

VirtualMed App – Mock-Ups

Team: Cristina Tirsi, Vlad Nicolaescu, Tudor Udriste, Tudor Stoiean

1. About Us & Our Project

We are second year Computing students at Imperial College London. For a college group project, we are working on building a digital touchpoint (a multi-user mobile application), that will cater for needs of a specific target audience. This digital touchpoint should support and involve real-time user interactions and must maintain a consistent internal state via use of a server-side database.

2. Context

All major companies in the health industry, including NHS Digital, are planning to focus more on their applications to allow remote treatment (especially after the COVID-19 pandemic started), and make use of the AI to provide quick recommendations and later maybe even precise diagnosis and treatment using extremely-well trained chat-bots. Moreover, the focus is also to improve and develop out-of-hospital care, via telemedicine, and make use of mobile applications to make appointments and even call the ambulance.

Even in larger cities, there are still significant problems with scheduling a consultation, especially specialists. According to a Merritt Hawkins survey, the average wait time to be seen by a cardiology specialist in the nations' capital is thirty-two days, compared to just over twenty-one days (the national average).

3. Insights & Analysis

Experts defined a “minimum medical knowledge” (MMK) that people need for understanding typical signs and/or risk factors of four relevant clinical conditions:

- Myocardial infarction
- Stroke
- Chronic obstructive pulmonary disease
- HIV/AIDS

BMC Medicine tested to what degree Swiss adult citizens satisfy this criterion for MMK and whether people with medical experience have acquired better knowledge than those without.

The method was a questionnaire interview in a Swiss urban area with 185 Swiss citizens (median age 29 years, interquartile range 23 to 48, 52% male). They calculated the proportion of MMK and examined whether citizens with medical background (personal or professional) would perform better compared to other groups.

No single citizen reached the full MMK (100%). The mean MMK was as low as 32% and the range was 0-72%

4. Challenges & Ambitions

We are aiming to:

- build an application to help people expand their medical knowledge and gain confidence in medical services;
- help people communicate their health problem using a graphical representation, rather than using words ("A picture can replace a thousand words");
- facilitate communication between users and doctors and help users schedule an appointment quicker.

5. Visual Representation

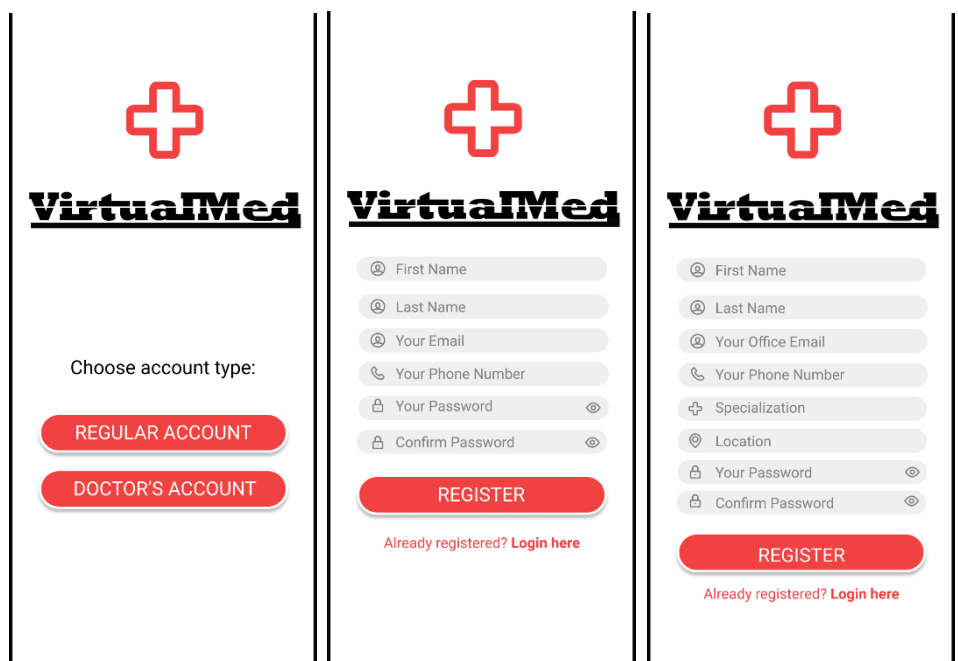
Our app has a landing page, which provides the user the possibility to access the app without logging in case of an emergency. We believe that in some cases, time is crucial, and we would like to avoid wasting time with login (or even worse registering, if the user does not have an account). However, if time is not limited, we believe that allowing the user to make an account and specify some personal details (i.e., the Medical ID) will be beneficial.



