POTHOLE DETECTION AND MESSAGE PASSING SYSTEM

Yamini karpe, Janhavi Tarase, Pratiksha Konde, Savita Kandhare
Department of Comp. Engg, Bharti Vidyapeeth College of Engg. For Women Pune, India

Abstract: Monitoring road and traffic conditions in a city is an issue broadly examined. A few strategies have been proposed towards tending to this issue. A few proposed strategies require devoted equipment, for example, GPS gadgets and accelerometers in vehicles or cameras on roadside and close traffic signals. Every such technique are costly regarding money related expense and human exertion required. We propose a non-nosy technique that utilizes sensors present on cell phones. In propose framework we use accelerometer, GPS sensor readings for traffic and street conditions location. We are explicitly keen on distinguishing braking occasions - visit braking demonstrates blocked traffic conditions - and knocks on the ways to portray the kind of road. A pothole is a one of the greatest threat to vehicle drives. It causes an accident by sudden steering of the vehicle wheel, forcing an enormous stress on a vehicle tire or making a hard turning in a vehicle by late detection. It is crucial to find where a pothole is on the pavement. As the number of pavement increases, detecting a pothole becomes a great challenge in a modern society. Methods suggest detecting potholes using sensors. In this project, we investigate the performance in detecting potholes with a vibration based using ultrasonic sensor.

Keywords*: Potholes, Raspberry-pi, camera, ultrasonic sensors, gps gadgets*

I. INTRODUCTION

1.1 Aim

To develop a "Pothole Detection System for Monitoring Road And Traffic Conditions Using IoT" System using Quick Response user and notification Gateway that accurately updates databases according to the latitude and longitude and improve the accidental detection.

1.2 Scope

- To prevent accident
- To identify cause of accident

1.3 Motivation

The presented approach provides a user friendly standalone mobile web application which alerts drivers about the upcoming potholes in his route and also an affordable low cost device which can be installed on any vehicle for the collection of the data about the potholes. This data can be used by other application users as well as further compiled and sent to authorities to take a fast track action against the pothole prone region

1.4 Objective

- To Improve The Accidental Detection.
- To Detect Pothole and Speed breakers.
- To be able to successfully add pothole and speed breaker data

II. LITERATURE SURVEY

S. Gnanapriya, V.B. Padmashree, V.Bagyalakshmi and G.A. Pravallikha, IOT Based Pothole Detection and Notification System, American-Eurasian Journal of Scientific Research 12 (3): 172-179, 2017: In this Paper propose an innovative method to prevent these hazards by using the advanced sensor system. The sensors will be attached to vehicles and from vehicles the data's obtained from sensors and the location obtained by the GPS are transferred to road transport authority by IOT where officials take necessary actions. Using the data's obtained more damaged area can be prioritized and damage control can be reduced.

Prof.A.K.Mariappan, Haridha.S, Haritha.S, Harini.M, Automated Pothole Detection and Pre-Indication System using IOT, International Journal of Scientific Research and Review, Volume 7, Issue 3, 2018: This Paper propose a system of pothole detection using Ultrasonic sensor. Then an indication is provided using a voice signal emitted by a speaker. The Voice IC attached to the controller exerts the stored voice signal. An indication is also provided using LCD display. In this system we also have an add-on that is we inform the government officials regarding the detected road conditions by tracking the location of the pothole using an IoT board which has in-built GPRS.

Pathan Amir Khan Ayyub Khan, Iot Based Pothole Detection & Alert System, International journal for innovative research In Multidisciplinary field, Volume - 4, Issue - 4, Apr – 2018: This paper introduces an application of movable sensing: detection of potholes on roads and alerting the driver. I have describe a system and an associated algorithm to monitor the pothole conditions on the road & simultaneously it alerts the driver about those potholes. The IoT based Pothole Detection System, uses 2 ultrasonic Sensors for detecting those potholes more accurately then before and GPS is used for plotting the location of potholes on World Maps, it will give an alert to the driver about potholes using buzzer and staring (or

handle) vibrator.

Dimple S, Monica V, Anirudh Ashok, Adarsh C, Monitoring Of Road Irregularities Using Iot, International Journal Of Advances In Electronics And Computer Science, Sep.- 2016: The road irregularities and roughness due to bad maintenance are significant cause for road accidents in India. Road users often feel uncomfortable when they drive on rough roads, especially due to potholes. This paper presents a pothole detection system using the concepts of IoT.

III. EXISTING SYSTEMAPPROACH

3.1 Description details:

We actualize Pothole identification system which ensures the driver about the uneven roads and potholes in its way. We consider the diverse manners by which objective of the framework can be accomplished. We legitimize the techniques we have picked in these undertakings and afterward we give insights concerning the working of the diverse subsystems.

3.2 Proposed system Advantages:

- Required less time
- Cost effective
- Required less manpower
- Less accident.

