

IOT BASED SMART HELMET WITH SAFTEY APPLICATIONS

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ABSTRACT: - *In this project the design and development of Smart helmet for real time applications is implemented. Basically Accidents are increasing day by day all over the world. Firstly, When the Helmet button is pressed then ignition system will be on. Next whenever accident is obtained then vibration sensor gets activated and gives buzzer indication. And also sends SMS and location to the corresponding phone number. At last this project gives effective output.*

Keywords: - *Arduino, Vibration sensor, Crystal oscillator, RS-232, GSM, GPS.*

INTRODUCTION: -

Street security is a significant these days. As indicated by the WHO, street mishaps caused an expected 1.25 million passing's worldwide in the year 2013. The greater part of the mishaps happening cause extreme passing's because of rash driving, not utilizing security measures. Numerous individuals don't understand that wearing a protective cap decreases the danger of a serious cerebrum injury or even passing (now and again). Throughout a fall or crash, the vast majority of the effect vitality is consumed by the cap as opposed to your head and mind. Individuals are charged when they don't put on their protectors, yet they totally disregard the hugeness of it and cost their life for it. We have figured out how to make protective caps mandatory who is riding a bicycle. A simple,

cost-effective, agreeable way where the rider's security is given most extreme needs.

In this venture, the bicycle begins just when the rider puts on his head protector. Here, the RF transmitter is available inside the head protector and just when the individual wears it, the association is set up and the sign is sent to the RF beneficiary present in the bicycle which begins the start or beginning of the bicycle. So, the bicycle won't start except if the individual puts on the head protector.

GPS, GSM module and Accelerometer are likewise introduced in the protective cap which causes us know when an abrupt mishap happens (by checking accelerometer) and sends the area to our family. A global positioning frame work is empowered and can be observed (if required) if the individual is being trailed by an obscure individual or any such dangers. Thusly, the individual will never overlook or neglect to wear the head protector and maintains his wellbeing in a simple and agreeable way.

PROPOSED WORK

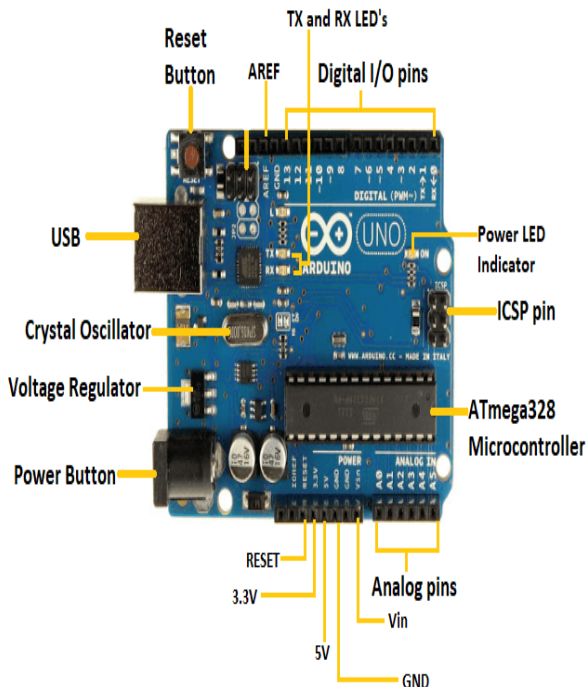
The figure (1) shows the block diagram of the proposed system

The above diagram shows the architecture of proposed system.

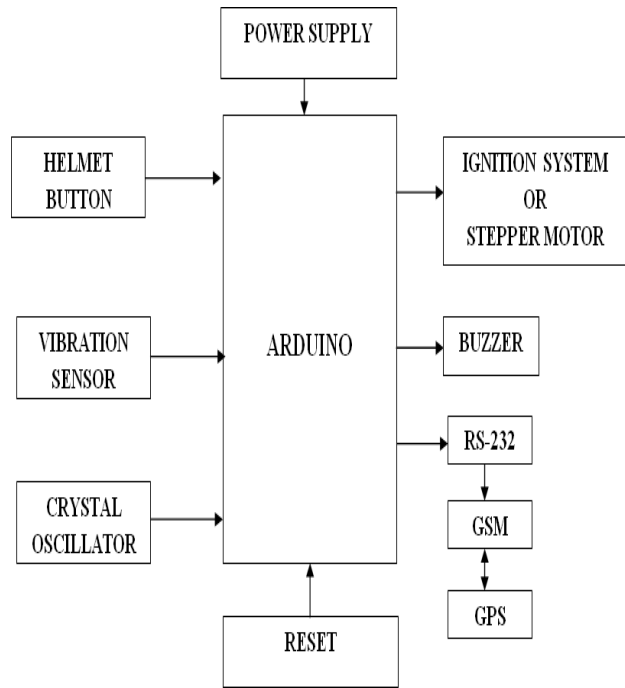
Firstly, When the Helmet button is pressed then ignition system will be on. Next whenever accident is obtained then vibration sensor gets activated and gives buzzer indication. And also sends SMS and location to the corresponding phone number.

