iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** VII **Month of publication:** July 2022

DOI: https://doi.org/10.22214/ijraset.2022.45426

www.ijraset.com

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VII July 2022- Available at www.ijraset.com

Monitoring the Modest Sensory Network Utility Device Watcher

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Abstract: ***The proposed system introduces the android application using modest sensor device. The objective of the system is to develop a system to collect data from sensors, and to transmit this data through wireless network which passes the data to an application.***
Wireless transmission methods have been investigated, and it was decided that a HTTP GET method would be used. When the information is sent by different sensors it will displayed with the help of machine learning algorithms.
Following an exploration of personal area networks (PAN) and mesh networking, a system was implemented to discover physical intrusion.
To the end our network employed sensors are connected with motion sensors and accelerometers. Then it communicates with a generic infrastructure, adaptable to future wireless sensor projects, which stores the data in a database and through interfaces monitor the status of the entire system.
Keywords: sensors, wireless transmission, machine learning, accelerometers, user interface.

I. INTRODUCTION

The proposed system is about the modest sensory network utility device using “Watcher”. sensory network monitors physical or environmental conditions, such as temperature, rpm, vibration, pressure, motion or pollutants at different locations. This sensing electronics collects the information from the surroundings and transforms into an electric signal. .
While analysing the project we thought about the importance with respect to monitoring the data. Since everything is getting digitized, it is designing the application to monitor the heavy-duty machine and their performance. In earlier system’s data is stored in a spreadsheet or sometimes manually by handwritten to overcome this we are going to implement software modules that can store data collected from sensors and monitor performance.
This component which is of IOT based will collect the data in the form of signals and using different parameters like temperature, pressure, vibration etc. So this will make better communication between workers and management, Also increases the transparency in the whole management process.
We are designing and building an android application to maintain and record the data. The objective of project is to diminish the paperwork and transfer it to digital work.
This will make work less complicated and increases work efficiency. The proposed system will help to reduce fraud and increase transparency between workers and management.
The proposed system also produces output with the help of given data by using machine learning Algorithm. Due to the machine learning algorithm it will compare incoming data with trained dataset.

II. MODULES

A. Management / Admin module

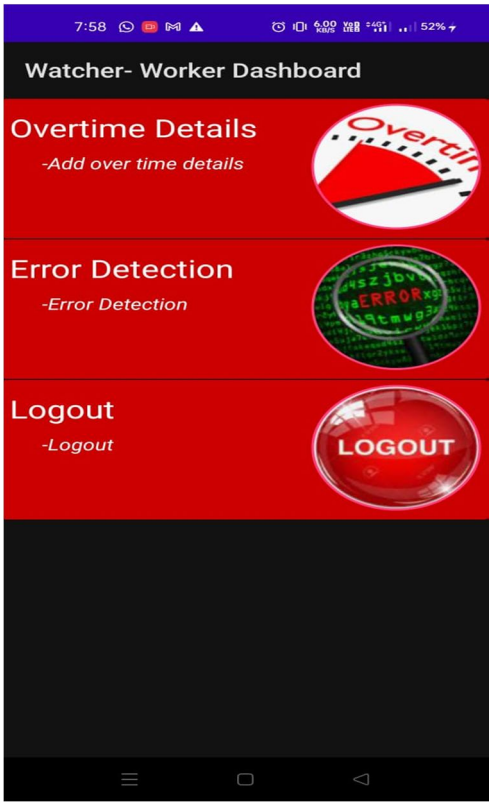
This module have administrator authority, like managing, planning, data security and maintaining the data. Admin can log in and add machines as well as workers details in application.
Admin will be able to run-through active and inactive machines. The location of all the machines and workers can be displayed through our module. Admin will able get daily updates about the machine performance as well as workers performance.

