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Smart Sahayata (Covid-19)

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Abstract: ***As these day we are coming across many cases of Covid-19. But still nothing is working much to reduce the number of these. So we need something to be done for them so as for the betterment of the country as well as secured living of these people. Therefore, taking a step forward in helping these people, we have come up with an idea of developing into an application called "Smart Sahayata (Covid-19)" which can be used by every citizen of India to provide a healthy living for the exiled. All they need to do is to open up the application and click any of the 4 tabs that is to report Homeless/Find Shelter/Donation(money or food packets)/violation of social distancing. Which gives the Location information of a person who is in need of accommodation or food. So that govt can take necessary steps.***
Keywords: Homeless, Social Distance, Donation, NGO's, Shelters.

I. INTRODUCTION

Homelessness is a major issue in India. The Universal Declaration of Human Rights defines 'homeless' as those who do not live in a regular residence due to lack of adequate housing, safety, and availability. India defines 'homeless' as those who do not live in Census houses, but rather stay on pavements, roadsides, railway platforms, staircases, temples, streets, in pipes, or other open spaces. There are 1.77 million homeless people in India, or 0.15% of the country's total population, according to the 2011 census consisting of single men, women, mothers, the elderly, and the disabled. Furthermore, there is a high proportion of mentally ill and street children in the homeless population. There are 18 million street children in India, the largest number of any country in the world, with 11 million being urban. As a result, more than three million men and women are homeless in India's capital city of New Delhi; the same population in Canada would make up approximately 30 electoral districts. A family of four members has an average of five homeless generations in India.

Around the globe, epidemiologists, statisticians, biologists, and health officials are grappling with these questions of COVID-19. Though engineering perspectives are uncommon in epidemiological modelling, we believe that in this case public officials could greatly benefit from one. Of course, the COVID-19 pandemic isn't an obvious or typical engineering problem. But in its basic behavior it is an unstable, open-loop system. Left alone, it grows exponentially, as we have all been told repeatedly. However, there's good news, too: Like many such systems, it can be stabilized effectively and efficiently by applying the principles of control theory. Inspired by the important work of epidemiologists and others on the front lines of this global crisis, we have explored how one can help stabilize and diminish the rate of propagation of this deadly virus that now literally plagues us. It is during this longer-term phase, the inevitable relaxing of physical distancing that is required for a functioning society, Our goal here is to share some of our key findings and to engage a community of control experts in this vital and fascinating problem. Together, we can contribute vitally to the international efforts to manage this outbreak. The COVID-19 pandemic is unlike any other recent disease outbreak for several reasons. One is that its basic reproduction number or R0 is relatively high. R0 is an indication of how many people, on average, an infected person will infect during the course of her illness. R0 is not a fixed number, depending as it does on such factors as the density of a community, the general health of its populace, its medical infrastructure and resources, and countless details of the community's response. The goal of infectious-disease intervention is reducing the R0 to below 1, because such a value means that new infections are in decline and will eventually reach zero. But with the COVID-19 outbreak, the level of urgency is extraordinarily high due to the disease's relatively high fatality rate. Fatality rates, too, are quite variable and depend on such factors as age, physical fitness, present pathologies, region, and access to health care. But in general they are much higher for COVID-19 than for ordinary influenza. A surprisingly large percentage of people who contract the disease develop a form of viral pneumonia that sometimes proves fatal. Many of those patients require artificial ventilation, and if their number exceeds the capacity of intensive care units to accommodate them, some number of them, perhaps a majority, will die. A commonly cited proposal for relaxing from it is social-distancing whose measures is an on-off approach, where some restrictions are lifted when the number of new cases requiring intensive care is below a threshold and are put back into place when it exceeds a certain number.

The point is, a pandemic is a dynamic, fast-moving situation, and inadequate local attempts to monitor and control it can be disastrous.