VirtualMed has two types of accounts: regular users and doctors.

The regular account is intended for possible patients. They have access to the Symptom Checker, to the Medical Center Finder, to information about illnesses and recommendations, being able to contact specialists and request for an appointment.

The doctor's account is intended for specialists. They can chat with patients and help them find an appointment if necessary.



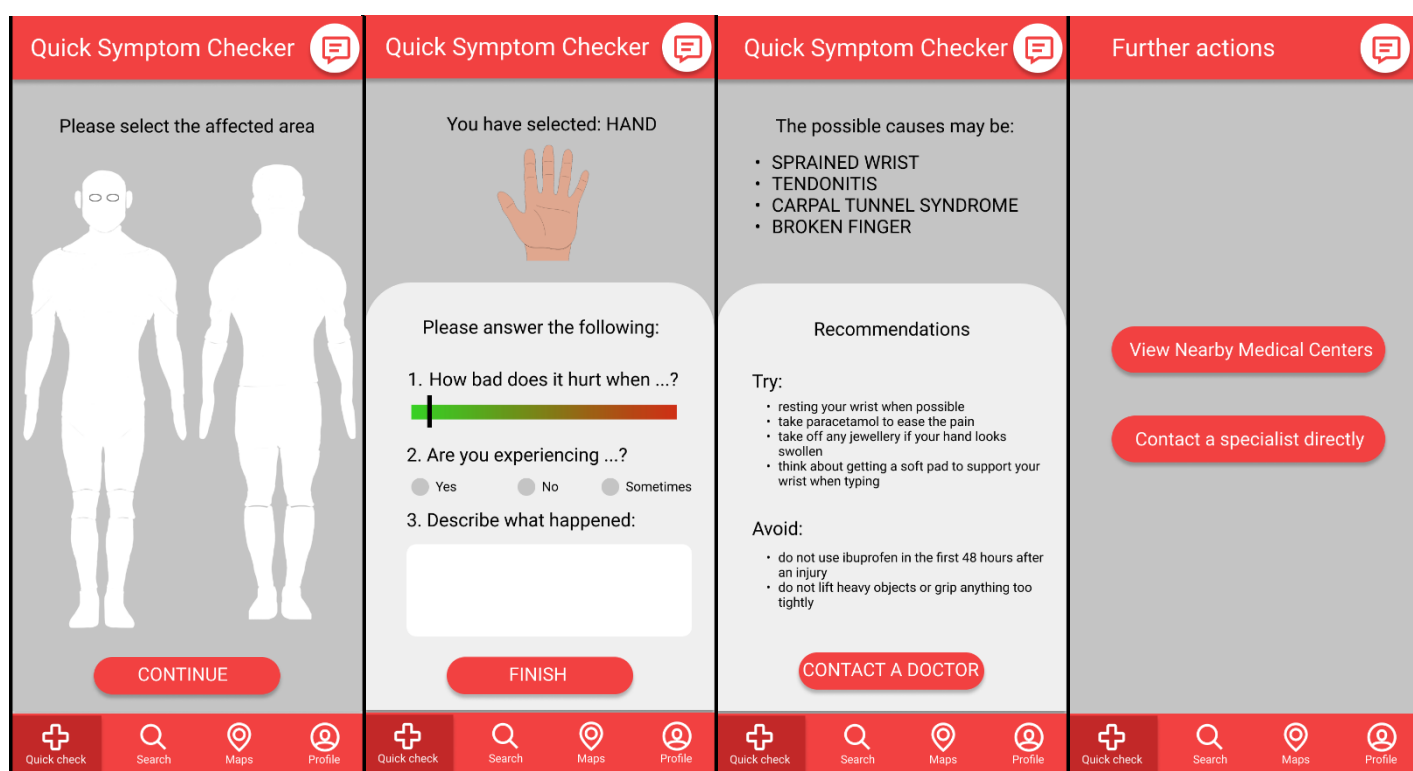
Regular account:

The Quick Checker Tab sustains the medical system by producing preliminary possible diagnoses. The diagnoses are obtained by answering questions relevant to the “pain” the user experiences.

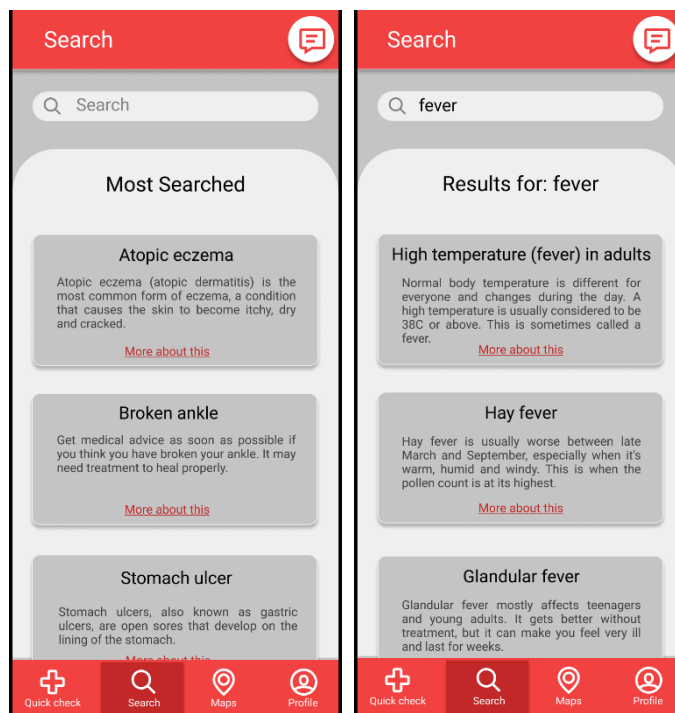
It displays the front and the back parts of the human body allowing users to select the affected areas by tapping it. The front part contains different zones for: head, eyes, ears, neck, shoulders, arms, hands, chest, torso, pelvis, thighs, knees, calves, and feet. The back part is split into head, neck, shoulders, elbows, arms, back, glutes, thighs, calves, and feet.

Once the area affected is selected, a new screen will appear showing relevant questions for that specific part of the body. There are several types of questions: multiple-choice, type-in, and one that gives the user the option to express the intensity of a pain.

