Prevision documentation

Refugee Integration and Digital Education, Literacy & Refugee Children

Team 36

Abstract

First steps is an app to assist refugees who have just arrived in their host country via the use of AI to provide tailored information based on background regarding cultural education, lawful education, nearby amenities, and settlement guidance.

Our aim is to make the transition into a new host country as smooth and comfortable as possible for refugees. Our app aims to make vital information accessible to those of any background and language, as well as provide necessary navigation to those finding themselves in a new place.

MoSCoW feature list

M - Must have this requirement

- **Local laws - rights + responsibilities**
    - Sub-topics: Homelessness, Traffic, Basic – Theft, Assault etc., Child safety, Women's safety, Exploitation – refugee protection
    - Not patronising
- **Cultural education**
    - Sexes
    - Etiquette + mannerisms
    - Useful phrases
    - Secularism
    - Rate info - show most useful based on background
        - Rate the information so the order of the information on the list changes
- **Settlement Education**
    - Housing advice
    - Getting children into school
    - Basic language education resources
- **Map: Filter which include**
    - Homeless shelters
        - Amenities: food, showers, financial support, internet cafes
    - Food banks
    - Water foundations
    - Clothes donations
    - Supermarkets
    - Western unions
    - Charging facilities
    - Security - police station
    - Local community hubs
        - E.g. Iraqi refugees access to communities
    - Crisis centre – money help, abuse
        - Safety + security a last resort
- **Must be useful offline**
- **Must translate into any language via X5GON platform**

S - Should have this requirement

- **Finance**
  Currency conversion
    - Basic education
        - How to open bank account
        - Minimum wage laws
- **Emergency/Panic button**
    - Based on location of person
    - Calls the cops/ambulance
- **Real-time Language Translation**
    - TTS – text to speech
    - Communication in multiple languages

C - Could have this requirement

- **Child protection details**
    - Contact details?
    - Where to go?
    - Signs of abuse/child exploitation
    - Advice for children: how to deal with abuse, recognising and reporting it
- **Battery efficient**
    - Avoid overuse of internet access and unnecessary streaming of data
- **"GP" registration**
    - Introduction to health service system in host country
        - Payment
        - Insurance
- **More general tailored education via X5GON based on educational background**
    - Including education in language of host country

W - Would like to have this requirement

- **Communication platform**
    - For people of similar cultural background

Consideration of Approach

Personas

Persona 1

Yara Amari

Details

- Refugee from Syria
- Doctor - general practitioner
- Widowed
- Mother of 2 young children aged 11 and 9
- Native Arabic speaker, can speak English reasonably but can't read it.

Quote

"I want to give the best life to my children as I can"

Motivations

- Wants to get into work quickly, preferably doing what she trained in.
- Wants to get her children back into education as quickly as possible
- Wants to stay connected to her cultural roots

Goals

- Yara does not have a lot of money to pay for her phone bill so the app needs to be data-efficient
- Needs quick and easy access to relevant information
- Wants clear directions to locations of interest

Pain Points

- Buggy software
- Badly translated text

Abdul Baatin

"I am glad to have escaped the violence in my home country. I now want to move forward in my life."

Abdul fled violence in his home country of South Sudan to seek refuge in neighboring Kenya. He travelled alone and hopes to send money he makes back to members of his family still in the country.

Name Abdul Baatin
Type Single Refugee
Role Plumber

Motivations

- Wants to get back to work as quickly as possible
- Wants to stay connected to his cultural roots

Goals

- Abdul needs help navigating a complex settlement process in the region, and hopes the app can provide this.
- Abdul speaks little Swahili and wants the app to assist his communication in his day to day life.

Pain points

- Translation tool not working fast enough
- Inaccurate information
- Poor internet connection

Behaviours

Knowledge of local area

Knowledge of the local language

Determination

ThoughtWorks

Use of AI and Open Education (X5GON)

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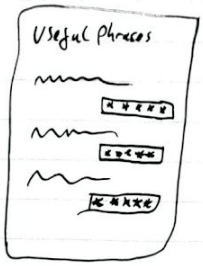
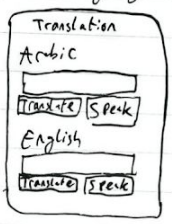
AI

- Ranking system
  - "star" ranking system used to determine usefulness of information
  - User can be shown info deemed useful by those of a similar background



- Translation in real time
  - This can either utilise an existing api (Google Translate) or be built from scratch
  - Allow direct text-to-speech communication within the app
  - Pre-selection of user's language & language of host country

e.g.