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B. Workers Module

This module starts when worker login with his credential given by the admin. In this module, a worker has to update the daily performance of the machine and his active working time details. The daily update contains machines working session time, fuel consumption, and location update. Also, worker can add details of overtime work, temperature, and power consumed by machine.

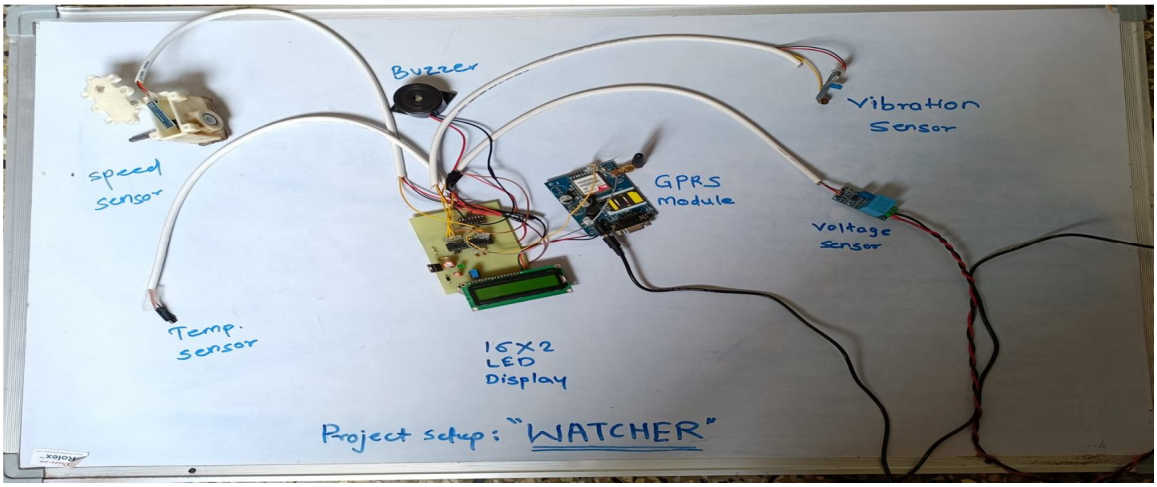


C. Watcher

This **module** is IoT based component, which contains sensors, microcontroller, battery, wires and GSM. It will be connected with machine and send data to the worker module. This will calculate the temperature, power consumption and RPM of the machine that can pass the data to the workers module.

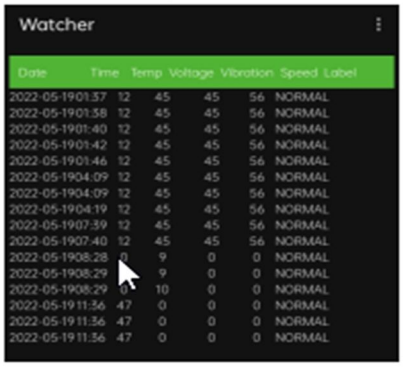
The different components of watcher are as follows:-

1) Voltage Sensor - sensor used to calculate and monitor the amount of voltage in an object.
2) Vibration Sensor- Sensor used to calculate Vibration in an object.
3) Temperature Sensor - Sensor used to calculate Temperature of an object.
4) Speed Sensor - Sensor used to calculate speed of an object.
5) GSM GPRS Module- It connects to the GSM Network using a SIM (Subscriber Identity Module) and Radio Waves







