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Multipurpose Delivery Robot Controlled with OTP and Security for the Package

¹G Vasanth Rao, ^{2*}G Anusha, ³G Teja Sai, ⁴K Karthikeya, ⁵V.Naga Sai Chaitanya

¹Assistant Professor, Department of Electronics and Communication Engineering , St. Peter's Engineering College, Hyderabad, Telangana, India

^{2,3,4,5}UG Student, Department of Electronics and Communication Engineering, St. Peter's Engineering College, Hyderabad, Telangana, India

ABSTRACT: This is the generation full of robotics and automation. Robotics has the potential to transform the livelihood in an easy manner with the human involvement. As the COVID pandemic has increased the need for touch-free interactions. So, to boost e-commerce and food deliveries without the spread of infections due to contact we here propose an autonomous delivery robot system. The robot is designed with an Arduino UNO board to ensure the complete robot working. The robot is controlled by a 4-wheel drive and remotely controlled via a gsm remote. Also, the robot has an upper section to carry packages on it that can be opened only to intended recipients.

KEYWORDS: Arduino, GSM, VOLTAGE DRIVER IC L293D,16X2LCD

I.INTRODUCTION

The word "Robot" is one of those volatile terms that have defied a unique definition. One reason for this is that its use changes all the time. Initially, a robot was a humanoid or human-like being. The word "Robot" is derived from the Czech word meaning slave and was coined by Kapec, Rossum's Universal Robots in 1921[1]. These robots were biochemical – what we would now call androids. This was copied soon by several films featuring robots such as Fritz Langes 1922 Metropolis that excites the imagination [2] of both the public and science and engineering communities. Science fiction books such as Asimov's "I Robot", from that we got the term robotics, were also popular at this time.

As in this current situation, covid cases are increasing very rapidly. Many people have a perception that covid has increased due to high contact culture. This is the main ground for the decrement of e-commerce applications [3] which is based on one-to-one delivery. To avoid this problem, we proposed a project called multipurpose delivery robot controlled with GSM and OTP security for the package. a multipurpose delivery robot is a robot that ensures contact-free delivery with high security to the package. Security to the package includes a GSM modem with OTP.OTP is provided to the user to collect the package. If the case user enters the wrong otp then it will generate a message. This robot incorporates an Arduino board for working and it considers 4wheels with 2DC motors driven by driver IC. [4] To avoid stick-up of the package we provide a buzzer to alert the person. It will deliver Maxima of 10kgs.

II. LITERATURE SURVEY

[1] This paper is proposed by Ad F. Carrera, T. Canas, and A. Silva. 2006. We found the technic Mobile\Robot to Deliver Meals inside Health Services.The Technic mobile \robot to deliver meals inside the health care centers is a project which was proposed to create a device that acts as a delivery system between the kitchen and the patients or the emergency ward as the temperature difference is seen in the rooms like ICU, UICUs the food transfer will be easier. This project failed as the trolley was too huge and there need to be one for one floor so we have taken a basic idea of the system and changed the drawback of being complex and huge.

[2] This paper is from the International Journals of Science and Technology. 2(3), ISSN:2321-919 which was proposed by M. Dhivya and M. Pushpavalli. 2014. This paper was found efficient as they have used GPS. The above Paper which was done by T.Canas [1] they have to



infuse GPS which had a clash as the distribution was been located at the same location. We found the technic Automatic Delivering System in Hospital Using GPS Technology and Efficient Fault Management. So we have taken a basic working of the project and used in our project.

[3] The paper is proposed by the Roman Osorio C., Jose A. Romro, Mario Pena C and Ismael Lopez Juarez. 2006. We found the technic Intelligent Line Follower Mini Robot System. International Journals of Computers, Communications, and Control. I (2): 73-83 from this paper, This research has the simple change which is the line follower robot technique is used which can complex the delivery issue in building new lines just for a robot to deliver. We have considered this also as a stopper in our project and also no prototypic evidence is present.

