A SURVEY ON SAFETY MEASURES AGAINST COVID-19 IN CITY BUS

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***Abstract*: The COVID-19 pandemic is the defining global healthcrisis and the greatest challenge. Now, as the country emerged from the lockdown a proper ramping up of the transport system is needed. Considering such possibilities, itisvitaltoassureourselvesthatpublic transport is for the public – not the virus. To overcome from this crisis, we propose an innovative idea based on providing extreme safety to the commutersinthebus.Governmenthas also released certain guidelines initially for the safe bus travel which includes- Face masks are required for riders and bus operators. Social distancing is required on buses. Due to lockdown in many countries, the demand for passenger transport has been adversely hit. The freight segment has had a mixed short-term effect in terms of transportation demand. Even though the fall in passenger transport demand is pushed by social distancing restrictions, COVID-19 may have a long-term effect on people's travel behavior.Even after the situation normalizes, the perception of risk associated with crowded areas could lead to shift in preferences towards personal travel modes. That is, people may avoid using public transport modes to avoid crowds. People may also avoid shared mobility modes like autorickshaws, micro-transit vans. Because the risk tied with city bus transportation are more.**

Introduction

Transport system serves as the nerves of the country. Transportation sector has been one of the primary victims of COVID-19. The COVID-19 pandemic that began in the last quarter of 2019 seriously impacted the transportation industry. Countries around the world adopted various restrictions and policies to prevent the spread of the pandemic, which resulted in a sharp drop in the demand for transportation of goods. It has a long-term effect on people's travel. The crisis has affected all forms of transport, from cars, and public transport in cities, to buses, trains and planes nationally and internationally. Mass transport, which brings people into close proximity with each other, is where some the most tangible behavioralhanges manifest during a crisis,with

increasing restrictions imposed by governments, both public transport services and their demand have been badly hit. This virus is impacting the whole world badly as it is spreading primarily through contact with the person. The main way the virus spreads is from person to person through respiratory droplets when people cough, sneeze or talk. You may also be able to get COVID-19 by touching a surface or object that has the virus on it, and then touching your face, mouth, nose, or eyes. The restrictions put in place to limit the diffusion and impacts of Covid-19 have had a widespread impact on people's lives, and the way energy is used across entire economies. The virus may be spread by people who do not have symptoms.associated with crowded areas could lead to shift in preferences towards personal travel modes. That is, people may avoid using public transport modes like buses. We need to do whatever we can to protect each other from Coronavirus.

Transportation sector has been one of the primary victims of COVID-19. It has a long-term effect on people's travel. This virus is impacting the whole world badly as it is spreading primarily through contact with the person. Even after the situation normalizes, the perception of risk associated with crowded areas could lead to shift in preferences towards personal travel modes.
COVID-19 has widely impacted the entire world as it is primarily spread through contact with the person. It is primarily spread through mass transport modes because common people rush to the mass transport modes. Hence the city buses need to be carefully maintained and prevent from all types of virus because thousands of passenger'stravels through these modes daily as their part of life.

Literature Survey

A liquid dispenser is a system or a machine which is designed and capable of responding to the instruction or request made by the user.At the present era, organization like in offices, banks, and homes have been using dispenser through the manual control in which the user operates the system by pushing, holding or turning a button until the desired amount is dispensed at regular interval. The process consumes more time and sometimes the water might overflow due to loss of concentration by the user. There is a need in the residential/commercial organization for a self-dispense detecting liquid dispenser that responds to cup presence using a sensor (LM 358) in the system. Also, restaurants and bar businesses are always looking for a way to increase efficiency This device is built using microcontroller, IR sensors and motor for liquid dispensing purpose. The automated hand sanitizer dispenser provided a very satisfactory performance with minimal error.a liquid dispenser leveraging microcontroller technology with added features that eliminates manual operation of the dispenser's pumps. This is achieved by the use of cup sensor in the control unit that automatically detects the presence of cups or another container. It also solves the issue of overflow of fluid due to loss of concentration by the introduction of electronic keypad which enables the users to input their desired quantity. The utilization of a low-cost microcontroller has been accomplished in the form of the ATM8952 microcontroller. In addition to this, the utilization of the various proposed components such as dispensers, sensors, pumps, relays, dc motor and an input device etc was also accomplished for the functional Microcontroller Based Self-Dispense Detecting Liquid Dispenser.[1]

The automatic liquid dispenser is easy to implement and efficient. The viscosity the sanitizer should be taken into account.

The recent advances in electronics and microelectronics devices allow the development of newly low-cost monitoring tools used by peoples for health preventive purposes. Sensors used in medical equipment's convert various forms of human body vital signs into electrical signals.presents the remote monitoring of human body temperature (HBT) wirelessly by means of Arduino controller with different sensors and open-source internet connection. This monitoring system uses an internet network via wireless fidelity (Wi-Fi) connection to be linked with online portal on smart phone or computer. The proposed system is comprised of an Arduino controller, LM-35 (S1), MLX-90614 (S2) temperature sensors and ESP-Wi-Fi shield module. The obtained result has shown that real time temperature monitoring data can be transferred to authentic observer by utilizing internet of things (IoT) applications.The variation in human body temperature (HBT) can lead to different disease. It is essential to quantify the range of temperature.The collection of real time data is controlled by CT-UNO controller. The transferring of sensed data from implemented LM-35 and MLX-90614 temperature sensors at the online portal is performed through ESP-Wi-Fi shield. This

platform is wirelessly connected to monitor and display the real time data of deployed S1 and S2 sensors respectively at indoor and outdoor environment. The conclusion of this paper is the daily monitoring of body temperature can prevent the people from threaten of fever, hypothermia.[2]

Non-contact temperature sensor is easily available and can give a level of accuracy. High precision is not possible and the seriousness caused by the fever cannot be shown and only a level of indication can be shown through this not contact temperature sensor.