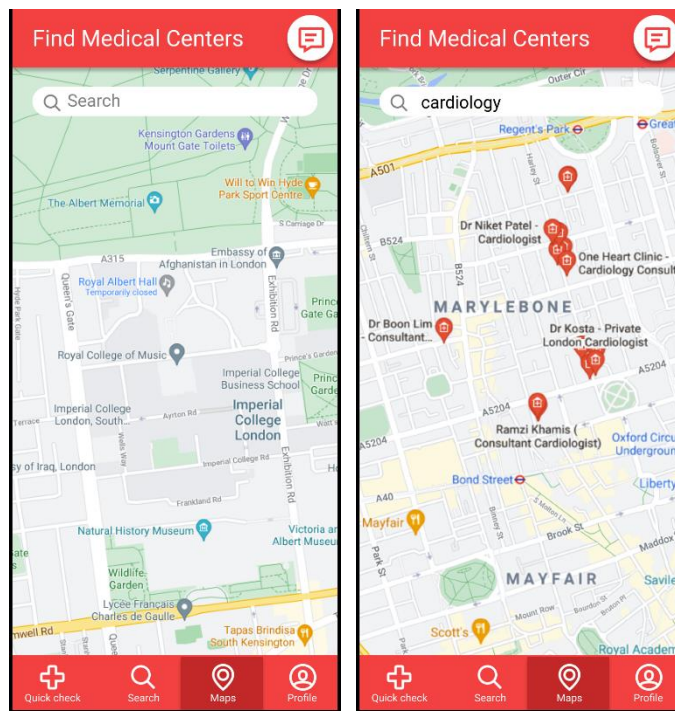
On completion, the app lays out a list of possible diagnoses, as well as further recommendations. The last ones will be split into “Try” and “Avoid”. This screen will also allow users to move further and contact a specialist, either by direct message or by showing a map of Medical Centers in his/her area.




The Search Tab allows users to directly search for illnesses. Firstly, it displays the “Most Searched” illnesses (initially the most searched by all users, then the most searched by the account owner). The search will display some results, each with a brief description, which can be expanded by pressing “More about this”.




The Maps Tab allows the user to find Medical Centers around him, using Google Maps.



Hello, Cristina!


Edit my profile



Upload

Basic info

First Name:

Last Name:

Email:

Phone number:

Emergency Contact

Full Name:

Phone number:

Relationship:

Medical ID

Birth Date:

Height:

Weight:

Blood Type:


Allergies:


Chronic diseases:


Medications:


Primary Language:


UPDATE



Quick check


Search


Maps


Profile

Hello, Cristina!




Basic info

First Name:

Last Name:

Email:


Phone number:


Emergency Contact


Full Name:


Phone number:

Relationship:


Quick check

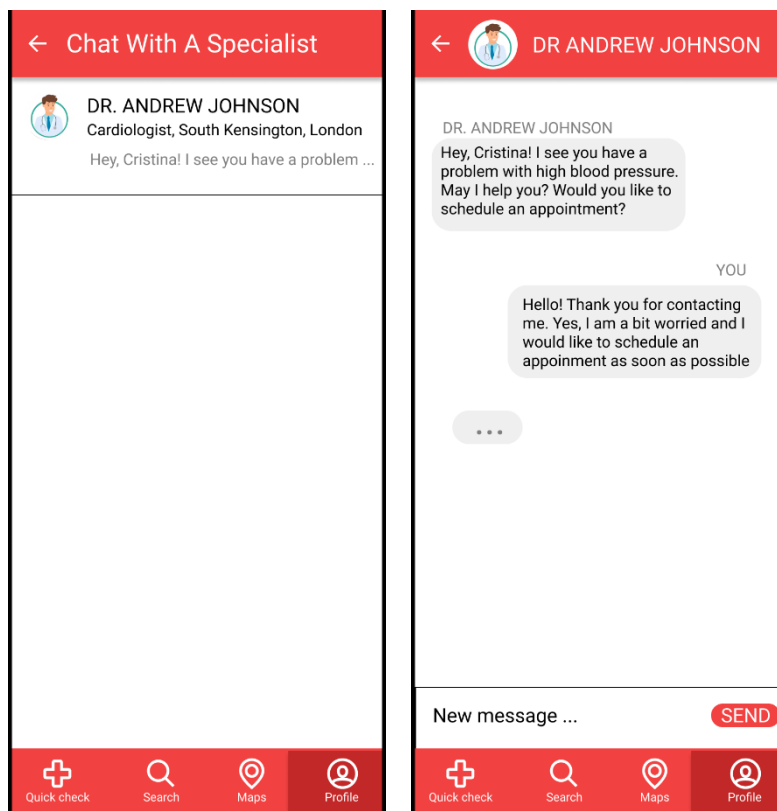

Search


Maps


Profile

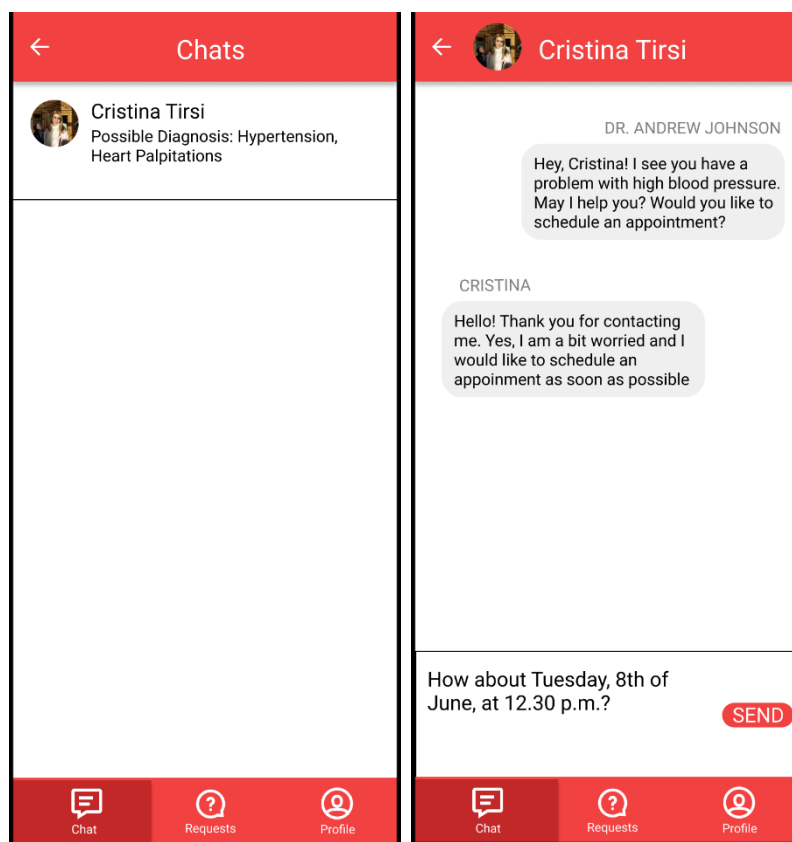
The User Profile Tab is a key feature of the application, since the user can complete the fields related to their Basic Info, Emergency Contact and Medical ID, information which can be crucial in case of an emergency. Moreover, the Medical ID information becomes available to doctors when contacting them, in order to give accurate recommendations.

The chat feature button can be found in all tabs in the top-right corner. It allows the user to access their chats with specialists. After going through the Quick Symptom Checker process, the user may send a request to discuss with a doctor by pressing the “Contact a doctor” button located in “Further actions”. The request will be sent to multiple specialists, only one being able to solve it. The doctor initiates the conversation with the user via the Direct Chat functionality.