3.3 Proposed system Architecture

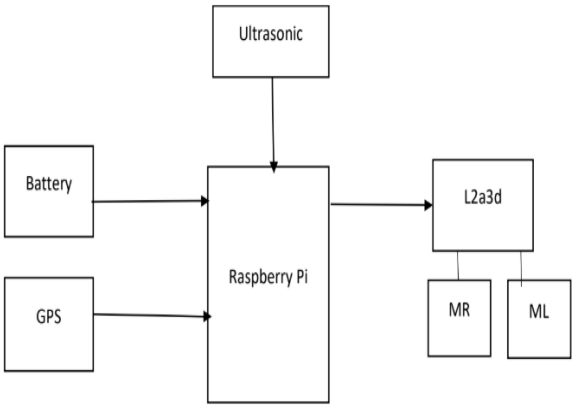
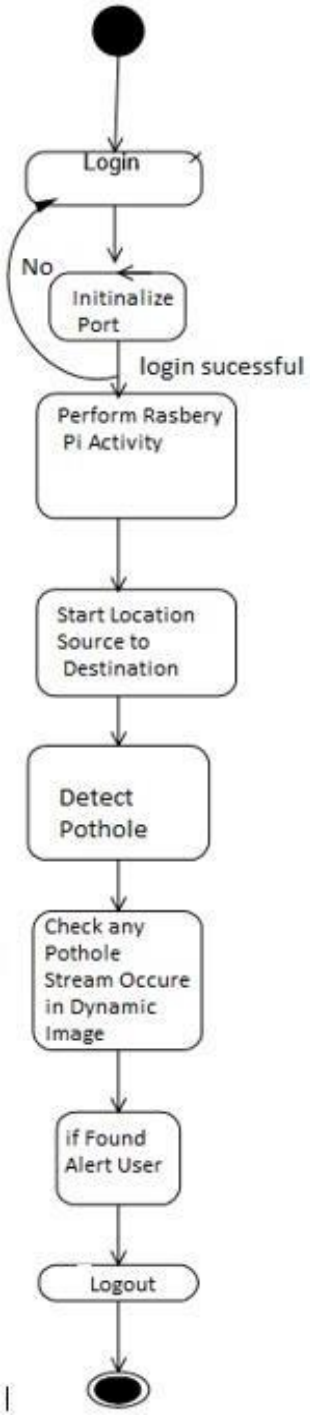


Fig 1: System Architecture Algorithm:

1. Start
2. Import required library
3. Initialize gpio
4. Initialize ultrasonic, l293D,GPS
5. Send trigger through ultrasonic sensors.
6. Wait for echo
7. Calculate time between transmitted trigger and received echo
8. Calculate distance
9. If distance is less than threshold value then increase count of speed breaker store it in mysql db with respect to GPS location
10. ance is greater than threshold value then increase count of potholes stored in mysql db with respect to GPS location
11. Move robot wrt to forward reverse left right stop event from http request
12. Stop

State Diagram:



IV. CONCLUSION

We studied an algorithm for prediction of road quality. It utilizes ultrasonic sensor accumulation of information and GPS for plotting the street area follow in Google delineate. The demo also includes a multiplatform easy to operate user friendly application which uses this crowd sourced data to warn user about the nearby potholes. Our best outcomes are acquired on account of a gathering of two sensors; accelerometer and spinner sensors. The cell phone based technique is extremely valuable since it evacuates the need to conveying uncommon sensors in vehicle. It has the upside of high adaptability as cell phone clients expands step by step. In this way, we have built up a cell phone application road sense. The Road Sense application is an endeavor to furnish its clients with better information about the courses of their transportation. With further work in this field, it is feasible for this venture to have a proactive impact in enhancing street conditions in creating nations. To this end, our framework can be utilized to make an individual street type cautioning framework that keeps up an authentic record of road conditions

V. REFERENCES

[1]. S. Gnanapriya, V.B. Padmashree, V. Bagyalakshmi and G.A. Pravallikha, "IOT Based Pothole Detection and Notification System", American-Eurasian Journal of Scientific Research 12 (3): 172- 179,2017

[2]. Prof.A.K.Mariappan, Haridha.S, Haritha.S, Harini.M, "Automated Pothole Detection and PreIndication System using IOT", International Journal of Scientific Research and Review, Volume 7, Issue 3, 2018

[3]. Pathan Amir Khan Ayyub Khan, "Iot Based Pothole Detection & Alert System", International journal for innovative research In Multidisciplinary field, Volume - 4, Issue -4, Apr – 2018

[4]. Dimple S, Monica V, Anirudh Ashok, Adarsh C, "Monitoring Of Road Irregularities Using Iot", International Journal Of Advances In Electronics And Computer Science, Sep.- 2016

[5]. Shubham Ingole, Pragati Alone, Krushna Kapase, Manjushri Mahajan, "Pothole Detection System for Monitoring Road Using IoT", International Journal of Advance Engineering and Research Development Volume 5, Issue 12,December-2018