Precautionary Savvy Fan to Prevent Suicide

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Abstract: Maniacal case accordingly creating what is going on of hanging is staggeringly unprecedented. To perceive reckless/lethal hangings, the appraisal of wrong doing area on various focal issues in undisturbed condition followed through posthumous review is vital to track down the certified truth. The most utilized technique for self-destruction is by draping oneself to a fan. Selfdestruction by hanging is extremely disturbing around the world. India has the most noteworthy selfdestruction rate in the South-East Asian locale, as per the World Health Organization's most recent report. The report delivered a day prior to World Suicide Prevention Day in 2019, fixed India's self-destruction rate at 16.5 suicides per 100,000 individuals. Since the beginning of the pandemic because of the Covid, the self-destruction rates are increasing in decent number. According to a report of National Crime Records Bureau (NCRB), Government of India, a seriously decent number of hanging cases are accounted for each year. The vast majority of the hanging cases are usually self-destructive. Numerous frameworks have been proposed to forestall these cases. Consequently, this avoidance frameworks will help in saving lives to beat this issue, the fundamental target of this paper is to lessen the self-destruction endeavors happening.

Keywords: Ceiling fan, Weight, Spray,Control.

I. INTRODUCTION

Suicide is a major soceconomic and public health issue worldwide. Hanging is one of the 10 leading causes of death in the world accounting more than a million deaths annually. In India, hanging is second common method of committing suicide after poisoning. Over the past 30 years the incidence of suicide by hanging is on increase, especially among young adults. The fact that 71% of suicides in India are by persons below the age of 44 years imposes a huge social, emotional and economic burden on our society. Its prevention is still a challenging job for public health authorities. A detailed knowledge of various factors associated with suicidal hanging in that particular geographical area is very much necessary to prevent such suicides. Keeping this in mind we conducted a prospective study at India, to focus on the various factors associated with suicidal hanging, with a view to identify the areas of intervention. Individual, relational, community, and societal initiatives may all be involved. Often, suicide may be avoided. The proposed system uses a weight sensor to immediately weigh the person once they try to hang themselves. In order to overcome these problem the main objective of the project is to reduce the   suicide attempts occurring through ceiling fan.The proposed project design consists of ceiling   fan with hardware components of Arduino UNO, Sensors, Buzzer, Sprayer and DC motor. And software used are Embedded C. Simultaneously an emergency message will be sent to the registered emergency contacts so that they are aware of the situation and can take the necessary action. Whenever the person tries to hang the fan load cell senses the set weight, if it's more than the set point weight,the beam gets elongated and comes down. In addition to these the alarm is sounded and Nodemcu sends the message to the particular guardians.

