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Fuel Monitoring and Security Control System

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Abstract— With rising prices of oil, fuel theft has become a very common incidence. From economic point of view a system is devised that will take care of these practices. We live in a world where everything is getting automatic with the help of intelligent technology, On the other hand, this technology has been an important financial tool for the user, saving their time and operation costs. which helps humans in day-to-day life, which enables humans to make their work easy, safe, and more comfortable.

"FUEL MONITORING become focuses on developing and enhancing fuel alarm security through mobile phones. Bar code is placed at a certain distance from a fuel pipe to prevent fuel theft. The security worker monitors the total area just by scanning it If security discovers any problems while monitoring the fuel pipeline, he documents the incident and reports it to management by using our mobile application. so that the problem can be identified and corrected easily. Security can also send an alert to nearby security guards or police stations informing them of the theft or incident by sending an alert with particular locations, timings, and camera images or videos with their signature not mandatory. This consists of a transformer. It is a deficient cost technology and can be implemented quickly.

Keywords: Alarm, Gprs / Gsm, Gps, Image Captures.

I. INTRODUCTION

In this rising technological world, essential services such as this tracking will also greatly influence businesses, several organisations, and individual users for adoption. However, the benefits of low-cost, negligible management (from a user's perspective) and greater flexibility come with increased security concerns. Hence a virtual way of experiencing online tracking, GPS tracking, location fetched, trigger alarm, or online tracking evokes the physical analogy of satisfying management at bricks in a developing environment.

The establishment of Business-to Security online tracking is fulfilled at this stage. The QR code scanning paradigm has reformed the usage and management of the information technology infrastructure characterised by on-demand self-service, ubiquitous network accesses, resource pooling, elasticity, and measured services. The characteristics above of fuel security tracking make it a striking candidate for businesses, organisations, and individual users for adoption.

II. LITERATURE SURVEY

Jignesh B Jadav, Dr K.H.Wandra, Mr Rohit Dabhi, the proposed system has the control and communication between the user and device are achieved through a short message services (SMS) protocol available in the mobile phone.

Safa Abd elmonem. Yosif, et., al. developed tracking and monitoring the fuel and speed system to provide a facility for the management requirements by the administrator. The developed-on Arduino, GSM/GPS and map suit ASP.MVC provides the actuated arrival time and graphically shows the location on Google map.

Nitesh. K.An [3] et., al came out with the design and implementation of a digital fuel gauge, which measures the accurate level of fuel, by fixing the pressure sensor at junctions, at any point of time it will continuously measure the level of power with the help of processor and displays the value in the digital numeric form in the display unit. Hence, the measured values and location of fuel added are sent to the server through GPS and GSM, and the management is aware.

In 2014 Nitin Jade et al. [5] developed a "modified type intelligent digital fuel indicator system" and achieved an accuracy level of 95% -98% in measuring the fuel digitally.

In January 2014, Vinay Divakar [6] developed "Fuel gauge sensing technologies " and achieved an intelligent fuel gauge system.

Areeg Abubakr Ibrahim Ahmed, et.,al. Presents implementing a monitoring system based on internet of things technology to protect the tower sites from theft and provide security to remote locations.

III. PROBLEM STATEMENT

The bar code has been present at a certain distance of a fuel pipe to prevent fuel theft. This system helps to solve issues that affect the running of a business, such as time, spoilage of goods (perishable goods), overstocking and under-stocking, the flow of goods, and tracking prices and inventory. Several improvements to our app design help security visit all places without any delay.

This system handles the organisation of records for retrieval, referential and manipulation purposes that modern businesses and companies face daily. This accident alert system detects the accident and the location of the accident occurred and sends GPS coordinates to the specified mobile, computer etc. The current system can be extended to allow

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the admin to create accounts and save the user list.

Compared to the present system, the proposed system will be less time consuming and will be more efficient. The analysis will be elementary in the proposed plan as it is automated. This system is secure as no chances of loss of data as it is dependent on the administrator only. Android app provides product-based information and contact information of the owner. Provide an Interactive interface through which a user can easily interact with different areas of the application.

An app provides an easy and convenient alert for particular places at the correct time.

Reduces theft, improves management growth, and allows admin to know the current situation of security. Have control over the security easily by admin.

IV. OBJECTIVE

Fuel monitoring work efficiently even on slow internet.