ARDUINO

Arduino UNO is a microcontroller board based on the ATmega328p. It has 14 digital inputs/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16MHZ ceramic resonator, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with an AC-to-DC adapter or battery to get started.



"Uno" means one in Italian and is named to mark the upcoming release of Arduino 1.0. The Uno and version 1.0 will be the reference versions of Arduino, moving forward. The Uno is the latest in a series of USB Arduino boards, and the reference model for the



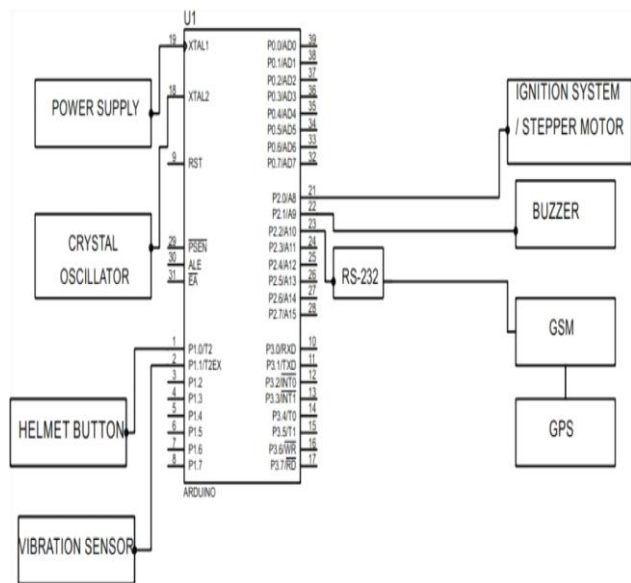
Arduino platform; for a comparison with previous version.

Figure (1): - Block diagram

In this the design and development of smart helmet for real time applications is implemented. Basically accidents are increasing day by day.

Firstly, when the helmet got some pressure then ignition system will go on and it doesn't in absence of pressure. If by a chance of accident is occurred, then vibration sensor gets activated and gives buzzer indication continuously and with addition to that, SMS and location to be forwarded to the corresponding phone number.

CIRCUIT DIAGRAM:-



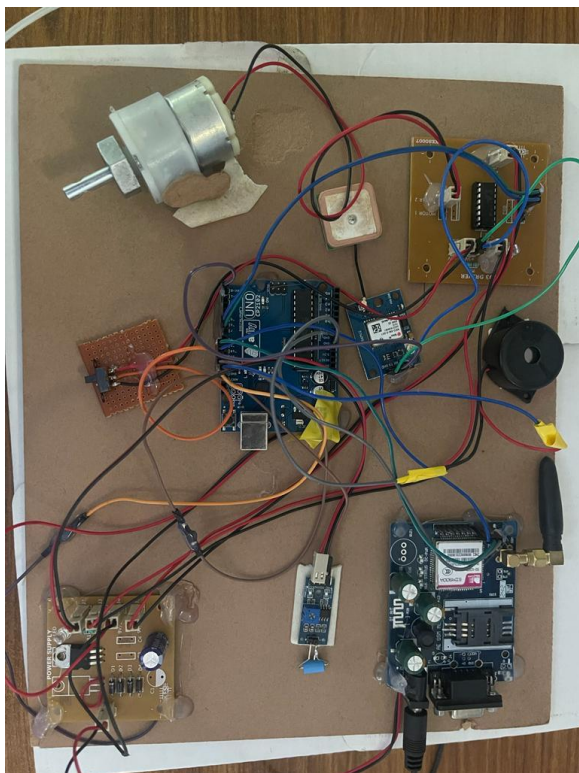
ADVANTAGES: -

- [1] This system will reduce the time.
- [2] This designed system provides low complexity.

APPLICATIONS: -

- [1] Real Time applications.
- [2] Industrial applications.

RESULT: -



CONCLUSION: -

Hence in this project the design and

development of Smart helmet with safety applications was successfully done. Firstly, when helmet is detected then engine will be started and when accident is occurred then vibration sensor detects the accident, the bike engine will be turned off and then as SMS and location of that person will be sent to the pre-assigned contact numbers which are written in the program. At last this project, gives effective output and can also detect the raider body temperature using temperature sensor.

FUTURE SCOPE: -

- [1] Motion capture through a camera integrated inside the helmet itself can sense the awkward moments using deep learning.
- [2] Replacement of preassigned contact number to corresponding nearby help stations such as Hospitals, Police stations, Ambulance.
- [3] Different Biosensors can also be implemented

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