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II. LITERATURE SURVEY

Corona Virus Disease is an infectious disease caused by severe acute respiratory syndrome coronavirus2 (SARS-coV-2). The virus is primarily Spread between people during close contact, often via small droplets produced by coughing, sneezing or talking. Although government have taken necessary precautions. But still not every person is serious about it. The future of this pandemic will be determined by what happens to densely-populated countries. It's important that India takes aggressive action at the public health level, and at the level of society to control and suppress this disease. Even if India's damage were ascertained using an international benchmark for poor economies -15 million to 76 million Indians might join the ranks of the poorest in this crisis. While some cities like Delhi and Chennai have several homeless shelters, in other parts of the country, like Mumbai, many are stranded on the streets. Some states are now scrambling to put the homeless in tents in parks, or at schools and other vacant spaces. In the eastern city of Kolkata, a municipal councillor said government-run homeless shelters were all packed and there was no way of keeping people apart as a corona virus precaution.

India has more than 1.7 million homeless residents, of which 938,384 live in urban areas. Advocacy group Housing and Land Rights Network estimates that the urban population of homeless can be extrapolated to be at least 3 million. According to the 2011 Census data, the density of population per sq. km. is 382 persons in India. Eviction threats, lack of access to basic amenities, and absence of government interventions continue to haunt the lives of people in informal settlements. Around 13.7 million households, or 17.4 per cent of urban households, live in informal settlements. Roughly, around 68 million people live in informal settlements in India. The homeless living in high-density areas such as shelters and informal settlements are most at risk "You fear the disease, living on the streets. But I fear hunger more, not corona," said by every migrant labour.

Table I
Temporal Changes(2001-2011) Homeless Households in India.

	All Households		Houseless Households			
			Absolute		Percentage	
	2001	2011	2001	2011	2001	2011
Total	19,35,79,954	24,94,54,252	4,47,552	4,49,761	0.23	0.18
Rural	13,77,73,323	16,85,65,486	2,59,742	1,92,865	0.19	0.11
Urban	5,58,06,631	8,08,88,766	1,87,810	2,56,896	0.34	0.32

TABLE II
TEMPORAL CHANGES(2001-2011) HOMELESS POPULATION IN INDIA

	All Population			Homeless Population				
				Absolute		Percentage		
	2001	2011	Growth Rate (2001-2011)	2001	2011	2001	2011	Growth Rate (2001-2011)
Total	1,02,86,10,328	1,21,05,69,573	17.7	19,43,476	17,72,889	0.19	0.15	-8.8
Rural	74,23,02,537	83,34,63,448	12.3	11,64,877	8,34,541	0.16	0.10	-28.4
Urban	28,63,07,791	37,71,06,125	31.7	7,78,599	9,38,348	0.27	0.25	20.5

III.SCOPE OF THE PROJECT

The project building is to provide chief support for upcoming problems related to covid19. there will be an application called 'Smart Sahayata' for android and iPhone based where the application can be used to help the homeless people and prevent violation of social distancing and also a platform for easier donation of money or food.

