

The Internet of Things is much more than machine to machine communication, networks, 2G/3G/4G, GSM, GPRS, RFID, WI-FI, GPS, microcontroller, microprocessor etc. These are considered as being the enabling technologies that make “Internet of Things” applications possible.

1.1 CHARACTERISTICS:

The fundamental characteristics of the IoT are as follows,

- **Interconnectivity:** with regard to the IoT, anything can be interconnected with the global information and communication infrastructure.
- **Things-related services:** The IoT is capable of providing thing-related services within the constraints of things, such as privacy protection and semantic consistency between physical things and their associated virtual things. In order to provide thing-related services within the constraints of things, both the technologies in physical world and information world will change.
- **Enormous scale:** The number of devices that need to be managed and that communicate with each other will be at least an order of magnitude larger than the devices connected to the current Internet. Even more critical will be the management of the data generated and their interpretation for application purposes.
- **Safety:** As we gain benefits from the IoT, we must not forget about safety. As both the creators and recipients of the IoT, we must design for safety. This includes the safety of our personal data and the safety of our physical well-being. Securing the endpoints, the networks, and the data moving across all of it means creating a security paradigm that will scale.
- **Connectivity:** Connectivity enables network accessibility and compatibility. Accessibility is getting on a network while compatibility provides the common ability to consume and produce data.

II. PROPOSED HARDWARE

This method aims at automatically controlling the speed of vehicles at speed restricted areas such as schools, hospitals, dangerous curves, temples and accident zones etc. by using internet of things.it involves in both hardware and software such as GPS system, sensors and database system. Accidents occurs not only in India but it also occurs throughout the world. Accidents occurs due to very high speed of vehicles. So it is very important to control its speed, so that accidents can be controlled and avoided.

III. DESIGN OF CONTROLLING THE SPEED OF THE VEHICLE

In this research, we proposed a speed controlling system for road vehicles, based on the paradigm of the Internet Of Things, allowing the road vehicles to have intelligence and ability to provide information for instance analysis and visualization using new paradigms such as cloud computing.

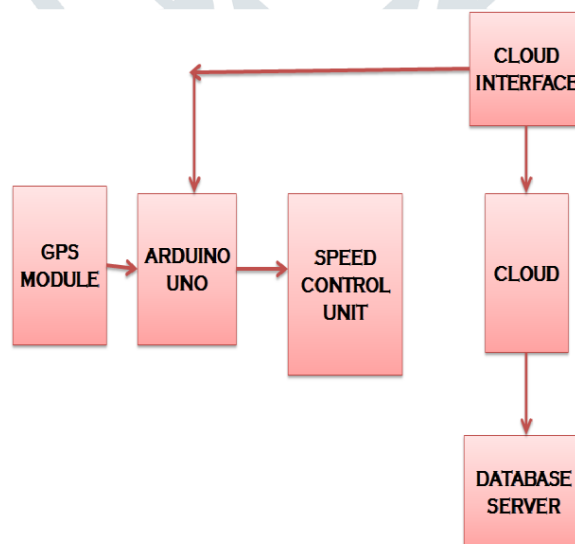


Fig.2 Block Diagram

The arduino uno is the heart of our research. It plays a vital role in our project. It controls all the components in it. All the components used in this project are interfaced with arduino, so that we can implement project.

Since this research aims to control the speed of vehicles mainly near the school zones, hospitals, dangerous curves etc. so that we need values of the GPS system (i.e. latitude and longitude) for that particular area. So this is implemented using GPS, by connecting it to the arduino. The output of the GPS is displayed using arduino and the particular zone values can be obtained.

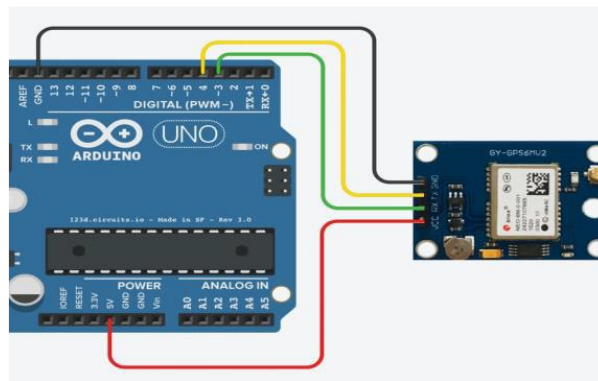


Fig.3 Arduinio with GPS

The speed is then determined using speed sensor. In this research we are using LM293 IR speed sensor. For determining the speed, we need vehicle, but instead are using 12 volt dc motor here. The dc motor won't be controlled if we connect it directly to the arduino, but it is stopped. For the controlling purpose, we are using L298D motor driver with it. The dc motor is interfaced with the driver so that the speed is controlled. The speed of the motor is controlled if and only if it reaches the particular area (i.e. particular school zone in which the GPS value shows). The dc motor's speed is reduced when it reaches the particular latitude and longitude.