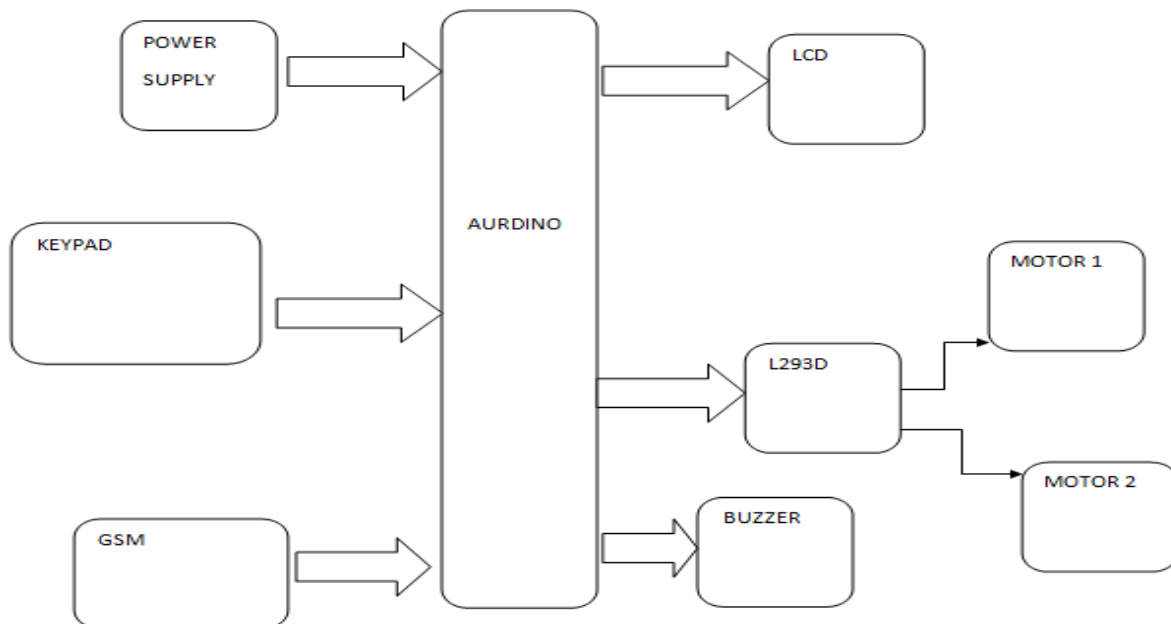
[4] The paper is proposed by Nirmal T M We found the technic “Multipurpose Robot for Patient and Military Applications”, International Journal of Electronics Communication and Computer Technologies (IJECCT), 2014. As per the author's view this project is where a robot is sent to find and detect the patient or a soldier who is injured and bring him back to the base for treatment which also has no prototypic Evidence, we have taken the structure from this paper, as this is a military application.

III. PROPOSED SYSTEM

In this paper we proposed a system called Multi-Purpose delivery robot with GSM and OTP security for the package. It is a system with a GSM modem which work in remote areas efficiently. It can deliver the package with high security using gsmotpsystem. It works on certain commands given by the delivery boy. It can assure a contactless delivery which is mainly used in this pandemic situation.

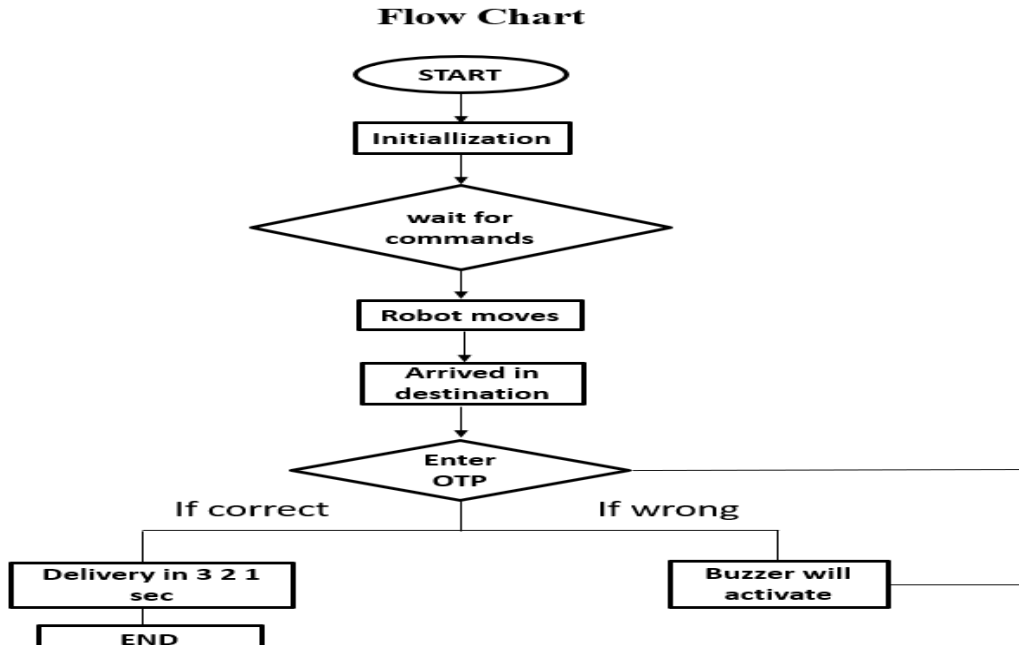
The main aim of this paper is to explain the monitoring method used to operate the robot, with the help of an android phone, clean and pick and place Objects. Check Whether the switched on the system the message displayed on the LCD or not. If the system is properly working then in the absence of the owner it will properly work. Finally, the microcontroller decides to give commands to the motor driver to drive the motor in different directions by commands.