II. METHODOLOGY

Methodology gives the systematical, theoretical analysis of the methods applied to develop and here the monitoring system we are using is IOT and Embedded C. The aim of the work is to reduce the suicide attempts through ceiling fan. Whenever someone tries to hang themselves to a ceiling fan:-Load cell is used to detect the hanging weight, if weight increases beyond the threshold value, immediately the input is given to Arduino which will in turn on the DC Motor Connected to Pulley, then the fan is automatically released down. When Suicide attempt happens, the camera is on live stream and an alert message to the concerned person and buzzer will start beeping to alert the surrounding people. At the same time the Arduino module will give an input to the relay to which a spray pump is connected to spray the chloroform on person who is trying to commit suicide. The task has the essential thought of discovery and assortment.The detected weight is given as the input to arduino module which will in turn, turn on the DC Motor Connected to Pulley, then the fan is automatically released down. And the NodeMcu will send a notification to care Taker about the issue and he can see live streaming about the issue with the help of ESP32 camera.
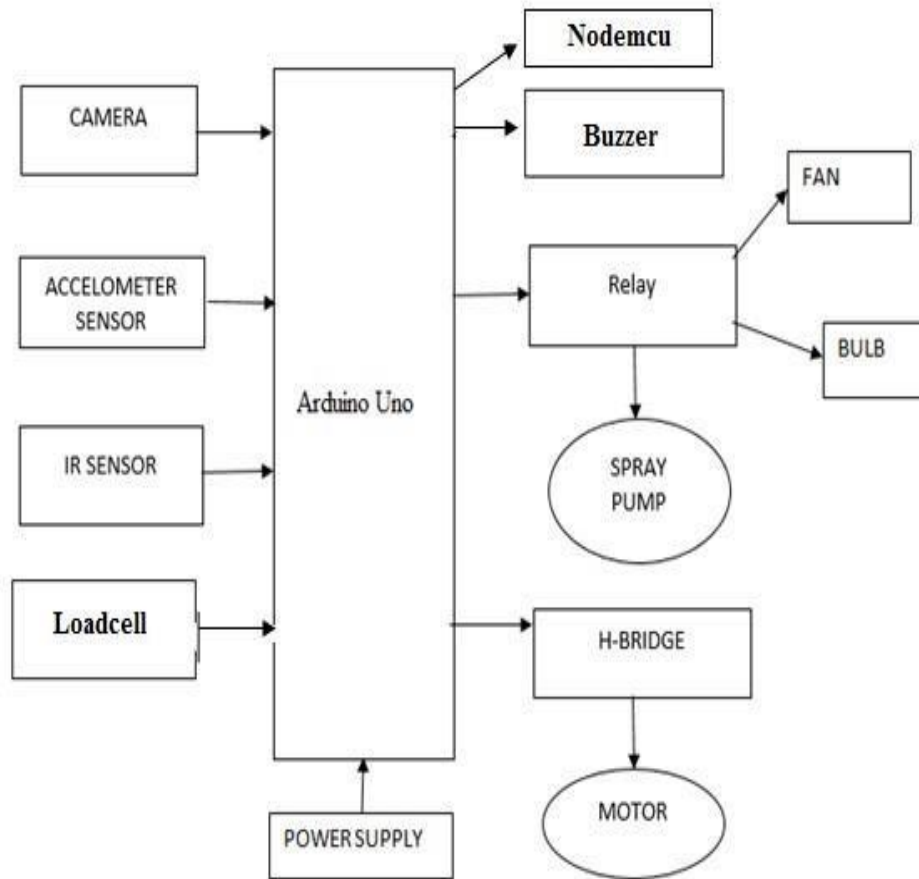
Figure 1: Block diagram of Precautionary Savvy Fan to control suicide.

