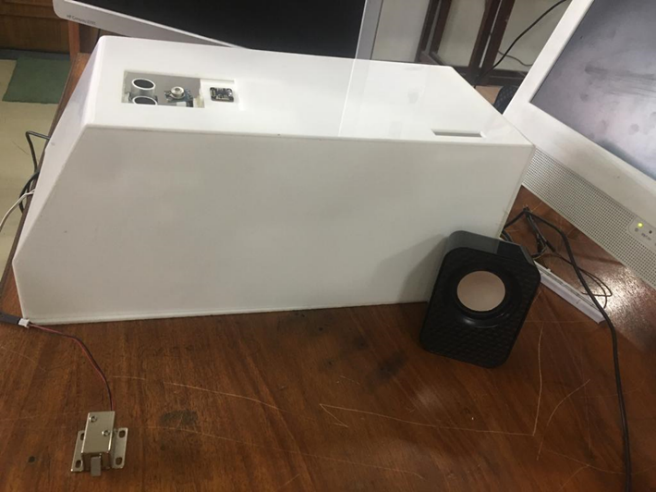
**An Automated COVID-19 SOPs Monitoring And Management System**

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| **Summary:** | This system was designed to prevent the rapid spread of COVID-19 by enforcing the SOPs where it would be installed. This system would be installed at the entrance of a workplace, in front of which a single file queue would be made on which the SOPs would be enforced. The SOPs that are being checked and monitored are: Face Mask Detection, Social Distancing Detection, Contactless temperature sensing, SpO2 sensing, Audio assistance, warning generation using audio, and automatic door locking and unlocking mechanism. Nvidia Jetson Nano and Arduino Uno microprocessors are used to implement the system. For face mask detection CNN with linear regression model is used, for social distancing detection MobileNet v2 is used, and for temperature sensing MLX90614 is used and for SpO2 sensing MAX30102 is used. The door lock used is rated 12V and is connected with Arduino Uno. Two separate cameras are used for face mask and social distancing detection. The camera for face mask detection is placed at the front of the queue and at face level and the camera for social distancing detection is placed perpendicular to the queue. | | | | |
| **Introduction** | Smart solution to contain the rapid spread of COVID-19 | | | | |
| **Problem Statement** | To design and implement a system that can monitor the COVID-19 SOPs without human interaction | | | | |
| **Objective** | Our objective is to design a system which would stop the spread of COVID-19 through using Artificial Intelligence and embedded system. | | | | |
| **Conclusions** | The system has been successfully designed and can monitor the COVID-19 SOPs and can alert the person in case of violations. | | | | |
| **Future Directions** | The system can be improved by adding internet cloud server and Arduino UNO can be replace by Jetson Nano. We can further replace Jetson Nano by much more application specific embedded system. | | | | |

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