MarsMellow

First place of Adult Team Track in 2021 MIT App Inventor Appathon

Design background and ideas:

The voyage to the Americas by Christopher Columbus in 1492 was the initiation of a great population exchange between the New World and the Old World (=Europe and the entire Eastern Hemisphere). Apart from all the benefits of this exchange there have also been significant losses. European contact enabled the transmission of deadly viruses and bacteria, such as smallpox, measles, typhus, cholera?etc., and since native populations had no previous contact with these diseases, they were immunologically defenseless. This tragic event led to a demographic disaster of unprecedented proportions. It is estimated that 80?95 percent of the Native American population was decimated within the first 100?150 years following 1492 (Newson, 2001). Our team has envisioned a future where Mars has been colonized and the bidirectional imigration between Earth and Mars constitutes a quite common hobby. In this context, it is proposed that the damaging radiation and environmental conditions prevailing on the Red Planet, have caused higher mutation rates in the DNA of Mars shelters. Over the years, the mutations that survived, passed down through generations, and natural selection led to a huge diversification in the martian colonies, too. However, the most significant outcome is the fact that the immune system of Martians and Earthlings are now completely different, rendering the physical contact between subpopulations of the two planets a deadly choice! Since communities are now paying attention to history, and they don't want to repeat the same mistakes again (like the extermination of Native Americans from the European germs), the I.H.O. (Interplanet Healthcare Organization) has set specific rules for the distance that should be kept between the different subpopulation groups facing this problem. So, we have built an App that is going to help future Martians and Earthlings adapt better in their new city, after inter-planet population exchanges, while following all the safety rules of I.H.O.

App functionality and directions for further

- Our App helps the citizens of a city, keeping the necessary distance for health safety reasons. The first idea was to detect the nearby devices using Bluetooth, but multiple connections were not possible due to the platform limitations. We used the CloudDB instead, where we can upload the GPS locations of everyone. However, it is not escalating for many users. With a better Bluetooth support the algorithm could be improved and overcome this problem. There is also an interface implemented that could provide the ability to connect by providing call and texting options among the users.

- In addition, our App addresses the issue of being served in public services and overcomes the issue of social distance in interiors, by helping the citizens booking appointments in convenient hours. The App displays available and not available reservation slots according to each user?s profile. Because this kind of functionality would require a lot of users, we have chosen to display an example where some of the available reservation slots of the services are already occupied.

- Finally, we have envisioned the inclusion of some extra details in the App, with sensors that will be able to inform the user about different environmental conditions of the planet such as: temperature, humidity, UV radiation, gamma- radiation, O_2 concentration etc. Sensors could be functional in the future when such kind of devices will be common in the users. Although our App is designed for a future use between Earthlings and Martians, it could also be helpful nowadays. For example, in specific cases that social distance should be kept like: in a pandemic crisis (e.g. Covid-19), between people with Cystic Fibrosis (that should not come in contact with one another), people with suppressed immune systems, and even with people exposed in nuclear radiation or radiation therapies/tests.

Pages: Function Unit

- Start_Screen
- Profile_Screen
- Map_Screen
- Service_Screen
- Sensors_Screen
- Menu_Screen

Start_Screen

- Interactive components
  - Earth_Button
  - Mars_Button
- function： close start screen and open the profile screen

Profile Screen

- Fill name, age, origin planet, contact number
- Set special attributes and safe distance
- Load safe distance data from IHO
- Show Menu

TEST:save user' ID (myID), myID is 0 forever!
RESULT: can't test further.