Human Computer Interaction Project Presentation
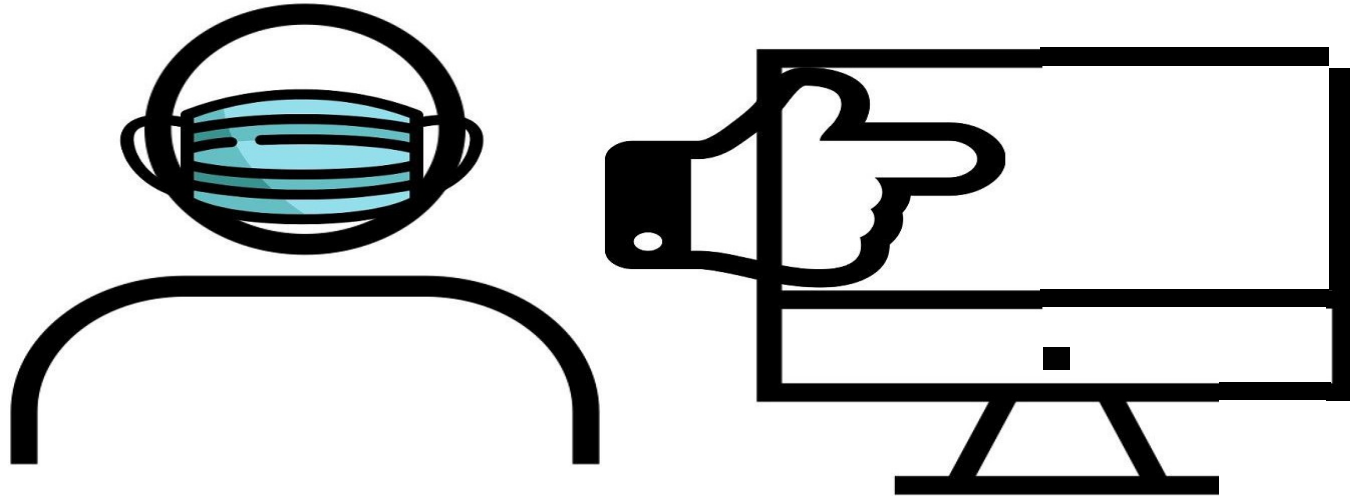
Yash Goel - PES1201701853

Need Finding

Since the technology is moving so fast and world is being taken by Artificial intelligence. There should not be any requirement of humans to prove their identity anymore. Each individual is born with a unique set of biometrics biologically. Their fingerprints and retina scan (at earlier phase of development of this technology) should be sufficient to link them to their entire life, i.e. banks, education certificates, their e-wallets, location, SIM number and all id's contributing to their all walks of lives.

Low fidelity prototype

To demonstrate how we intend to tackle the problem at hand, I intend to use the **storyboarding** method to explain our solution.

First of all an individual is required to create an account with the company (call it whitescorp). They upload their aadhar, PAN and all other official documents online. They get verified.
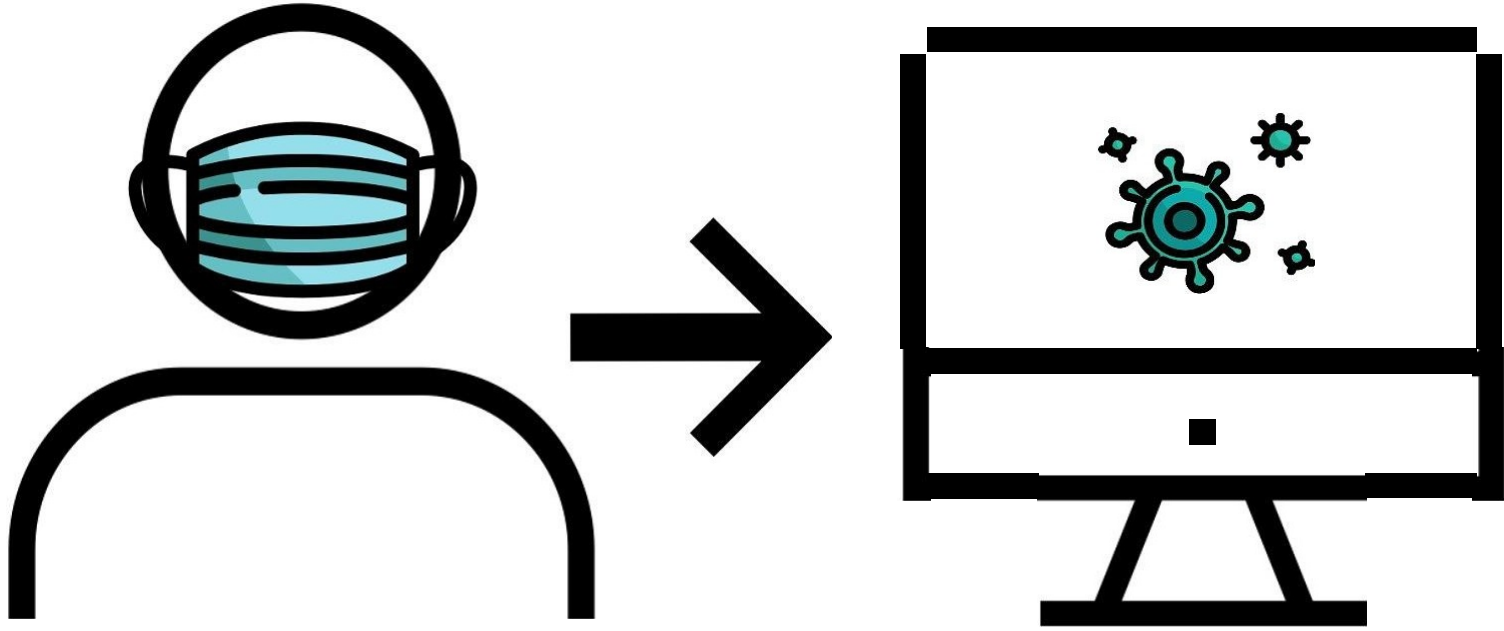
They further link their bank a/c and biometric scans to this portal.