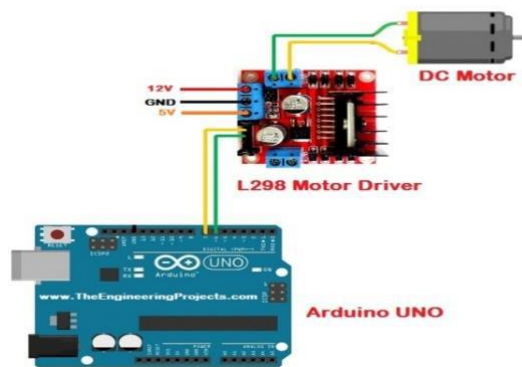


Fig.4 Arduinio with Motor Driver

IV. CLOUD COMPUTING

The values of GPS module and speed sensor are given to the cloud (Thinkspeak) and the graph from the cloud is obtained in the channels in which it is already created.

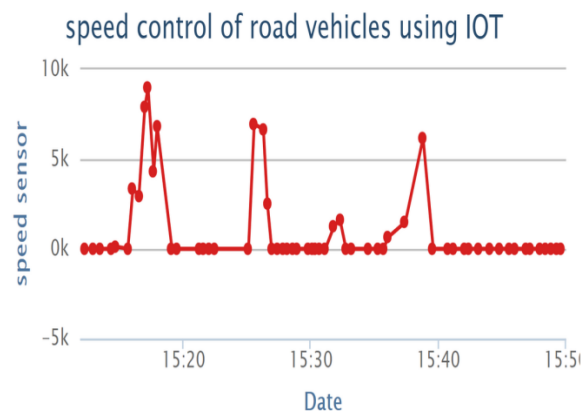


Fig.5 Cloud Computing Output

V. CONCLUSION

In recent years, the Internet of Things has developed very rapidly and has become a development trend to improve living conditions in the world as a whole. The Internet Of Things applied to the monitoring the speed of the vehicles will play an important roles in the management of accidents of urban and rural transports in the cities of the future.

VI. FUTURE SCOPE

In future, this project application can be developed on android platform of open handset alliance led by Google. Google provides simulated environment and standard development kit for developing android applications. Although this platform is very new and SDK provided is still in its nascent stage, a great number of mobile companies are queuing up to install it on the devices. We choose android as it is parallel to IOS in terms of facilities, it provide and it also an open source. The LBS application can help user to find hospitals, schools, gas filling stations or any other facilities of interest indicated by user within certain range. Just like a GPS device, its location can also be updated as soon as user changes the position.

REFERENCES

- [1] B. Saraladevi.B, Sedhumadhavan.S. Identifying a particular zone with prior information using wireless-(IEEE-2017)
- [2] S. M. Kywe, "Evaluation of Different Electronic Product Code Discovery Service Models," *Advances in Internet of Things*, vol. 02, no. 02,pp. 37–46, 2012.
- [3] C.-W. Tseng and C.-H. Huang, "A uniform epc scheme design of IEEE 1451 transducers for iot applications," in *Ubiquitous and Future Networks (ICUFN), 2014 Sixth International Conf on*, pp. 255–260,July 2014.
- [4] Juan zambada,ricardo quintero,Ramon isi jara,ricardo galeana, luis santillan,cse dept,AN IOT BASED SCHOLAR BUS MONITORING SYSTEM (IEEE-2015).
- [5] Tanvi Tushar Thakur, Ameya Naik, Sheetal Vaturi, Manjari Gogate, REAL TIME TRAFFIC MANAGEMENT USING IOT.(IEEE-2016)
- [6] Adel H. Alhamedi, Hamoud M. Aldosari, Vaclav Snasel, Ajith Abraham, "ANALYSIS AND CONTROL OF TRAFFIC CONDITION BASED ON IOT TECHNIQUE", *Sixth International Conference on Computational Aspect of Social Networks (CASoN) 2014*,PP: 61-65
- [7] P.F Alcantrailla, M.A Sotelo, L.M Bergasa , "AUTOMATIC DAYTIME ROAD TRAFFIC CONTROL AND MONITORING SYSTEM" *Proceedings of the 11th International IEEE Conference on Intelligent Transportation Systems Beijing, China*, October 12-15, 2008,PP:944-949
- [8] Supriya Kamoji, Aswathi Nambiar, Karishma Khot, Ravi Bajpai,"DYNAMIC VEHICLE TRAFFIC MANAGEMENT SYSTEM" *IJRET: International Journal of Research in Engineering and Technology* Volume: 04 Issue: 04 | Apr-2015, PP:352-356
- [9] Yoshiaki SENDA, Ivan TANEV, Katsunori SHIMOHARA, "ON THE POSSIBILITY OF PRIORITY-BASED ROAD TRAFFIC CONTROL", *SICE Annual Conference 2008 August 20-22, 2008*, the University Electro-Communications, Japan, PP:1510-1513
- [10] V. Tomas, M. Pla Castells, J. Samper, and F. Soriano, "Intelligent transport systems harmonisation assessment: use case of some Spanish intelligent transport systems services," *Intelligent Transport Systems, IET*, vol. 7, pp. 361–370,September,2013.