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IV. REQUIREMENT ANALYSIS

A. System Model

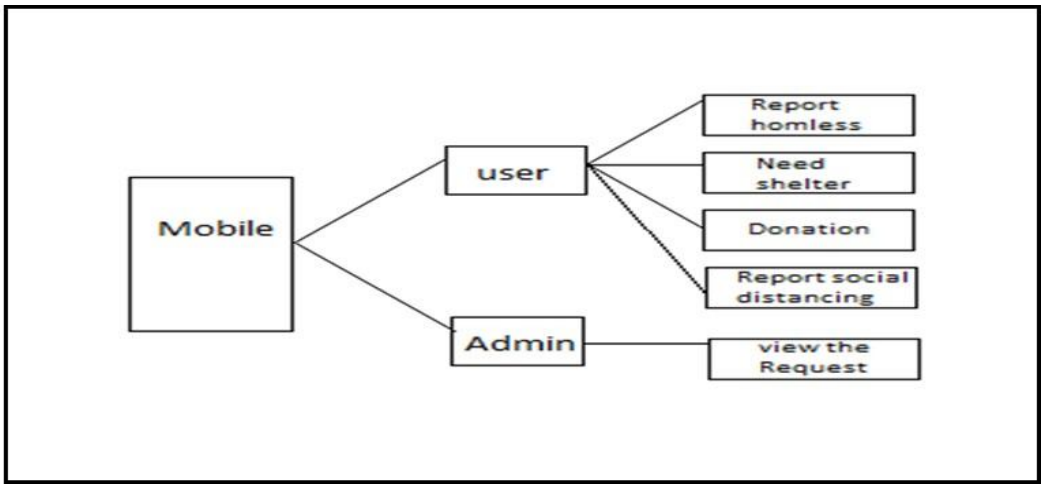


Fig. 1 Proposed System Model

The Fig 2.1, Proposed System model describes working of an application. All the user need to do is to open up the application and click on any of the 4 tabs that is to report Homeless/Find Shelter/Donation (money or food packets)/violation of social distancing. On doing so user details i.e. Location information, who is in need of help from the government will be passed to the admin. So that government can take necessary steps.

B. Functional Requirements

1) *Report Homeless:* Whenever a user spots any homeless person somewhere, they can use this tab. On pressing this tab, the application will open up the camera and will ask the user to click a snap of the person. After clicking the images, the snap with that location will be sent to them to track and rescue the exiled.
2) *Find Shelter:* Whenever a user is in need of shelter or food then he/she can use this tab on doing so it will locate user to the nearest shelter homes.
3) *Report Violation of social Distancing:* Whenever a user spots any location where social distancing is violated. User can press this tab, the application will open up the camera and will ask the user to click a snap of the area. After clicking the image, these image and location will be sent to the admin to track and take necessary action.
4) *Donation:* It helps the user to easily donate the money or the food packets. When the user clicks on this tab the user location will send to the admin so that they can collect the food packets and distribute it to the person needed.

C. Non-Functional Requirements

1) *Availability:* The system shall be available all the time unless major maintenance work is under process.
2) *Scalability:* The system can handle a large increase in users, workload and transaction's
3) *Responsiveness:* The system shall respond to any kind of user interactions within seconds.

V. SYSTEM DESIGN

A. Description of Modules

1) *Report Homeless Module:* This module is to help the people who don't have cell phones. It helps the user to report any homeless person. When he/she spots any exiled person somewhere who needs helps, they can use this tab. On pressing this tab, the application will open up the camera and will ask the user to click a snap of the exiled. After clicking the image, this image and location will be sent to the admin to track and rescue the homeless people.
2) *Find Shelter Module:* This module helps the people who have cell phones and can operate the application on their own. If the person is in need of shelter then he/she can use this tab on doing so it will locate the user to the nearest shelter home.
3) *Report violation of Social Distancing Module:* This module helps the user to report the Location information of area where social distancing is violated. On pressing this tab, the application will open up the camera and will ask the user to click a snap of the area. After clicking the image, these image and location will be sent to the admin to track and take necessary action.

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4) *Donation Module:* This module helps the user to easily donate the money or the food packets. When the user clicks on this tab the user location will send to the admin so that they can collect the food packets and distribute it to the person needed.