This company will become partners with other corporations. Next time an individual visits an airport. All he needs to do is biometrically scan his credentials. Airport authority will ask for permission from the portal for permissions. His app will ask him for permission. He will give permission for necessary information to be shared with the airport authority.
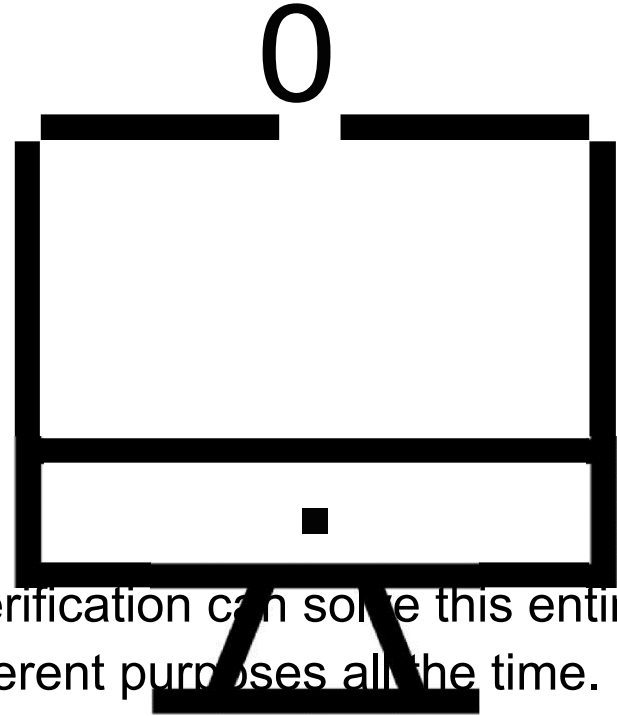
Infact at later stage whenever this person updated anything will be verified by the app using government allowed database. Infact in current time his coronavirus status will also be updated.

How do we solve this problem?

Biometric based system - Whites

- By the addition of a biometric scanning device we can match the required information with the already input verified information.
- This completely obsoletes the use of paperwork in real manner and a person can be verified everywhere using his own physical biometrics everywhere for official and un-official purpose.

Biometrics and smart use of database with verification can solve this entire problem of carrying different papers for different purposes all the time.

High fidelity prototype

Code is updated on repository

Technology used

- MediaPipe - A cross-platform ML framework by Google which provides many solutions including hand tracking.
- PyTorch - Used to develop the neural networks that allow gesture recognition

Heuristic evaluation

- **Visibility of system status** - System could detect out on screen what information is being asked by the user.
- **User control & freedom** - The user does not have much freedom as there is a learning curve wrt the information required for different purposes that the system understands.
- **Consistency & standards** – Will train the model for better accuracy.

Heuristic evaluation

- **Error prevention** - new technology used by Zoom and other video conferencing apps isolate the sole user closest to screen and prevent error of taking multiple people's inputs
- **Recognition rather than recall** - Unfortunately, the user has to learn and recall the functions to use the gesture detection system.