

FAT-TECH CITY USING IoT

Mr. Akshay Kumar C A¹, Mr. Dedin Raj Sebastian², Mr. Jithin Govind³, Mr. Akmar Roshan⁴,

Mr. Ritesh Kumar⁵

^{1,2,3,4} Students, Dept. of CSE, Yenepoya Institute of Technology, Moodbidri, India-574225

⁵ Assistant Professor, Dept. of CSE, Yenepoya Institute of Technology, Moodbidri, India-574225

Abstract - The Smart Cities project is creating an innovation network between governments and academic partners that is leading to excellence in the development and take-up of e-services and e-government, and which is setting new standards for e-service delivery across the whole North Sea region. The Smart Cities partnership is made up of thirteen partners from six countries in the North Sea region. All of the government partners are leading cities and regions with considerable experience in developing and delivering e-Government. Project partners want to improve their e-service-delivery by rethinking the basics of service delivery, by changing their innovation methodology, by transferring their best practices to other project partners, and by engaging with academic and research partners from the very beginning of this process. From a technological perspective, the smart city ecosystem is a complex one comprising many technology areas. Major players operate in several areas, providing solutions that complement (and sometimes overlap) other players. Those companies that are able, are working towards a convergence point where they can provide end-to-end solutions for city technology needs. However, most players lack the scale to achieve this and must work in collaboration with partners from other technology segments. To visualize the technology ecosystem, we can identify few technology groupings.

Key Words: Internet of Things, Arduino Nano, Wi-Fi Module, Impact Sensor, Water Level Sensor, IR Sensor, Rain Sensor.

1. INTRODUCTION

Floods are among the most common disasters and natural hazard in the world, affecting human lives and causing severe economic damage. It is understood that flood risks will not decrease in the future and with the beginning of climate change, flood intensity and frequency will threaten many regions of the world. To minimize the extent of damages caused by flood, warning systems to inform the people of the disaster should be implemented in high risk areas. This system will be able to reduce the damages of flood.

The development of a transportation system has been the generative power for human beings to have the highest civilization above creatures in the earth. Automobile has a great importance in our daily life. We

utilize it to go to our work place, keep in touch with our friends and family, and deliver our goods. But it can also bring disaster to us and even can kill us through accidents. Speed is one of the most important and basic risk factors in driving. It not only affects the severity of a crash, but also increases risk of being involved in a crash. Despite many efforts taken by different governmental and non-governmental organizations all around the world by various programs to aware against careless driving, yet accidents are taking place every now and then. However, many lives could have been saved if the emergency service could get the crash information in time. As such, efficient automatic accident detection with an automatic notification to the emergency service with the accident location is a prime need to save the precious human life.

In today's high-speed life, traffic congestion becomes a serious issue in our day to day activities. It brings down the productivity of individual and thereby the society as lots of work hour is wasted in the signals. High volume of vehicles, the inadequate infrastructure and the irrational distribution of the signaling system are main reasons for this chaotic congestion. It indirectly also adds to the increase in pollution level as engines remain on in most cases, a huge volume of natural resources in forms of petrol and diesel is consumed without any fruitful outcome. Therefore, in order to get rid of these problems or at least reduce them to significant level, newer schemes need to be implemented by bringing in sensor-based automation technique in this field of traffic signaling system.

The Smart Cities project is creating an innovation network between governments and monitoring patient's symptoms, the data has to be refreshed with high frequency so that doctor's platform update continuously to pull the latest data from the patient's warbles. Arduino board collect the data from sensors and then it transfers through wired network to IoT website. academic partners that is leading to excellence in the development and take up of e-services and e-government, and which is setting new standards for e-service delivery across the whole North Sea region. All of the government partners are leading cities and regions with considerable experience in developing and delivering e-Government. Project partners want to improve their service delivery by rethinking the basics of service delivery by changing their innovation methodology, by transferring their best practices to other

project partners and by engaging with academic and research partners from the very beginning of this process.

2. METHODOLOGY

A block diagram is a diagram of a system in which the principal parts or functions are represented by blocks connected by lines that show the relationships of the blocks. They are heavily used in engineering in hardware design, electronic design, software design, and process flow diagrams. Block diagrams are typically used for higher level, less detailed descriptions that are intended to clarify overall concepts without concern for the details of implementation. Contrast this with the schematic diagrams and layout diagrams used in electrical engineering, which show the implementation details of electrical components and physical construction.