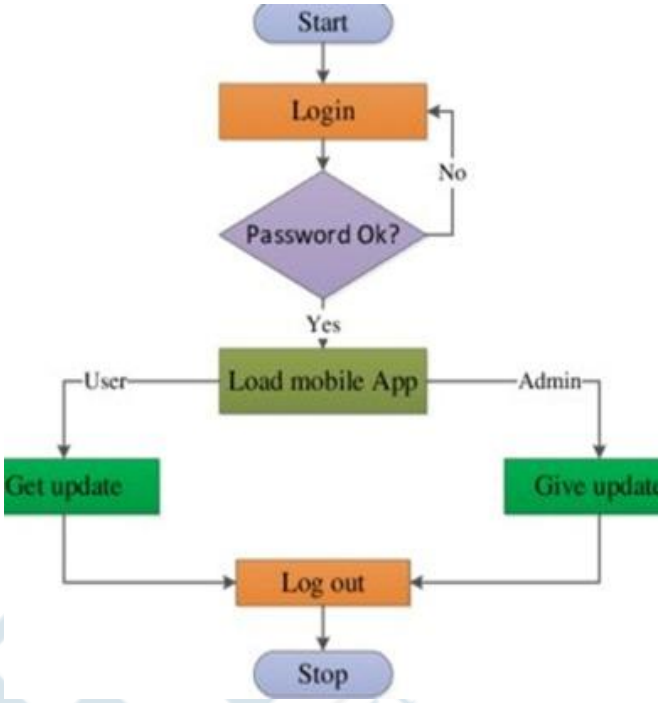
- Fuel monitoring GPS to know your user's location.
- Quickly locates nearby next location for the user to work and makes it easy for you without wasting your time.
- Fuel monitoring Works worldwide.
- You can also send alert messages for the particular petrol station.
- It helps to get the estimated time and distance from one location to the next location.

V. SCOPES

System analysis work with the users to identify goals and build systems to achieve them.

System development revolves around a life cycle that begins with recognising user needs. Following a feasibility study, the critical stages of the process are the evaluation of the present system, information gathering cost/benefit analysis, detailed design and implementation of the candidate system. The life cycle is not a procedure that deals with hardware and software. It builds a computer-based system to help users operate a business or make decisions effectively and manage an enterprise successfully. This is the base for learning system analysis.

System development includes the makeup of the system development life cycle, what promotes the user to request a change, the factors to consider in a candidate system, how to plan and control for success access.



MODULE DESCRIPTION

1. Login Module
2. Home page module
3. Emergency and emergency history module

1. Login Module:

This module starts when the user views the Login screen. Users can have the credential created from the backend or admin through the mail. If users want to log out before the scheduling time, our app will show a popup containing an alert dialogue (need to enter proper reason) to log out by security.

Admin can add or remove tasks at any time from the backend without prior notice. While the user logged in to our app, we fetched the latitude and longitude of the user's current position using GPS.

2. Home module:

All the tasks were added to the admin's home page task assigned list. The complete list of all the functions added to the cart is displayed. A user or security can scan the assigned task and complete it at a particular time. Admin can add or remove functions at any time from the backend.

A user can check the QR code from the list by clicking a button from the home page. The complete list changes accordingly when a user browses the QR code or visits a particular place at a time.

3. Emergency and emergency history module:

This module contains Emergency alert button, Capture Images or video by the security requirement, can view Emergency history with any point and its time, and other