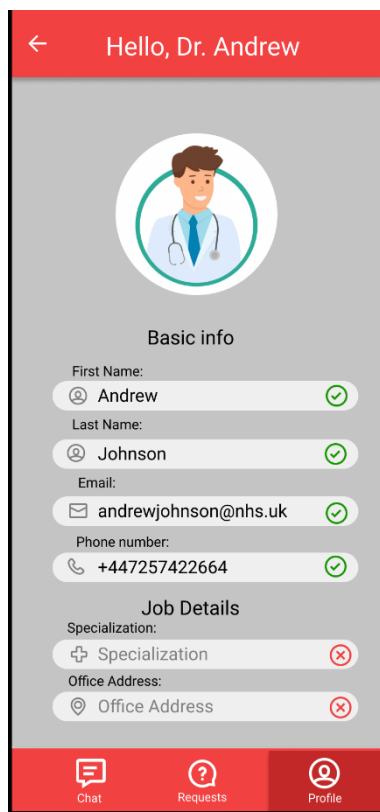
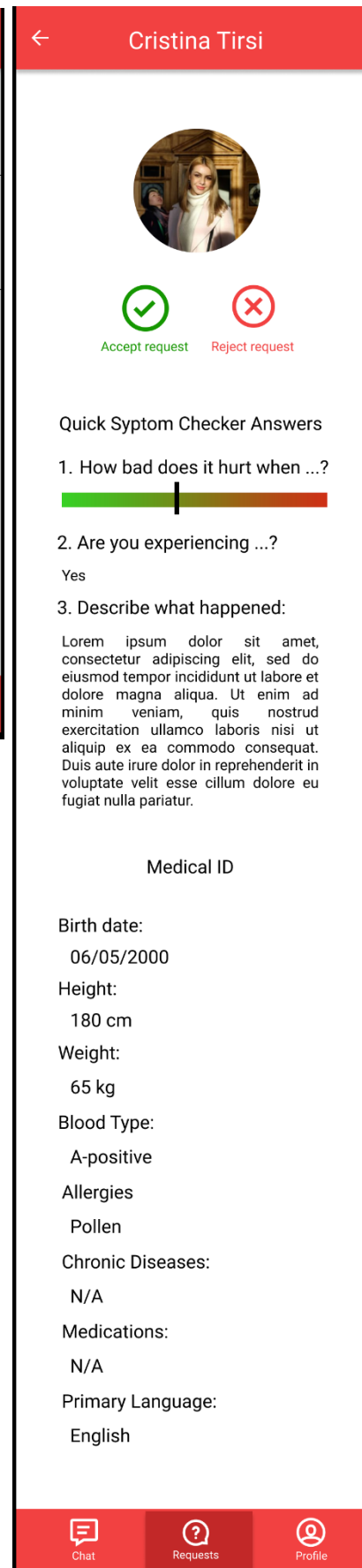
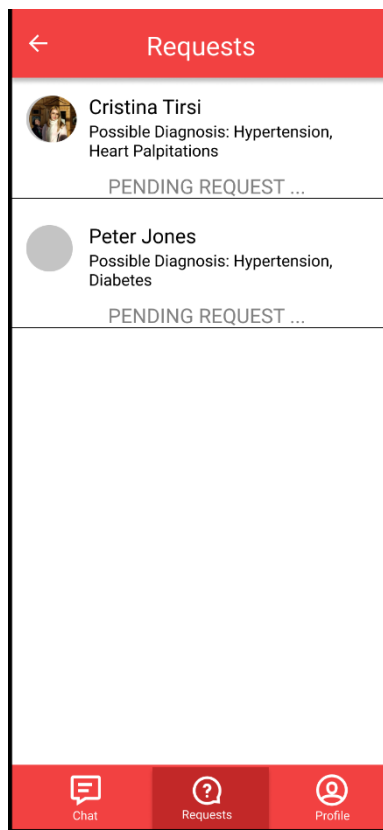


Doctor account:

The Chat Tab purpose is to allow the doctor to have a quick chat with the patient and maybe agree on an appointment.



Each doctor sees pending requests related to their specialization. A request contains the answers that the user has provided through the Quick Symptom Checker, on top of his/her Medical ID. Afterwards, the doctor has two options: to accept or to reject the request. By accepting it, they will be directed to the Chat so they can discuss with the patient, and the request will be eliminated from all pending request lists. By rejecting it, the request is still in pending state, therefore available to every doctor's pending request list.



Doctors have a simplified profile, containing contact information and details of their job (specialization and the address of their office).

6. Feedback

Please provide us a feedback of the app taking into consideration the following aspects, but not limited to:

- Which feature do you find the most and least useful? Why?
- What feature did you expect and did not find?
- How satisfied are you with the navigation on the app?
- What do you like most about the mobile app?
- How would you rate the look of VirtualMed?
- Could you see yourself using such an app?
- How likely are you to recommend VirtualMed to a friend?