link your fingerprint

Confirm

Login

A user needs to log in into his account, that was previously created in the registration, to be able to create, edit, look, etc... his daily stories.

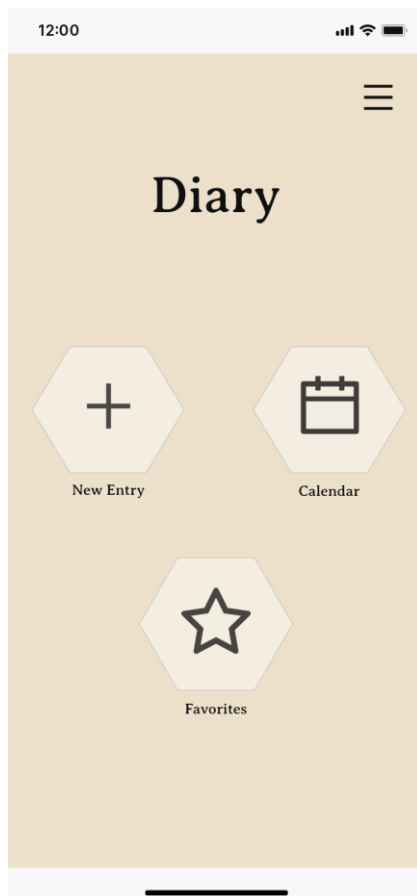
- The login page has two fields, email and password and two CTA buttons, create account and forgot password.
- After inserting the correct data into these field and pressing the login button, the user will successfully login and forwarded to the home page.
- In case the credentials were wrong an error message will pop up.
- The create account CTA button will lead the user to the registration page
- Forgot my password button will send an email to the user with his current password



Home Page

After Login, the user lands on the home page. The home page has three options:

- New entry – created a new entry. User is forwarder to the newEntry/Edit page (further described in the newEntry section)
- Calendar – Listing of all entries
- Favorites – Same as Calendar but will only displayed the favourite entries that were marked before

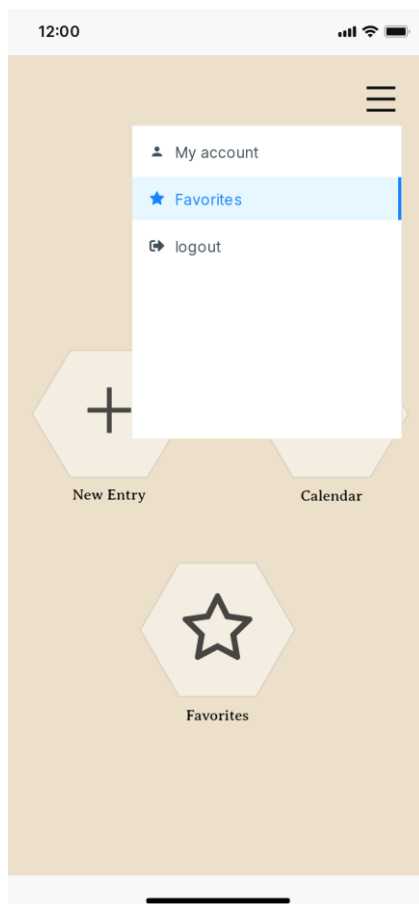


Menu

Menu will be set to the top right side. Clicking on it will open further options that the user can go to certain areas, like my account, favourites, categories.

The option logout will logout the user from his account.

Additionally, there will be an option to reset the pin, in case it is forgotten, only if the user logs in with his fingerprint.