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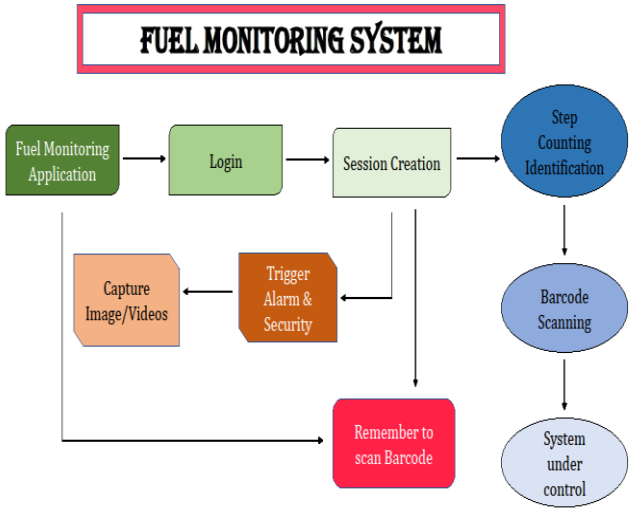
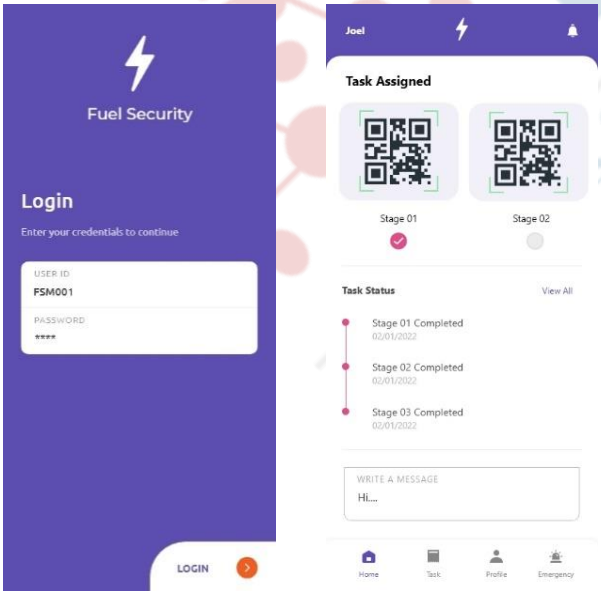
elements (captured data, number of captured alert that security sent etc.), depending on requirements of an admin. Contact Module For emergency purposes off even to use for instant purposes or sharing the service contacts among people.

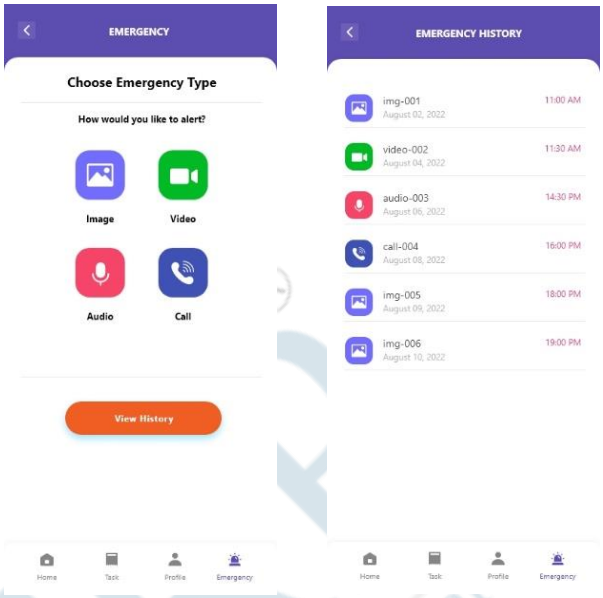


VI. SYSTEM OVERVIEW

Monitoring security: The programming done in kotlin for reduce boilerplate code compare to java and xml make design wise easily understandable for security to handle it. This will help the management to check the exact location of the security through mobile application.

Sample screenshots below.





VII. CONCLUSION

In a nation like India, there is a progressively increasing number of individuals with the utilisation of bike vehicles but without fuel. It is difficult to drive the vehicle. In this developing world, petroleum pumps are followed through Google Maps because of which syphons are followed, yet the fuel accessibility status isn't shown, which prompts exercise in futility and individuals face inconvenience.

The fuel management system will allow you to maintain, monitor, and control access to fuel. Without fuel, it is not possible to operate equipment in transportation, construction, and other fleet companies. When the process of recording must be carried out manually, it is not an easy thing to do and usually results in errors. The right fuel management system will eliminate all the hassles related to fuel management in any industry. Continue reading to know some of the benefits that are offered by the software.

The fuel monitoring and security control system are designed accordingly to manage all the tasks related to the fuel automatically. When a transaction is done, it captures all the data and stores it for later purposes and analysis. This data can include the users, vehicle, product type, and any other business information that may be needed.

Here the application has been created which will help to monitor and update user status in the fuel station. The pipelines have been improved with equipment that will show the precise fuel present in the fuel tank and up to where the security will go in the measure of fuel present in the fuel tank.

In this paper, we created an Android application with three main functions: petroleum pumps, administrator, and client. The undertaking is done, which will have the android application that is created with the administrator of specific petrol pumps. He will oversee everything with a single click of an android application..

The undertaking additionally closes the 75% of business related to equipment that is the interfacing of GSM and GPS with the Ardiuno-Uno kit.

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