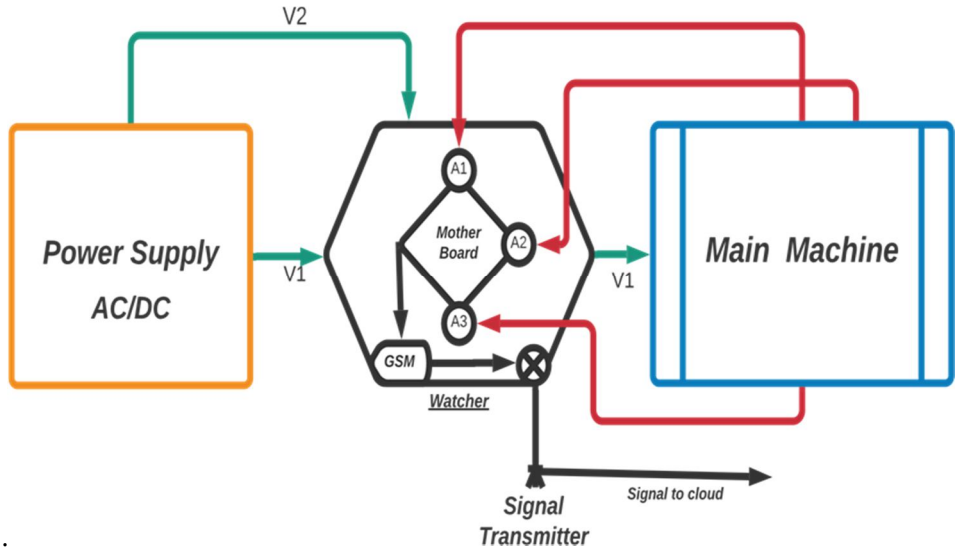


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ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
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III.IMPLEMENTATION

A. Block Diagram Of Watcher



Let A1,A2,A3 be the sensors as per operation requirement

V1- Main Power Supply
V2- secondary Power supply to Component(watcher)

- Antenna

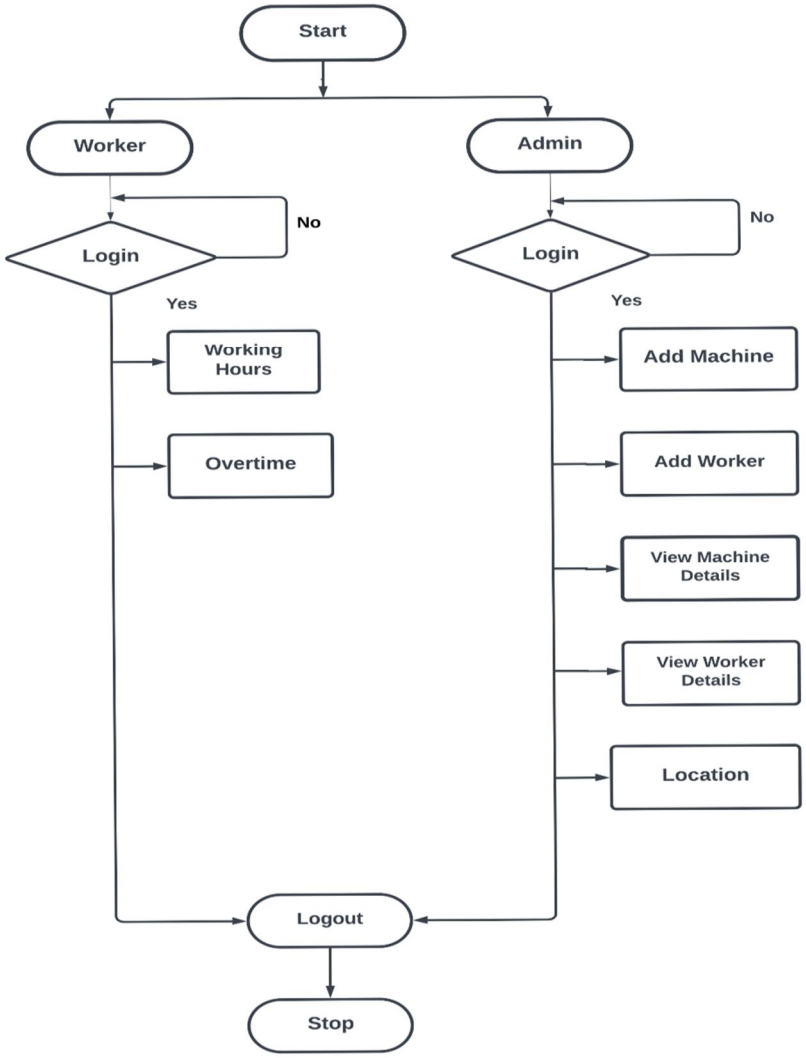
Text fountain of Entire Document This design is designed to test the colourful parameters through several Senor to descry alcohol drunk people.