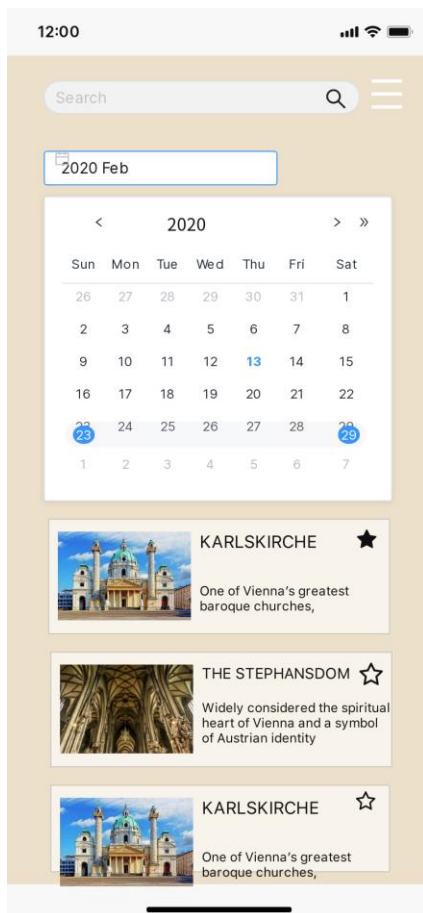


Calendar/favourites

The Calendar page will list all entries.

- The dates in the calendar will be marked if for that that day, at least one entry is present
- By clicking on a specific date, the list should show just the entries for that day and filter out all other
- By using the search field, the user can filter entries by title
- Selecting one entry, will forward the user to the entry page

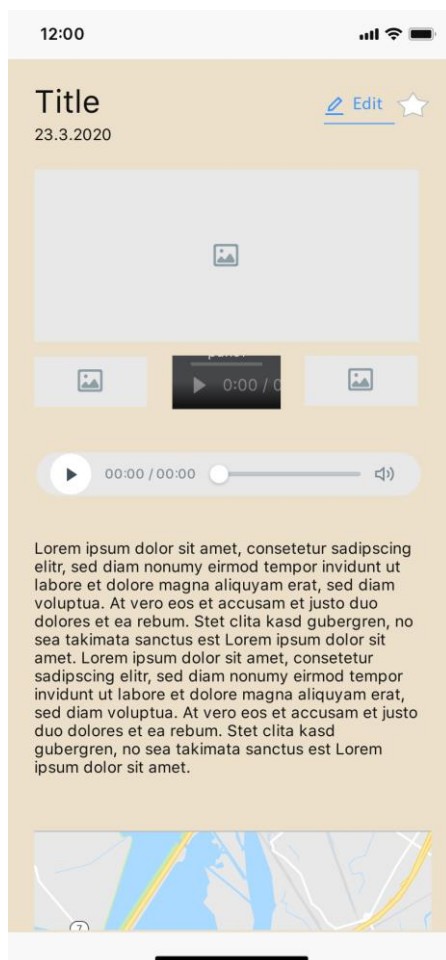
The favourite page is a listing of only entries marked as favourite.



Entry

An Entry page will display all the information that the user entered himself or got from analysing the images that were taken.

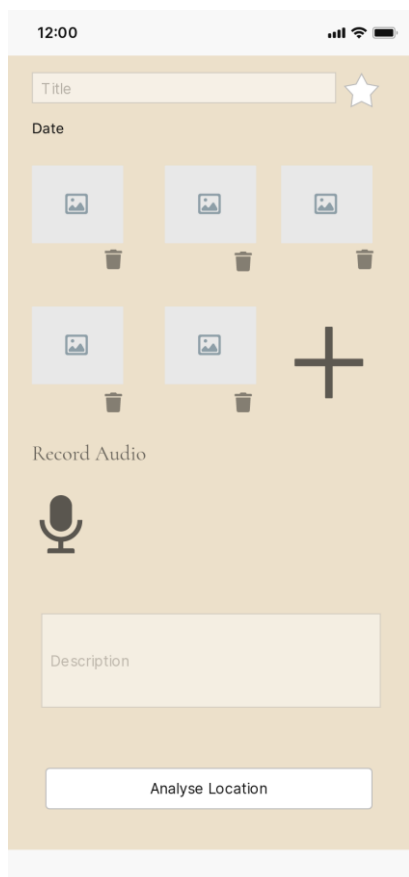
- Images and videos will be displayed in a slider
 - On first opening the first image/video will be displayed above the slider
 - Selecting an image/video will replace the image above
 - Swiping left and right is possible to change between the pictures
- Audio section (optional) - recorder audio from user can be played
- Description section (optional) - will contain textual information entered by the user and/or information received from analysing the Images
- Location (optional) - displays a map with the location of the entry, pointed by the user or provided by the analysed data
- Edit button – upper right corner. Clicking on the button the user is forwarded to the Edit page where he can edit the data of the entry
- Favourite button – marks the entry as favourite
- The date for the entry represents the day the entry was created