XSGON

- Translation API
  - Translate app contents to required languages
    - allows faster production time as app does not have to be manually translated multiple times.

- Language resources
  - Provide basic language learning resources via XSGON to speed up and allow for easier integration.

Use of publicly available information

After some consideration and research into what kind of information is available via platforms like https://toolbox.google.com/datasetsearch, we decided that the feature list of this app does not really require such information. The information within the app is either accessible via the X5GON platform or so specific, sensitive, and subjective that it will need to be manually added (e.g. cultural information). Such a task needs manual vetting in order to ensure authenticity and accuracy, especially when topics can potentially be quite sensitive.

We did however decide it may be useful to include carefully vetted videos from other platforms, such as YouTube.

Fictional Graph and Qualitative Reporting Views of the simulated data collected by the app:
Real world data such as sample videos we would use in the actual app has been included in the prototype (e.g. language content from youtube).

Fictional Data Insights and Logs of its features usage to inform developers for improvements:
We picked a few different aspects of user interaction to include logs of. Examples include aggregate user rating of content by logging each user rating, time taken by user for each task etc. Obviously this is only an example and the developers of any real implementation should decide for themselves what they want to log details of.

App vs Web view

We primarily designed this software to be an app. The website prototype was created to fit the brief but we don't believe it should ever actually be implemented as such. Many of the app features, e.g. the map and translation tool, is designed to be used when outside and away from a traditional computer.

Key algorithms

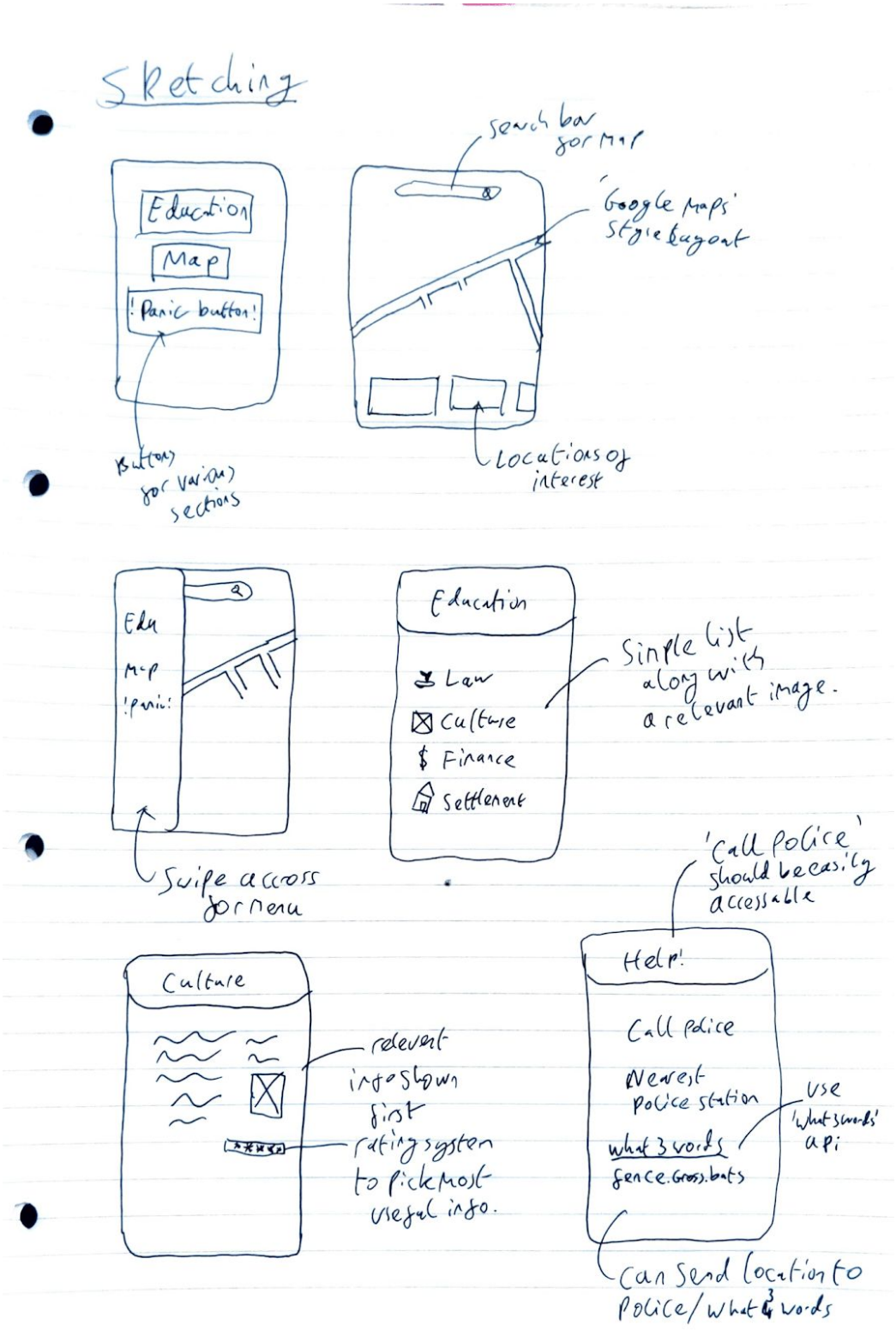
Our app utilises a number of different algorithms for its various features. Key ones include:

- Maps
    - Either in-house maps system, or most likely utilise a third party resource e.g. Google Maps API
- Education information
    - All relevant education information for the various categories including law, culture, finance, and settlement must sit in a central server. AI can be used to determine the most relevant information to display to the user based on background, language, host country, education level, and what others of a similar background have rated as ‘useful’.
    - The algorithm must also be able to save information offline.
    - Algorithm can pull relevant information from the X5GON platform.
    - The algorithm could also pull relevant videos from Youtube / X5GON.
- Panic/Emergency button
    - Could have countdown until police are called in order to avoid accidental calling.
    - Could send location directly to police or utilise the What3Words API to allow users to quickly give their location to the authorities.
- Translation
    - The text-to-speech translation feature can either use the translation API from X5GON or the Google Translate API
    - The text to speech feature can either be home-built or utilise algorithms from various companies including Google.
    - As we know the language of the individual as well as the host country, we can just assume the languages that will be translated from and to, making it faster and more convenient for the user

Sketches

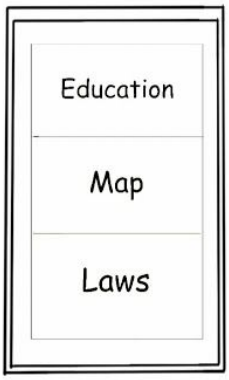
Initial

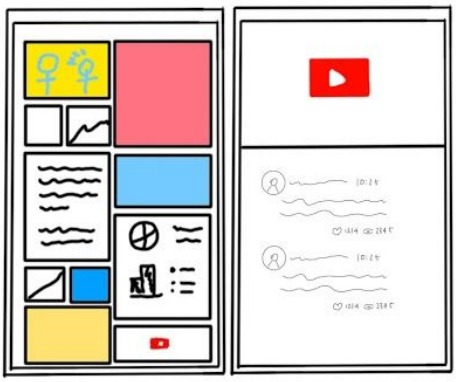
We quickly came up with some rough ideas for how the app should look and function.



Revised

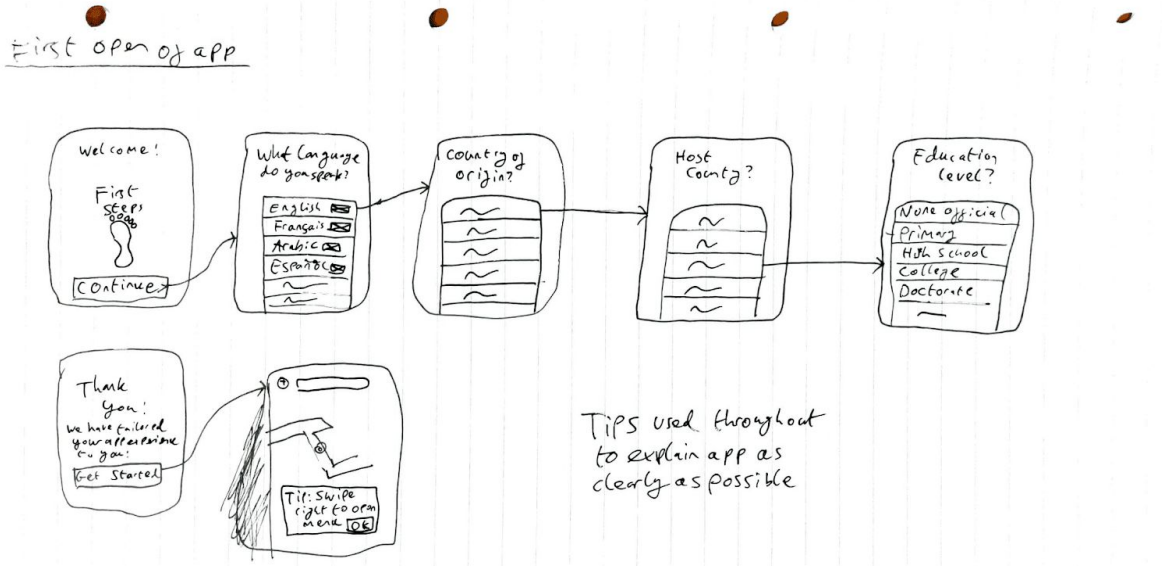
We formalised them a bit into these digital sketches:



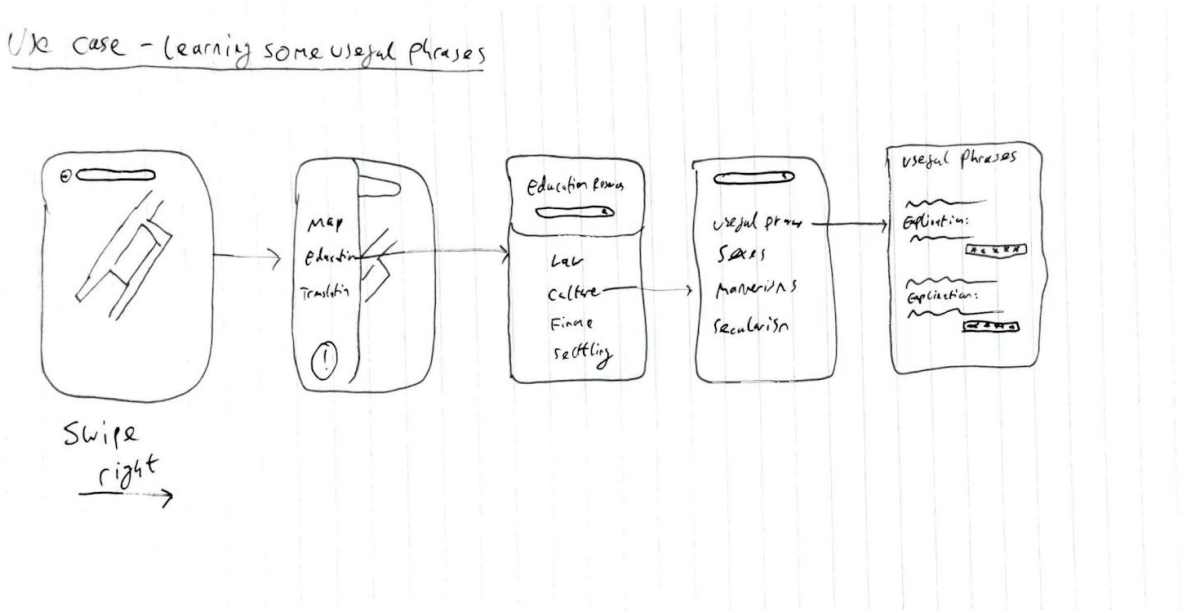


Storyboarding

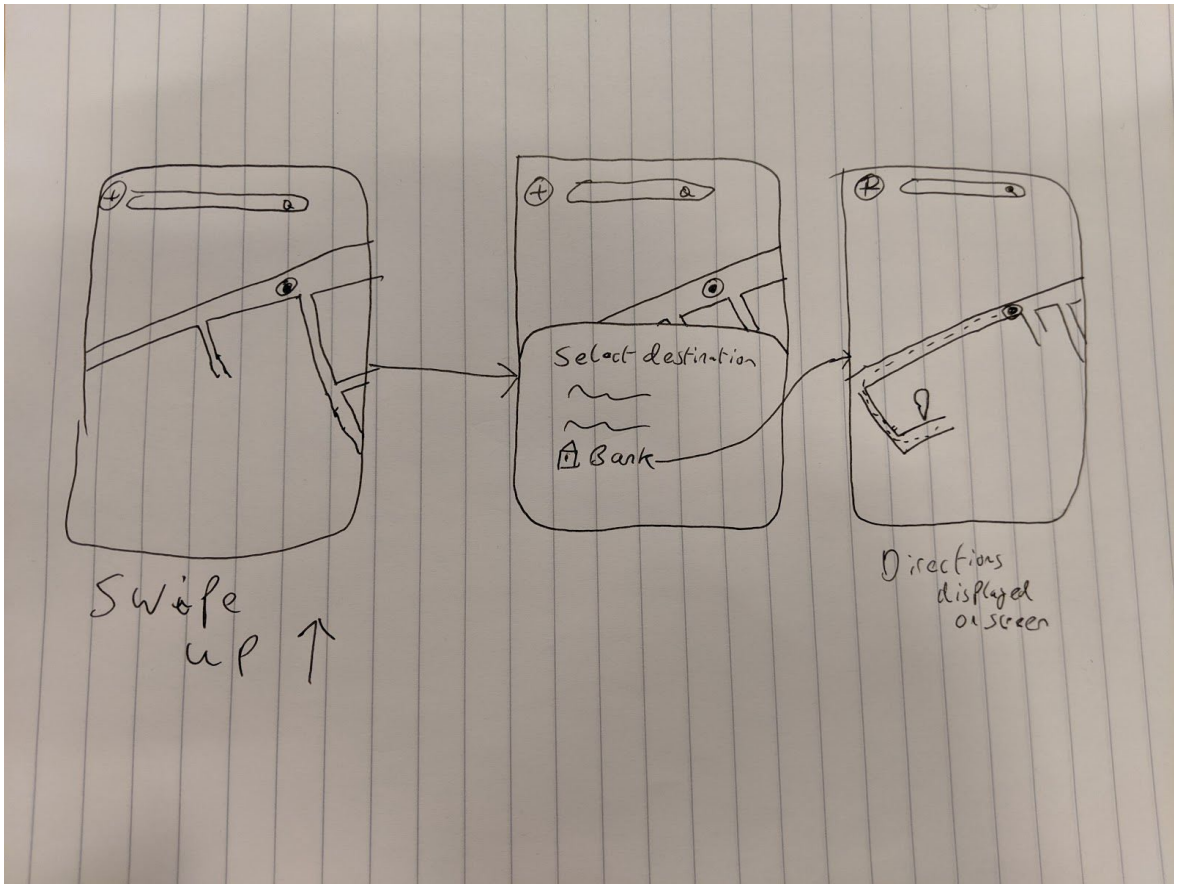
First open of app (app flow)