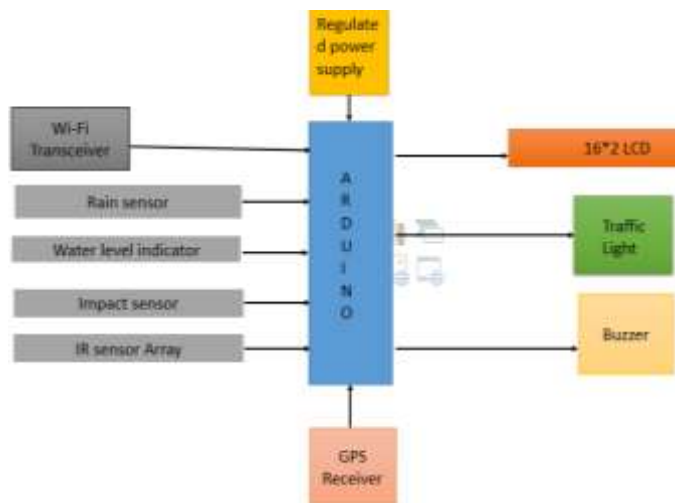


Fig -1: Block Diagram

2.1 Impact Sensor

Impact sensor is a sensor that mainly used to detect any crash or jerk. In our accident detection systems, we are using the impact sensor. We are placing this sensor below the steering part then only if car detect the big crash & ignore the minor crash. It is very cheap affordable to common people.

2.2 IR Sensor

IR Sensor is a sensor that detect the infra-red radiation. In our traffic congestion control system for sensing the density of vehicle We are using the IR sensor. Its working is very simple. An array of IR sensor is field on one of sides of the junction. It will count the no of vehicles in the road. Means a greater number of IR sensor is implemented, then that sides of the road. The no of vehicles is more thus the appropriate signal is given to that road to avoid the traffic congestion

2.3 Water level sensor & Rainy sensor

Rainy sensor is mainly used to detect the presence of water. It is made by folding the copper wire. It will detect

the water fall on it & the next is water level sensor. It will check the water level in various field. On flood detection system will work only if both of these sensors work simultaneously. These two sensors are placed in the city. It continues rain occurs & water rise up to a particular limit. Then it will help to evacuate the people before the flood occurs

3. RESULTS

Technologies play an important role in today's world. Our duty is how to utilize these technologies for the betterment of the public.

FAT-TECH city using IoT mainly focuses on that flood, accident & traffic. These are the topics which we are discussing & try to find a solution for the problems caused by them from our system. Proud to say that problems can be solved up to certain range in a very cheaper rate. Usage of sensor make the system simple. People can reduce these losses by the damage caused by the flood & saves the valuable life of relief from the unwanted traffic conjunction are some of the benefits of our system.

4. CONCLUSION AND FUTURE WORK

FAT-TECH using IoT (Internet of Things) which is a system which can detect the flood, accident & reduce the traffic conjunction in the roads. The working of this can be purely under the control of the sensor. Once the sensor detects the variation the messages can be send to the authorities' implementation of this system can applied the large scale with a cheaper rate. This system mainly focuses on the public security.

Future work can induce many areas having with the flood detection we can use an additional sensor which can detect by incorporating a sensor on a vehicle, & when accident occurs message can be passed to the sufficient authority now the traffic congestion control system can only apply in the junction. Future it can be implemented in pocket roads & all.

REFERENCES

- [1] N. G. Yethiraj, "Applying Data Mining Techniques in the field of agriculture and allied sciences", International Journal of Business Intelligence Vol. 1, No. 2, December 2012
- [2] S. Beniwal and J. Arora, "Classification and feature selection techniques in data mining," International Journal of Engineering Research and Technology, vol. 1, no. 6, pp. 1-6, August 2012.
- [3] M. L. Raymer, W. F. Punch, E. D. Goodman, L. A. Kuhn, and A. K. Jain, "Dimensionality reduction using genetic algorithms," IEEE Transactions on Evolutionary Computation, vol. 4, no. 2, pp. 164-171, July 2000.

- [4] G. Qu, S. Hariri, and M. Yousif, "A new dependency and correlation analysis for features," IEEE Transactions on Knowledge and Data Engineering, vol. 17, no. 9, pp. 1199-1207, September 2005.
- [5] A. Janecek, W. N. Gansterer, M. Demel, and G. Ecker. "On the relationship between feature selection and classification accuracy," Journal of Machine Learning Research-Proceedings Track 4, (Antwerp, Belgium, September, 2008, pp. 90-105