Edit/Create an Entry

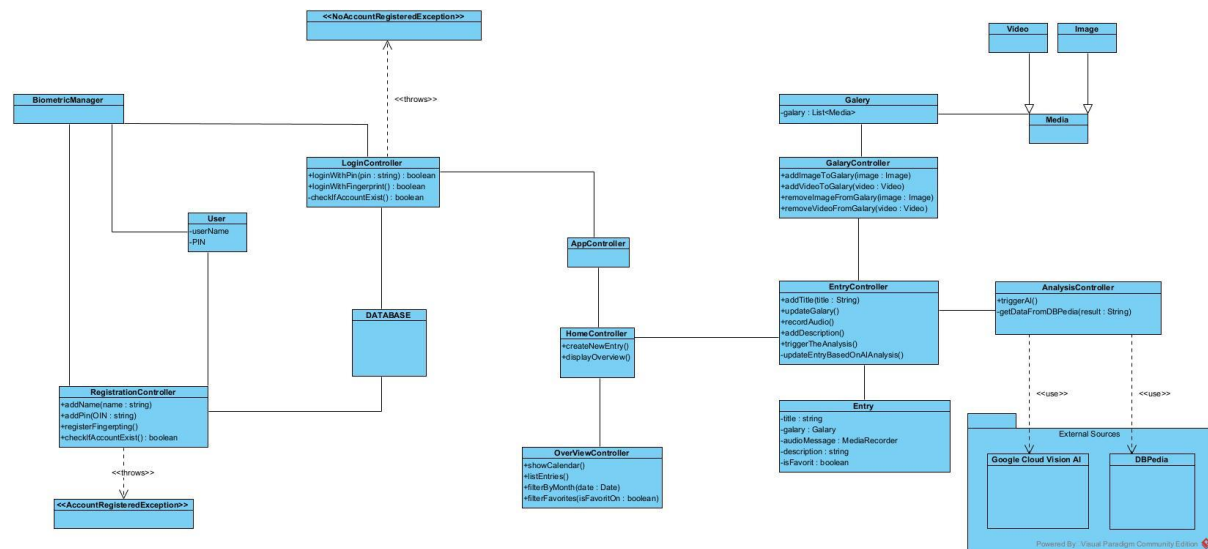
This page is for creating new entries and editing already existing ones.

- The user needs to enter a Title for the entry.
- The date is generated as the date of the creation of the entry (note: see questions section)
- By clicking on the plus sign, the user can add images to the entry:
 - Add images/video from the gallery
 - Open camera and take a picture/video
- The is able to remove images, by clicking on the bin underneath the individual images
- Pressing and holding the record button will give the option to save an audio
- The description can be entered manually by the user and adding the date provided by the analysis to the already existing one
- Analyse button will start the process of analysing our provided image.
 - In the background the image will be sent to the Cloud vision AI for analysing of the object, location, etc...
 - Addition data will be fetched for the result over the DBpedia
 - After additional data is fetched the user will have the possibility to add that data to this entry like coordinated, categories



The image shows a mobile application interface for creating an entry. At the top, the status bar displays the time 12:00, signal strength, Wi-Fi, and battery level. The app interface has a light beige background. It starts with a 'Title' input field and a star icon. Below this is a 'Date' label. The next section is for images, showing five placeholder boxes with image icons and trash bin icons underneath. A large plus sign is to the right of the image placeholders. Below the image section is a 'Record Audio' section with a microphone icon. At the bottom is a 'Description' input field and an 'Analyse Location' button.

UML class Diagram



Questions

Should the date be editable if we want to create an entry for a day that already passed?

Best option when to trigger the analysing of the images?

Possible work:

Scenario: buying new phone

How to extract data into a file and upload file to app on the new phone

Or sync data with NFC

What to do if mobile is lost?

Make an option to send extracted data do mail

As future work

Add feature: Categorizing entries based on returned data from the AI and DBPedia and represent in diagrams.

Insert those categories to the calendar page as filters.

Notes

Clarifai.com community schnitstelle instead of google cloud AI

Filter als checkbox darstellen

Google map map darstellung und einen link zu google maps

Description and audio generalisieren zu Media