This research involved the design and implementation of automated passenger counting which provides a solution to remove syndicate and corruption in the transportation sector. It counts how many passengers are sitting on the seat and shows on the display screen in real time monitor and the authority can see the total number of passengers. No paper receipt is needed to ride on the bus. It enables transport authority to obtain accurate bus fare from bus drivers and helpers remotely instead manually counting where corruption happens.HC-05). The proposed passenger counting system would be beneficial for both bus owners and government.No manual counting would be needed. If there is no passenger on seat, it will show a blank seat. But when a passenger will be seated on the bus, it will show occupied on the display screen. Display will change the colour for each seat occupied. The display database updates in every 30 sec. There will be some checkers for every stoppage. When the bus reaches any stoppage, checker will enter into the bus. He will access into the display database by giving his login credentials and send the updated data to server. So that, from every starting point to destination, the actual number of passengers will be automatic counted and it will reduce the window of corruption. In this system, it has a pressure pad beneath every seat and the pressure pad acts like an open circuit connected to Arduino microcontroller and variable resistors. When passengers are sitting on the seat, pressure pad becomes closed circuit and passes the voltage into the circuit. The voltage goes to Arduino IDE and the Arduino converts the voltage into a digital signal like 0, 1. It means when a passenger is sitting on the seat, it passes the value as 1. Also, when there is no passenger, it passes the value as 0. an automated system for passenger counting in sitting service bus. The proposed project provides efficient and innovative way to give complete access, flexibility and satisfaction to the authority. It will work like a virtual helper. Corruption problem cannot be erased in one day but it can be cured if we stand against the matter. This system can be a milestone to reduce the corruption in public transport system.[3]

The COVID-19 is an unparalleled crisis leading to huge number of casualties and security problems. In order to reduce the spread of coronavirus, people often wear masks to protect themselves. In this paper, they proposed a reliable method based on discard masked region and deep learning-based features in order to address the problem of masked face recognition process.a reliable method based on discard masked region and deep learning-based features in order to address the problem of

the masked face recognition process. The first step is to discard the masked face region. Next, we apply pre-trained deep Convolutional neural networks (CNN) to extract the best features from the obtained regions (mostly eyes and forehead regions). Finally, the Bag-of-features paradigm is applied on the feature maps of the last convolutional layer in order to quantize them and to get a slight representation comparing to the fully connected layer of classical CNN. Finally, Multilayer Perceptron (MLP) is applied for the classification process. Experimental results on Real-World-Masked-Face-Dataset show high recognition performance.Face recognition is safer without any need to touch any device. Recent studies on coronavirus have proven that wearing a face mask by a healthy and infected population reduces considerably the transmission of this virus. problems, we distinguish two different tasks namely: face mask recognition and masked face recognition. The first one checks whether the person is wearing a mask or no. This can be applied in public places where the mask is compulsory. Masked face recognition, on the other hand, aims to recognize a face with a mask basing on the eyes and the forehead regions. In this paper, we handle the second task using a deep learning-based method.

The proposed method improves the generalization of the facerecognition process in the presence of the mask. To accomplish this task, a deep learning-based methodand quantization-based technique to deal with the recognition of the masked faces. The proposed method can also beextended to richer applications such as violence video retrieval and video surveillance. They take care of their health and wear masks to protect themselvesagainst pollution and to reduce other pathogens transmission.[4]

This method improves the generalization of the face recognition process in the presence of the mask. To accomplish this task, a deep learning-based method and quantization-based technique to deal with the recognition of the masked faces. Once a person enters the bus and if he removes the mask it cannot be detected using this technology.

.RFID card is given to the passenger and when passenger gets into the bus, he has to swipe the card in the RFID reader and he has to a destination point in the device will automatically calculates the fare and deduct the money automatically. Hence people do not have tocarry the money and they don't have the problem ingiving the right change to conductor. Conductor alsofeels free in collecting the money from the people.All the record will be updated automatically in theserver continuously. When more people aretravelling than it's also easy to give the

ticket. A web-page monitors the bus for amount pathtaken bus status number of passenger's distanceinformation. It overcomes all the problems faced in bus with IOT based web-page monitor system.A radio frequency identification reader (RFID reader) is a device used to gathering the information from the RFID tag, which is used to track individualobjects. Radio waves are used to transfer data fromthe tag to a reader. RFID is a technology similar intheory to bar codes. The RFID tag it must be withinthe range of an RFID reader, which ranges from 3 to300 feet, in order to be read. RFID technology allowsseveral items to be quickly scanned and enables fastidentification of a particular product, even when it issurrounded by several other items.4.The Concept of Smart Card Hardware component and software that are used to implement the RFID. The hardware includes reader, tags, printer and host computer. While software part is the application that used to run the RFID system, this system is designed with the hope that it is very much economical and helpful for passengers and as well as conductors during journey.[5] RFID ticketing has wide variety of applications and can be used in modern buses.If the commuters forget the card it will lead to a problem, but it can be solved using the digital payment modes which were surveyed by us.

Conclusion

One of the effective measures to prevent the spreading of COVID-19 and to protect mankind is by avoiding the chances of spreading through the public transport modes. Now as the country emerges from the lockdown, a proper ramping up of the transport system is needed. So, the buses should be equipped with temperature monitoring to the onboarding passengers, face mask detection, sanitization, proper social distancing must be ensured and intervention between the commuters and conductor must be stopped.

These measures are needed to gain public's confidence in mass transport modes and reduce the risk tied to city buses for the duration of the pandemic.

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