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III.   FLOW CHART

In this proposed system if the IR sensor is detected next it will look for the change in weight if there is change in set weight the buzzer, Wi-Fi module and motor or actuator will work if not it will go back to the initial condition .
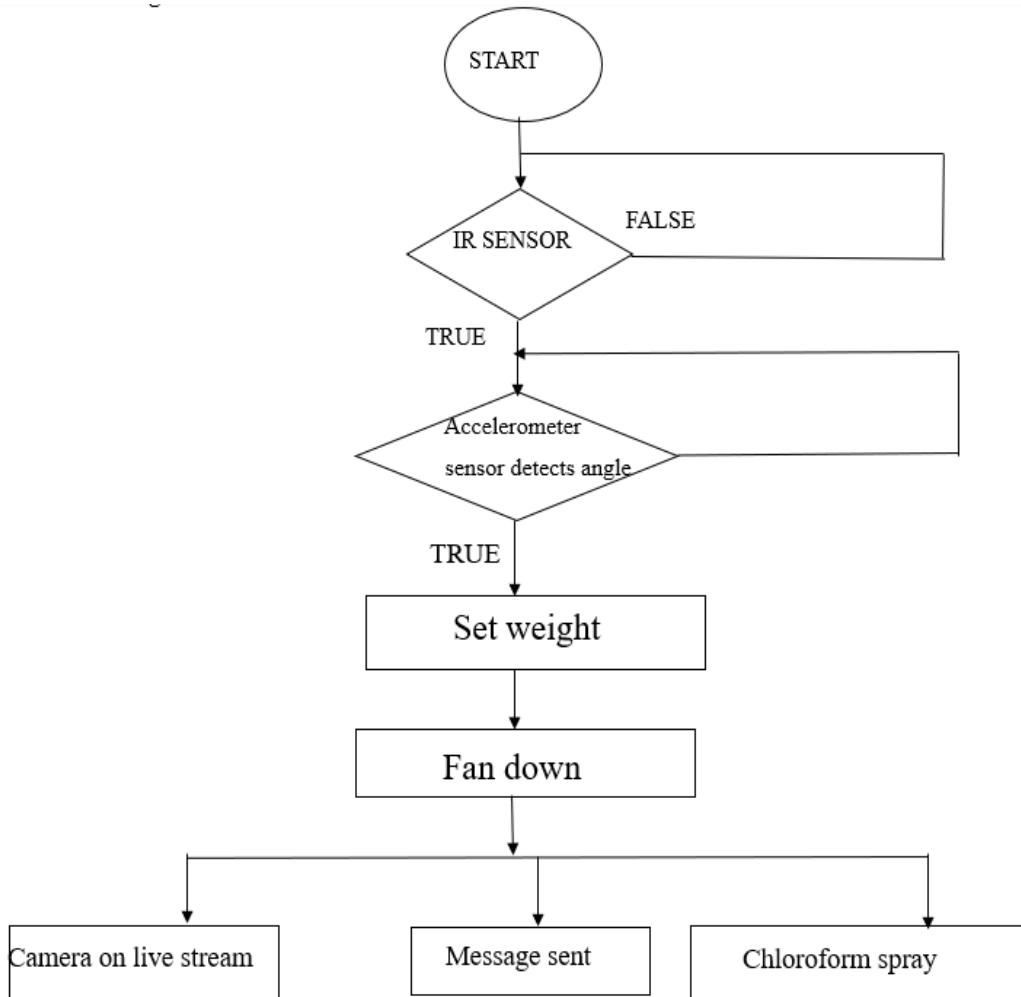
Figure 2: Flow chart of Precautionary Savvy Fan to control suicide
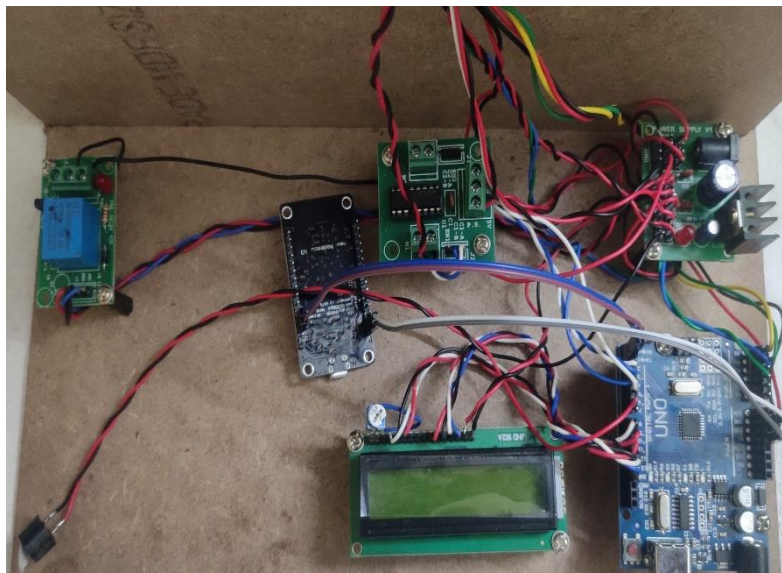
IV. RESULTS