1) *Voltage Detector:* The ZMPT101B is a voltage motor used to calculate AC voltage. You can measure AC voltages up to 250 volts by using this module. The affair of this detector is analog. However, the o/ p voltage will change as well, if you change i p voltage.
2) *Vibration Detector:* A vibration detector is a device that measures the quantum and frequency of vibration in a given system, piece of outfit. Those measures can be used to descry imbalances or other issues in the asset and assume unborn breakdowns.
3) *Power Supply:* Power Supply is use to give power to all circuit for a proper operation of all tasks. The power force unit give 5V and 9V affair to given bedded system.
4) *Temperature Detector:* A temperature detector is a device used to measure temperature. This can be air, liquid or the temperature of solid. There are colourful types of temperature detectors available and them each use different technologies and principles to take the temperature dimension.
5) *Speed Detector Module:* This is a speed detector, the major thing is to check the rate of motor. It was extensively used in motor speed discovery, palpitation count, the position limit etc. Features Groove type optic coupling detector.
6) *GSM 900A Module:* The SIM900A is a readily available GSM/ GPRS module, used in numerous mobile phones and PDA. The module can also be used for developing IOT(Internet of effects) and installed operations. SIM900A is a binary- band GSM/ GPRS machine that depends on frequentness EGSM 900 MHz and DCS 1800 MHz.
7) *TV Display:* TV display in this system will act as an index to the motorist about the position of drunkenness. The TV will display position of drunkenness how important the alcohol people drunk is display on TV as well as at the time of driving person is sleep also IR detector give the signal to TV eye is unrestricted person is sleeping & Buzzer is on.
8) *Buzzer:* Buzzers are used in a system to indicate or to snare the attention regarding an exigency situation passed. Buzzer act as a cornucopia which shows the need of instant attention as the condition goes haywire. Buzzer is on when person's eye is closed.

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B. Block Diagram Of Application



The proposed system is designed to test the various parameters, there are main two modules:

1) *Worker Module:* This module starts when the worker login with his credential given by the management module. In this module, a worker has to update the daily performance of the machine and his active working time details.

- *Working Hours:* This is sub-module to check the daily machine working time.
- *Overtime:* In overtime module if the worker works more than his working hours then it will fill the overtime details.

2) *Admin Module:* This module has an administrator authority, like managing, planning, data security, and maintaining the data. Admin can log in and add machines, workers details in application .Admin will get daily updates about machine performance and workers' performance.

- *Add Worker:* This is Sub-module where Admin can add information about the worker.
- *Add Machine:* This is Sub-module where Admin can add information about Machines like temp, voltage, vibration, speed.
- *View Worker Details:* This module Show all the information about the Worker.
- *View Machine Details:* This module Shows all machine Details, like temp, voltage, vibration, speed etc.
- *Search Machine Location:* This module will help to find the location of the machine.