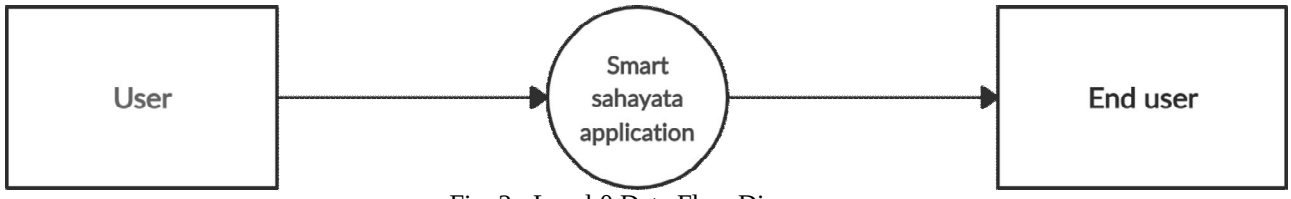


Fig. 2: Level 0 Data Flow Diagram

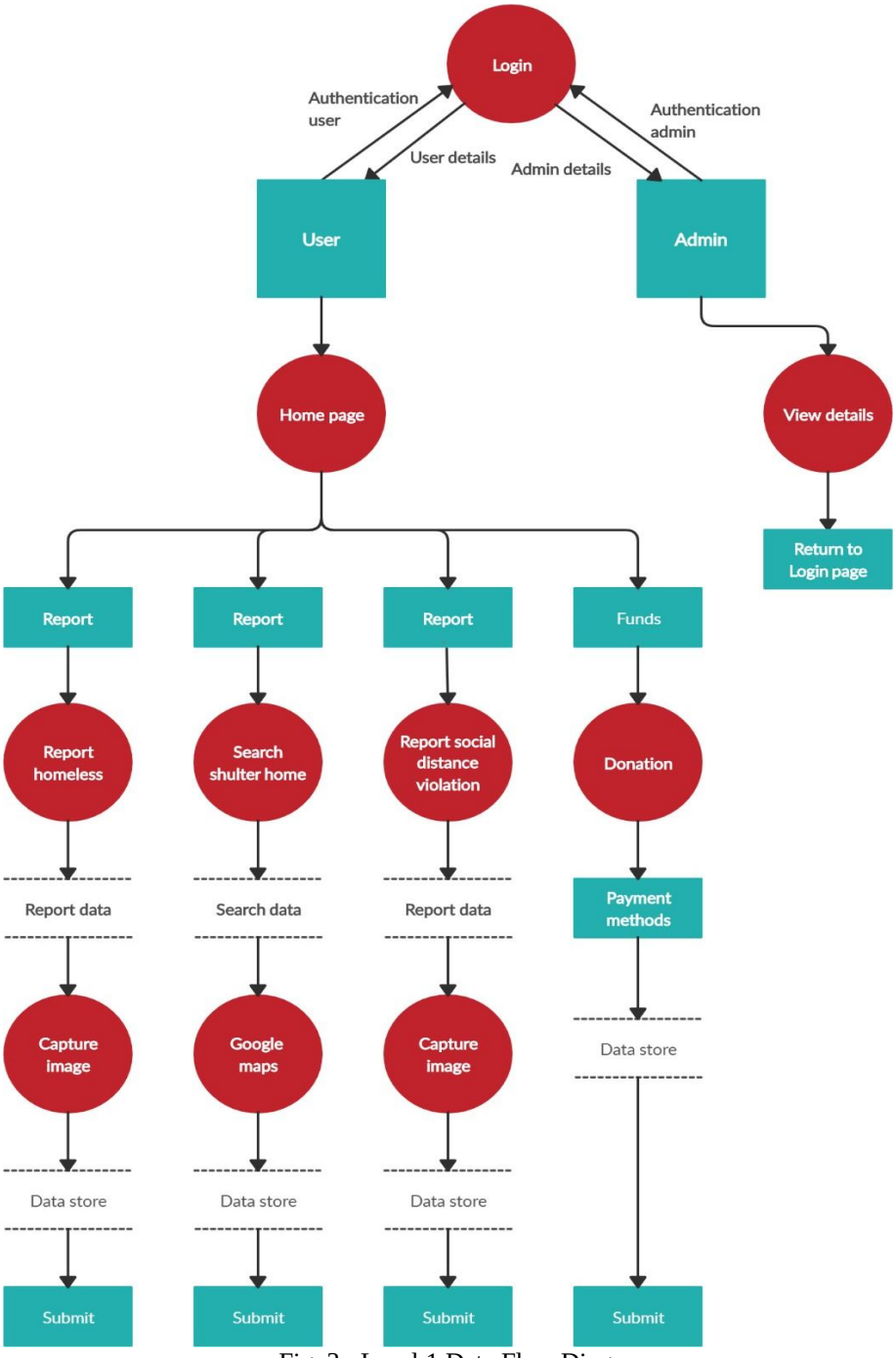


Fig. 3: Level 1 Data Flow Diagram

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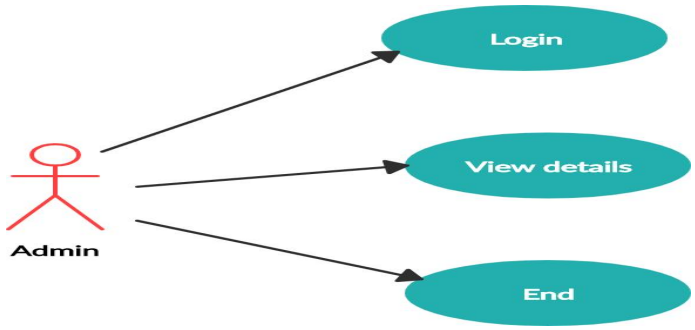