Figure 3: Components setup of suicide control.
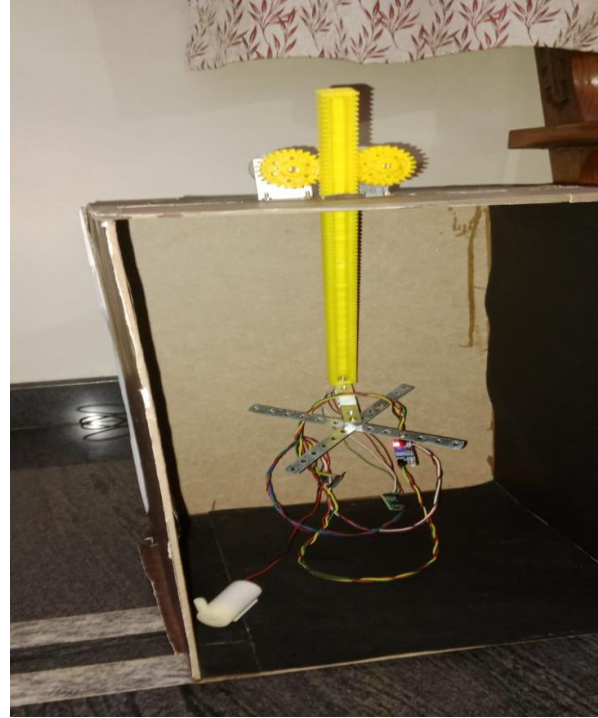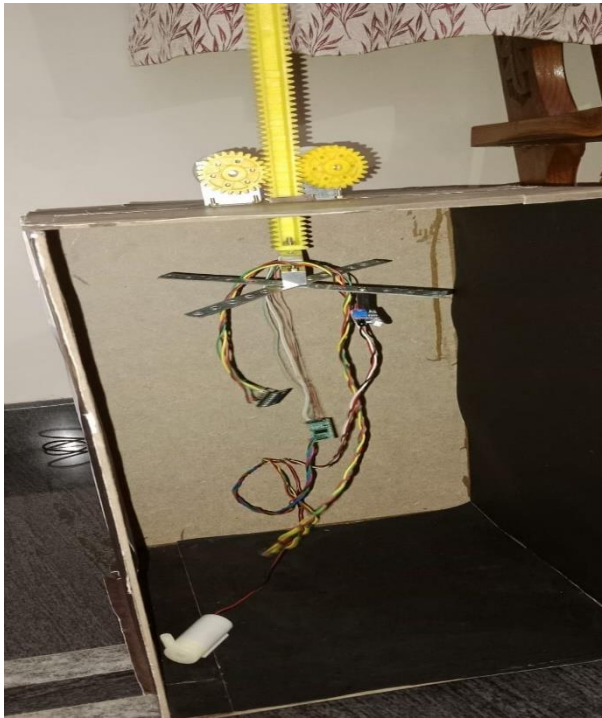
Figure 4: Initial condition of the fan before hanging.
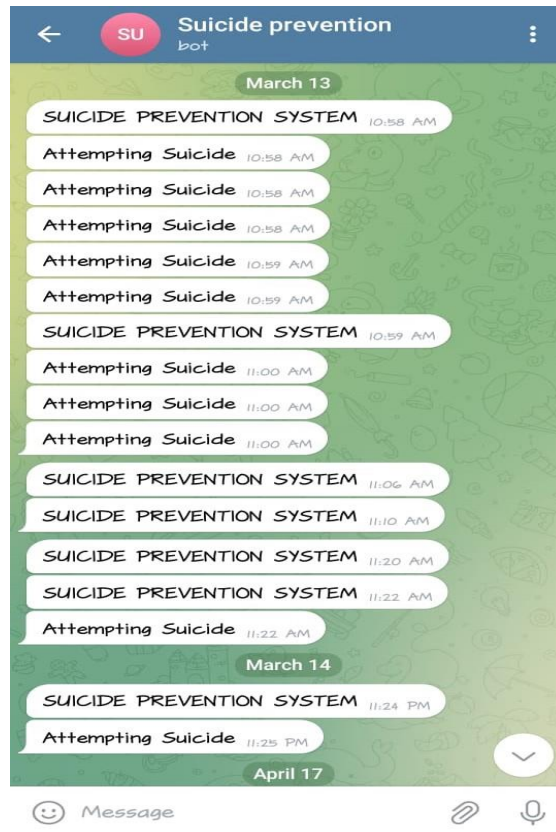

Figure 5: Fan down after a person hanging.