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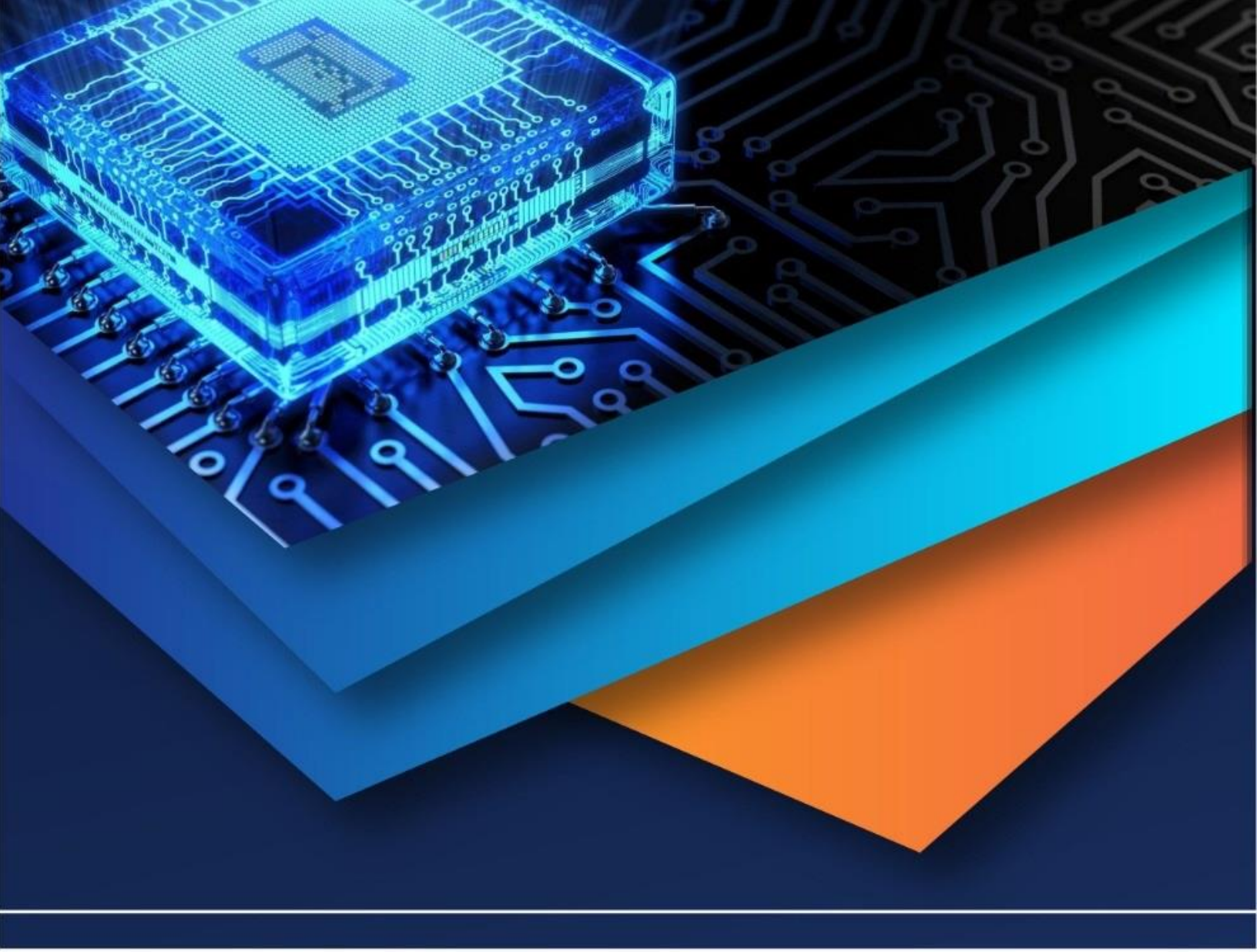
IV. CONCLUSIONS

In today's era of digitization advanced analytics is the current need of enterprises, which is essentially achieved through the concept of "Modest sensory network utility device 'watcher' using android based database system" is created with the intention to reduce the fraud and build a user-friendly module to manage data. As a proposed work are providing three-module i.e, the Management module, the Worker Module, and "Watcher" the IoT device. Each has Different functionality. The IoT component will send the signals to the management module. A worker will update the status and then the user will get analysed data using the KNN algorithm. This will help to detect frauds. And make monitoring the machine performance effortless.
Thus all the requirements are satisfied and the application is made more user-friendly and less complicated.

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