3.1 Block diagram





3.2 Flow chart



IV. CONCLUSION AND RESULT

4.1 RESULT



The implementation and realization of “Design and Implementation of Multipurpose delivery robot controlled with Gsm and Otp using Embedded Systems” is done successfully. The communication is properly done without any



interference between different modules in the design. Design is done to meet all the specifications and requirements.

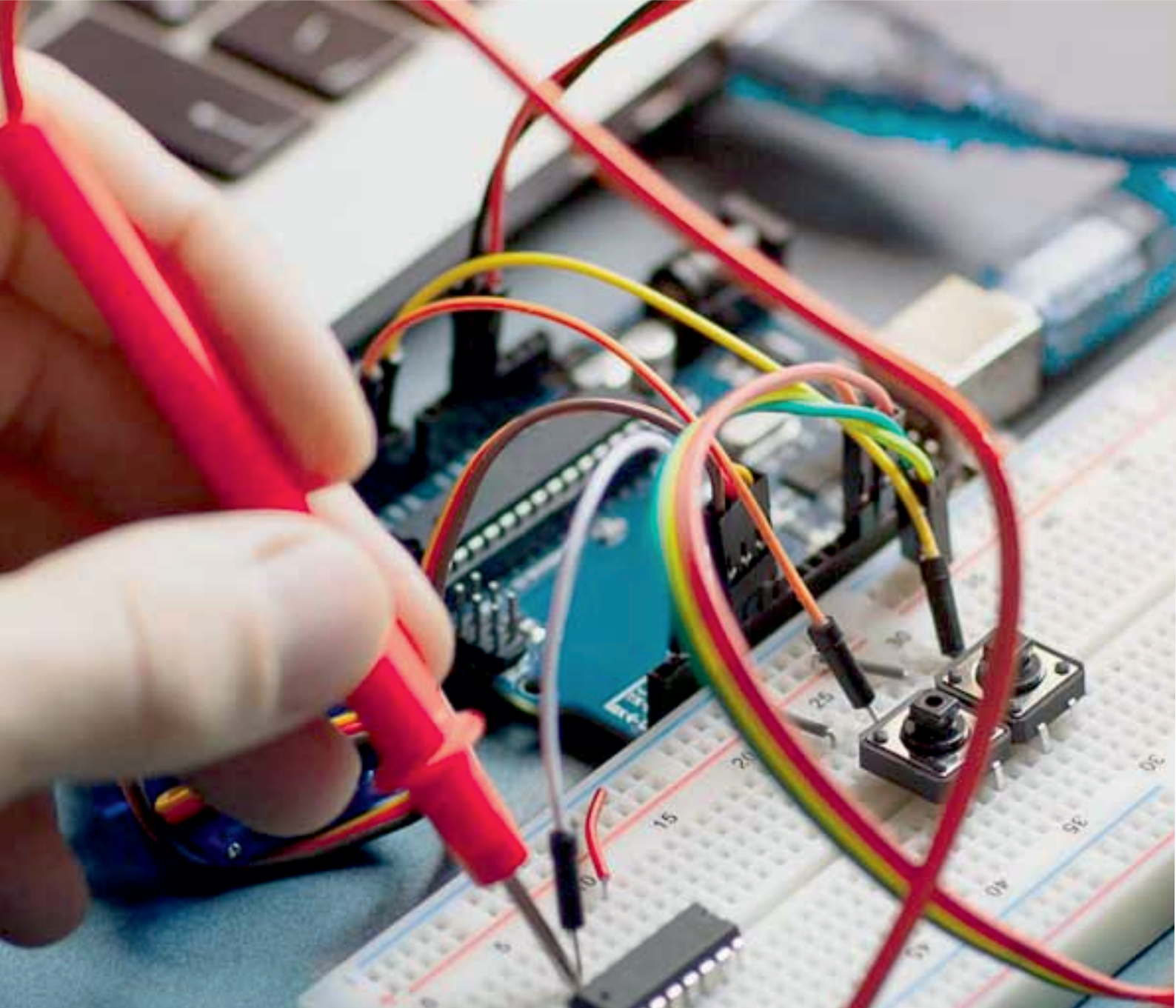
V.CONCLUSION

The main aim of this paper is to explain the monitoring method used to operate the robot, with the help of an android phone, clean and pick and place Objects. Check Whether switched on then the system shows the message displayed on the LCD or not. If the system is properly working then in the absence of the owner it will properly work. Finally, the microcontroller decides to give the command to the motor driver to drive the motor in different directions.

The projects main outcome satisfies, no contact delivery, and also a safe delivery this project reduces efforts of lifting and transporting of the goods to be shipped at higher altitudes (apartments) as this is secured with the OTP system, any misuse of the device storage alerts is generated this is also to reduce time and effort the delivery would be smooth fast and secure.

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