Fig. 4: Use Case Diagram for Admin

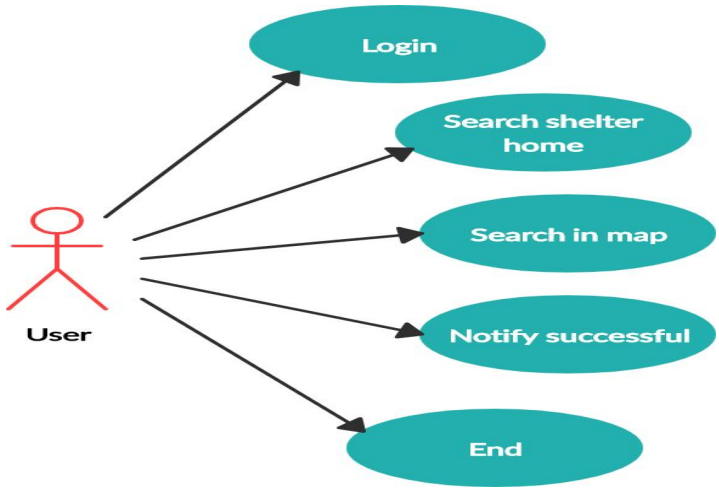


Fig. 5: Use Case Diagram for 'Find Shelter' Tab

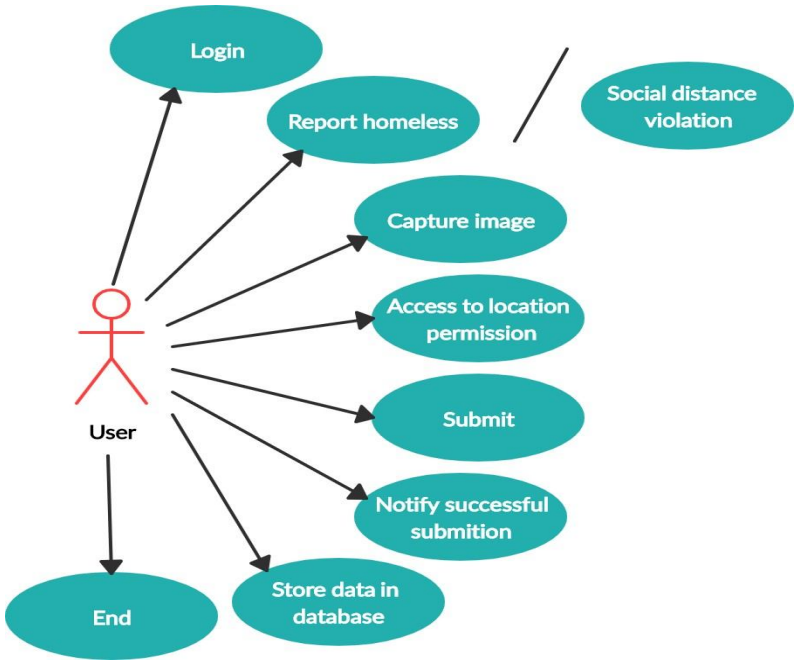


Fig. 6: Use Case Diagram for 'Report Homeless/Social Distance Violation' Tab

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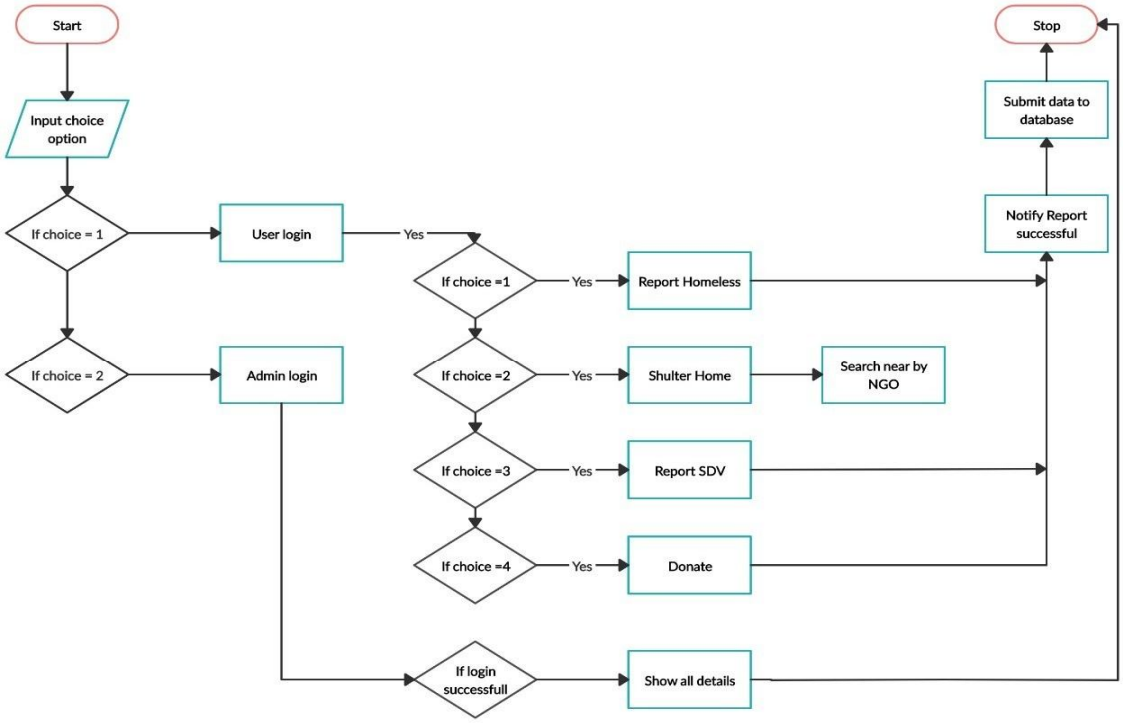


