**An Arduino Based System for Calculating the Average Life Time of a Person via Indoor Oxygen Content**

**ABSTRACT**

The concept of the internet (IOT) of objects reshaping human life sets the ground for solutions that can respond innovative products and ultimately new and wonderful ways of doing business. It can also be easily integrated into systems developed to facilitate everyday life. In this study; a system has been developed that communicates by calculating the remaining lifetimes of people who live in a closed area and communicating information to the outside user with the help of wireless technology in order to follow up the situation. Moreover, this system prints the amount of oxygen in the environment and the calculated average life span until a moment of rescue, instantaneously on a screen informing the inside people. In addition to this, the temperature, humidity and gas values of the environment are measured simultaneously with the amount of oxygen, so that the information related to the system can be transferred and the possibilities of adverse effects can be observed.

**Keywords**—Arduino, Life Time Indoors, Oxygen Quantity, Wireless Communication, Observation and Reporting of Data, Oxygen and Gas Measurement, Moisture and Temperature Measurement, IoT

**INTRODUCTION**

Today, many technology products have been developed in order to facilitate and even rescue human life in a software and hardware sense. Even though these hardware and software, which are often used to facilitate human life and to make the work done by human power machine, are systems that can stimulate and interfere with human life to save and to perceive possible harm. Nowadays, objects with internet connection, which can access to the internet network via wired or wireless way, have become electronic systems capable of data analysis and exchange. In this project, the remaining life expectancy of people who are left behind in an environment without oxygen entry can be calculated and informed to both the screen and outside accessible environments. A person who is left behind does not know the remaining life span and thinks that the air will be consumed immediately, especially for those who are claustrophobia, this effect is much more and affects the amount of oxygen in the environment negatively. As a result, people are affected psychologically or physically, such as rapid breathing or self-harm by panic, and even those who can survive as a result of these effects die prematurely. With this improved system, it is ensured that the person staying indoors is able to see the time remaining momentarily, to live for the period of time under control, to avoid unnecessary panic awareness and to avoid movements that will adversely affect the amount of oxygen in the environment. At the same time, in sudden oxygen drops, both the person staying in the closed area and the user outside are warned; it is necessary to stay stable and thus the survival time can be extended. Nowadays, with the development of technology, solutions are sought to increase the comfort of life in every area of life. The automatic realization of many manual activities in the past also allows us to devote more time.

**EXISTING SYSTEM**

In the existing system, the claustrophobia person need to watched every single minute and they need other people help to live a normal life. They require lot of attention. Any time the oxygen level decreases it become great problem. So it is very difficult to watch people for every time. In this many people also want live a healthy life so the required amount of oxygen is very important. Lack of oxygen will cause cell damage. They require doctor to know about the body condition but even the doctor cannot predict the cause because it is very slow process.

**EXISTING SYSTEM DISADVANTGE**

* Lack of attention
* Difficult to know reason even for doctors.
* Require costly devices.
* Live monitoring is not possible.

**PROPOSED SYSTEM**

A few basic goals have been taken into account in the work done. The first is to prevent the environment from affecting the amount of oxygen negatively on the assumption that a person left indoors does not know the remaining life span and that the air will be consumed immediately. The second is to ensure that people who are left indoors are able to feel as if they are suffering from psoriasis, fast breathing and panic through increased pressure to prevent self-injury. Additionally; the temperature, humidity and gas values of the environment are measured at the same time with the amount of oxygen to transfer the related information to the system and to observe the possibilities of adverse effects related to it and to facilitate the activities of the team to deal with from the outside. Finally, there may be additional benefits, such as reducing the psychological consequences of a person staying in a closed area and seeing the amount of instant oxygen. This may be the subject of research in medicine and social sciences. Like many natural organisms, people need oxygen to survive. The average amount of air that an average adult breathes in a minute is 7-8 liters while at rest. If calculated for a day, an amount of about 11000 liters is reached. Approximately 20% of the breathing air is oxygen, and exactly, about 15% of that oxygen is used. This means that 5% of the oxygen in the respiratory air is consumed and converted to CO2. From here it shows that people consume an average of 550 liters of oxygen a day. Gas sensors are devices that respond by changing the physical parameters of the sensor in the presence of the gas being analyzed and monitored by an external device. Gas sensors are often used in basic research. A person weighing 68 kg is breathing 12 m3 (14.4 kg) of air for 24 hours.

The development of the electronic tracking system ”Calculation of the Average Life Time of an Average Person Based on the Indoor Oxygen Content”, which was realized within the scope of the study, measured the amount of oxygen, temperature, humidity and gas in the environment. These operations are read with the help of O2, DHT22 and MQ4 sensors connected to Arduino and transfer these readings to desktop and web applications via serial port and to mobile application via Wi-Fi module; and a device with an LCD screen on which users can instantly view the amount of oxygen and remaining life span in the environment. Thanks to this device, it is aimed that the people who are locked in the closed areas will see the life span and knows that they have a longer time than they predicted. They will live longer on this count.

**PROPOSED SYSTEM ADVANTAGE**

* Easy to monitor
* Simple to develop
* Cost is more effective.
* Increase health.

**BLOCK DIAGRAM**



**HARDWARE REQUIREMENT**

* Arduino
* LCD
* GAS sensor
* Temperature sensor
* Humidity sensor
* Bluetooth/GSM/GPRS

**SOFTWARE REQUIREMENT**

* Arduino IDE