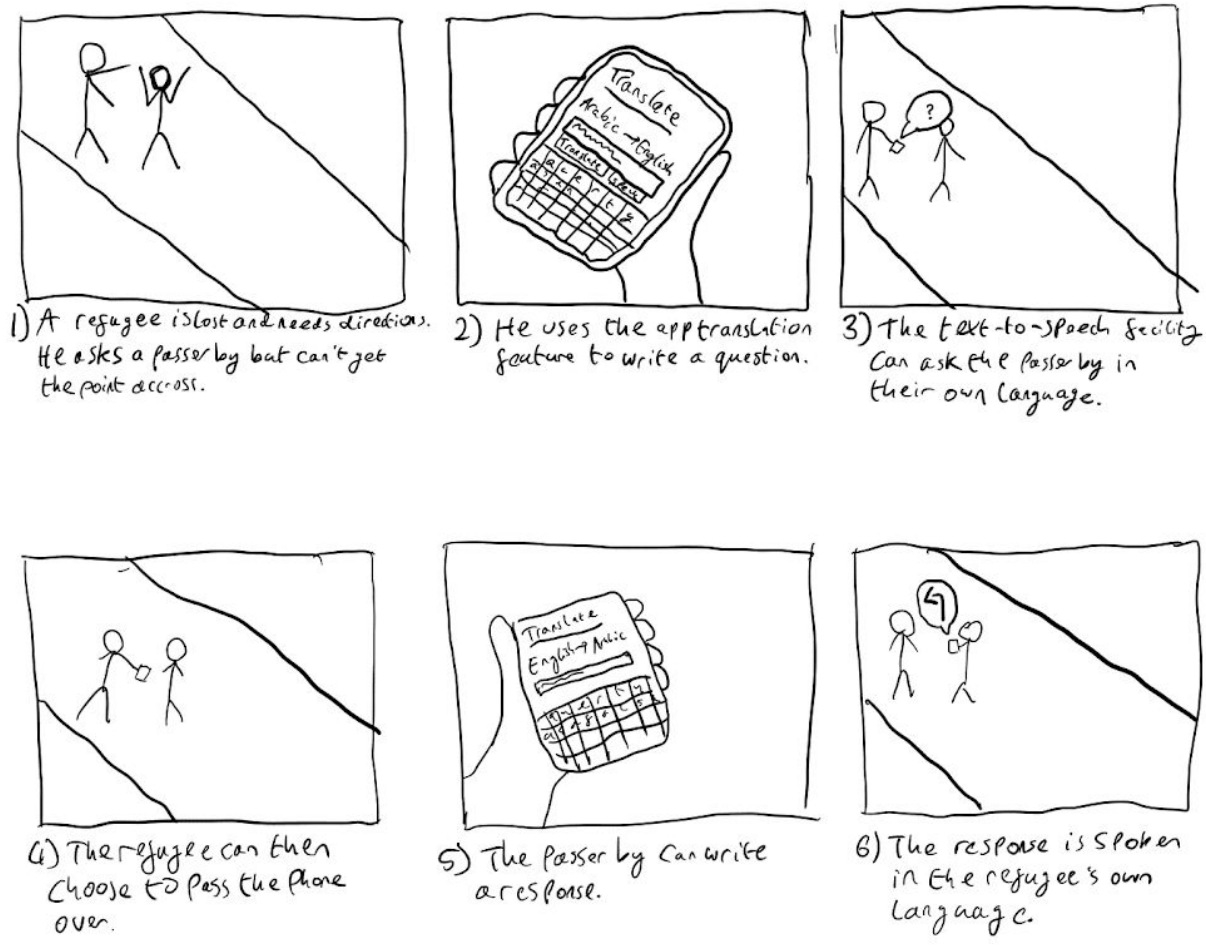
Use case - learning some useful phrases (app flow)



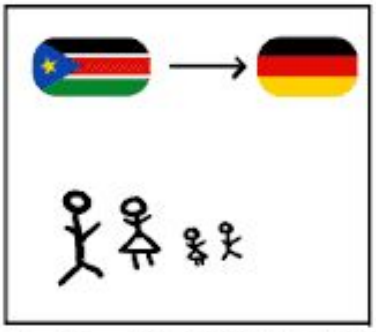
Use case - navigation (app flow)



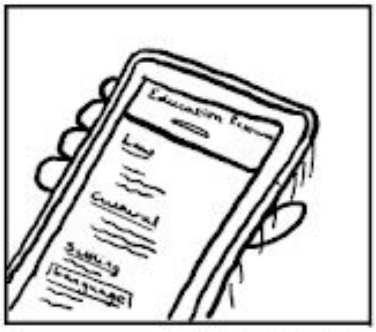
Use case - translation (real life scenario)



Use case - learning the local language (real life scenario)



Family of refugees, who have fled from their home country. They are struggling to speak the local language (German).



They can navigate to the language section under the education resources part of the app

Language videos relating to the language of the country are presented.

Due to the different education levels of family, AI used to pick videos suited to the individual person.

Videos are sourced from multiple resources, including X5GON.

Use case - in an emergency (real life scenario)

A refugee has a medical emergency but does not understand the local emergency service system.

They can navigate to the app and press on the universal SOS symbol.

The app will automatically reroute them to the relevant local authorities. In this case, the local ambulance service.

The app automatically sends their location to the relevant authority

Conclusion & Summary

This app is designed to assist refugees entering a new and potentially alien environment. A refugee could be told about this app before they even arrive in their new country, and can start using it immediately.

Ethics

There are a few ethical issues to deal with within this app.

- Location tracking
    - Location tracking of people that are potentially very vulnerable could cause potential problems. Our app should not store location information for any longer than is completely necessary, and such information should be anonymised where at all possible
- Our AI systems
    - The AI we are using to determine which content is displayed to each user must be carefully designed to make sure the information is anonymous and untraceable back to the original person.
- Provided information / education
    - Due to the sensitive nature of much of the information that is being provided, we must make every effort to make sure the information we provide is accurate, held to regular audits, and regularly updated.