Figure 6: Message send to caretaker

V.   CONCLUSION

Self-destruction is the point at which someone causes physical or emotional harm to themselves. And it is more noteworthy at the house where a kid is left alone, he/she might experience difficulty focusing or thinking plainly will take part in hazard taking practices. More often than not individuals select to hang themselves roof fan as it requires some investment for death to happen and some of them simply have a considered endeavouring self-destruction. We close here by going through every one of the proposed frameworks that with the assistance of developing innovation we can totally escape self-destruction endeavours. Every one of the frameworks here are created to give the security to the guardians/parents. The System will be designed using structured modeling and is able to provide the desired results. It can be successfully implemented as a Real Time system with certain modifications. Science is discovering or creating major breakthrough in various fields, and hence technology keeps changing from time to time. Going further, most of the units can be fabricated on a single along with microprocessor thus making the system compact thereby making the existing system more effective. To make the system applicable for real time purposes components with greater range needs to be implemented.

REFERENCES

[1]. S. Sankaranarayanan and A. Periasamy, "Approach for Preventing Suicide on Ceiling Fan", IJRAMT, vol. 2, no. 4, pp. 74–76, Apr. 2021.

[2]. Mishra A., Gunji B., Deepak B.B.V.L. "A New Safety Design of the Ceiling Fan to Avoid Suicidal Cases". In: Chakrabarti A. (eds) Research into Design for a Connected World. Smart Innovation, Systems and Technologies, vol 134, 2019.

[3]. Raghavendra S Narsapur, Basavaraj P Hiremath, Dr. B. M. Jayadevappa, "A Novel Approach on Ceiling Fan Based System to Avoid Suicide by Hanging", INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) NCRACES (Volume 7, Issue 10), 2019.

[4]. Prabha Sundaravadivel Paola Salvatore Premananda Indic, "M-SID: An IoT-based Edgeintelligent Framework for Suicidal Ideation Detection", The University of Texas at Tyler, TX, USA. Belmont. November 05,2020. IEEE.

[5]. Wassim Bouachir2, Rafifik Gouiaa3 and Rita Noumeir4 134 Ecole, "Real-time recognition of suicidal behavior using an RGB-D camera Bo Li", detechnologie superieure LICEF research center, TELUQ University, Montreal (QC).

[6]. S. Berrouiguet1,, R. Billot, P. Lenca, P. Tanguy1, E. Baca-Garcıa M. Simonnet B, "Toward E-Health Applications for Suicide Prevention", Gourvennec Institut Mines-Telecom,Telecom Bretagne, France. 2015 IEEE First Conference on Connected Health: Applications, Systems and Engineering Technologies 2016.

[7]. M. E. Larsen et al., "The use of technology in Suicide Prevention", 2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), pp. 7316-7319, 2015

[8]. P. Bharti, A. Panwar, G. Gopalakrishna and S. Chellappan, "Watch-Dog: Detecting Self Harming activities from Wrist worn accelerometers".

[9]. O. Keskes and R. Noumeir, "Vision-Based Fall Detection Using ST-GCN," in IEEE Access, vol. 9, pp. 28224-28236, 2021.

[10]. K. D. Varathan and N. Talib, "Suicide detection system based on Twitter," 2014 Science and Information Conference, pp. 785-788, 2014.

[11].Kishan Kariippanon, Coralie J. Wilson, Timothy J. Mc Carthy and Kairi Kõlves "A Call for Preventing Suicide by Hanging from Ceiling Fans: An Interdisciplinary Research Agenda", International Journal of Environmental Research and Public Health,vol. 9, 2019.

[12].Prithvi Nath Saranu, Abirami. G, Sivakumar. S "Theft Detection System using PIR Sensor", 4th International Conference on Electrical Energy Systems, vol. 978, 2018.