Fig. 7: Flowchart

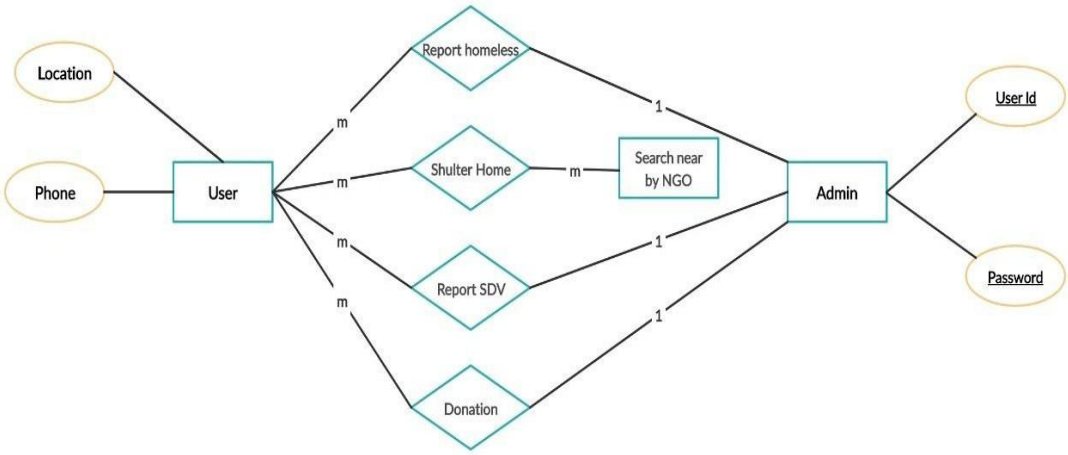


Fig. 8: E-R Diagram

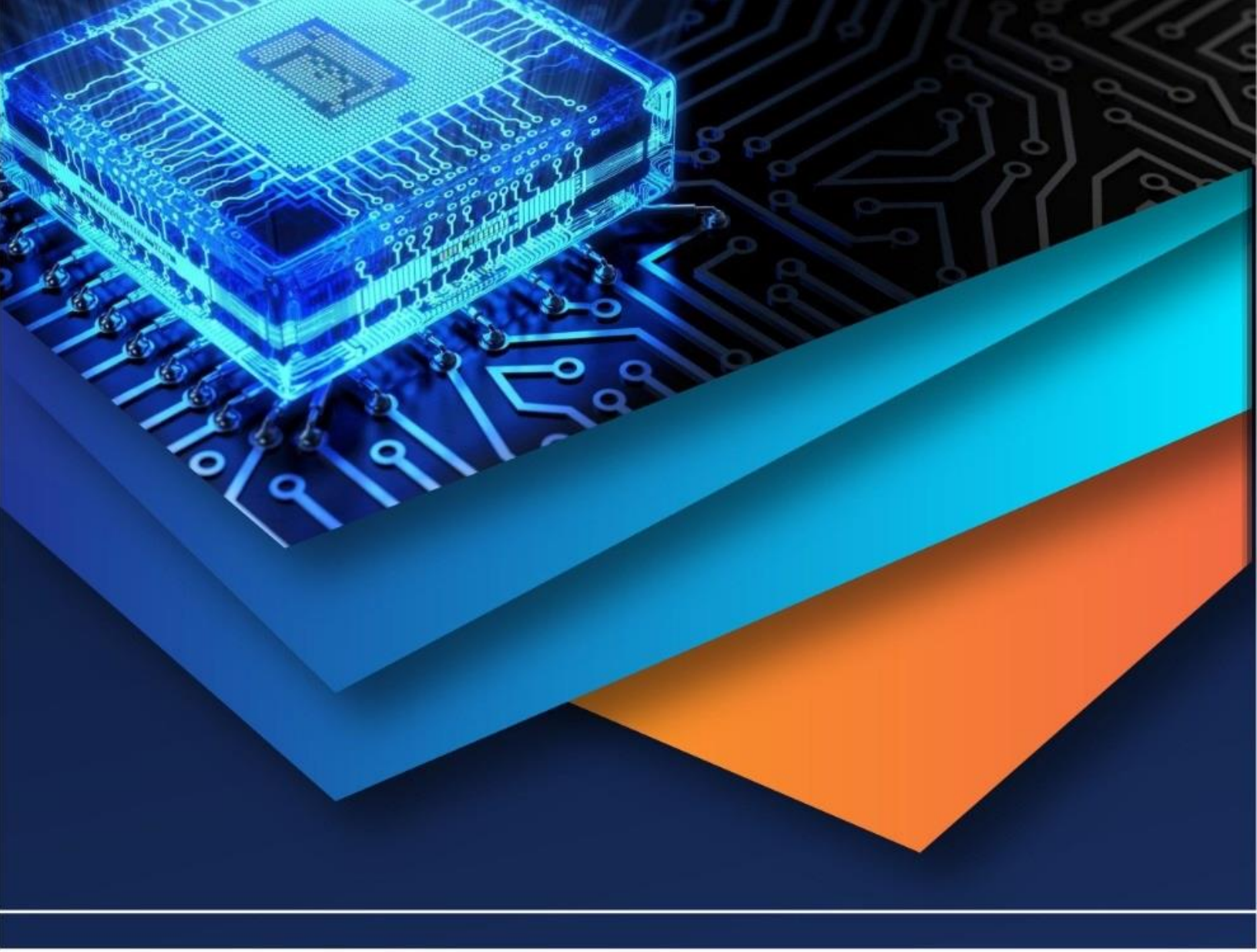
VI. CONCLUSIONS

In order to reduce the number of homeless, social distancing problems related to Corona Virus Pandemic, we have defined a new approach towards humanity. Where the people of India can save many souls with just one click of their finger. We hope this work will help in the direction of making a safer roof over every citizen's head. And every citizen of this country can have a quality of living.

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