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Research, Collaboration and Enterprise

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VISION AND MISSION OF THE DEPARTMENT

VISION:

To be recognized as a Centre of Excellence in the field of Education and Research so as to produce Competent & Ethical Engineers capable enough to contribute to the society.

MISSION:

- To develop innovative, efficient and proficient electrical engineers.
- To keep the curriculum industry friendly, with due regard to the University curriculum.
- To be a place for innovative blended learning and entrepreneurship development in multidisciplinary areas.
- To promote ethical and moral values among the students so as to make them emerge as responsible professionals.

PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

PEO1: To produce Electrical and Electronics Engineering graduates who have strong foundation in Mathematics, Sciences and Basic Engineering

PEO2: To provide intensive training in problem solving, laboratory skills and design skills to use modern engineering tools through higher education and research.

PEO3: Ability to pursue higher studies and to seek employment in a variety of engineering technology positions and work successfully in their chosen career aspirations and generate entrepreneurs.

PEO4: To inculcate in students professional and ethical attitude, effective communication skills, teamwork skills, multidisciplinary approach, and an ability to relate engineering issues to broader social context through life-long learning.

# INDEX

1. SMART STICK FOR BLIND

CH. RAVI TEJA , G.ROHIT ,G.SAI KRISHNA ,D.R. PRATAP CHARAN
SUPERVISOR:Mr.P.NAVEEN, M.Tech (Ph.D.)

ABSTRACT:

Visually impaired people find difficulties in detecting Obstacles in front of them, during walking on the street, which makes it dangerous. This is where the smart stick comes forward as a proposed solution to enable them to sense the world around. In this project we propose a solution, represented in a smart stick with infrared Sensor to detect stair-cases and pair of ultrasonic sensors to detect any other obstacles in front of the user, within a range off our meters. The stick senses the heartbeat rate, if the rate increases decreases, writ to normal heartbeat, Then it will send a signal to family as well as hospital within the range. This proposed system uses the microcontroller 18F46K80embedded system; vibration motor and ISD1932 flash memory. The stick is capable of detecting all obstacles in the range 4 meter during 39 ms and gives a suitable respect messageempowering blind to move twice his normal speed because she/he feels safe. The smart stick is of low cost, fast response, low power consumption, light weight and ability to fold.

Keywords— Infrared Sensor, Ultrasonic Sensor, Electronic Travel Aids (ETAs), visually impaired, Blind Navigation, Arduino Uno.

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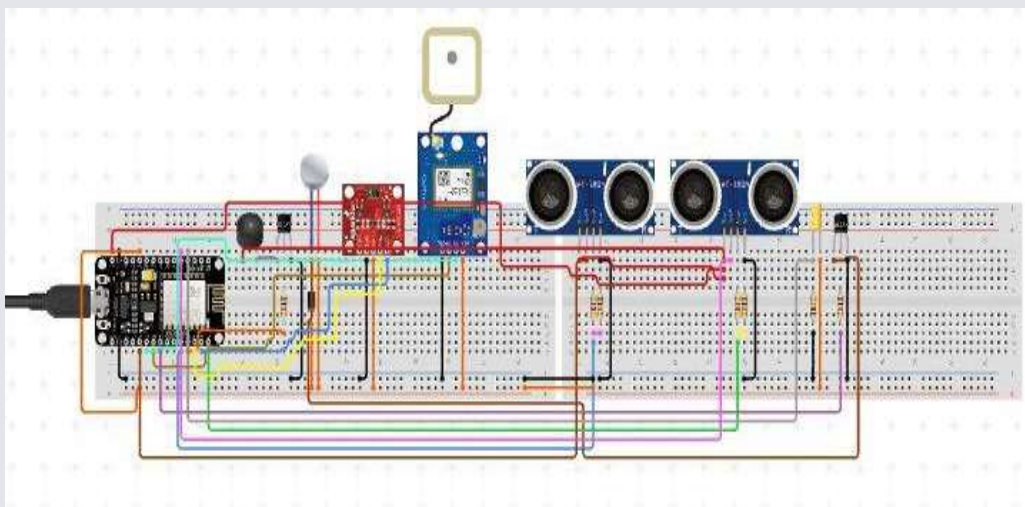
PROTOTYPE :

WORKING PHOTOS :

Conclusion:

To have an in depth analysis a scenario has been set up to gather the performance of the prototype. The prototype is lacks of durability to stay longer in action if the power that been supply to microcontroller board is around 7-10V. It can be seen when the prototype is connected with 9V battery and only the board is actively working while the vibration feature seems not working smoothly. Due to that by adding another power source through the DC power jack thus helps the prototype to work smoothly along with 9V battery and last about 6 hours. Means, this prototype need a constant power that averagely provide around 11-15V. If more voltage than 15V being supply to it, the microcontroller will damaged or crash due to the heat. The field test shows that this prototype working excellence on dry condition and really bad on rainy condition. Moreover, by doing a survey among citizen, shown that this prototype device is a needs and good to be implemented to blind people. Thus, blind assist tool makes the people connected to each other. Good technology comes from good idea.
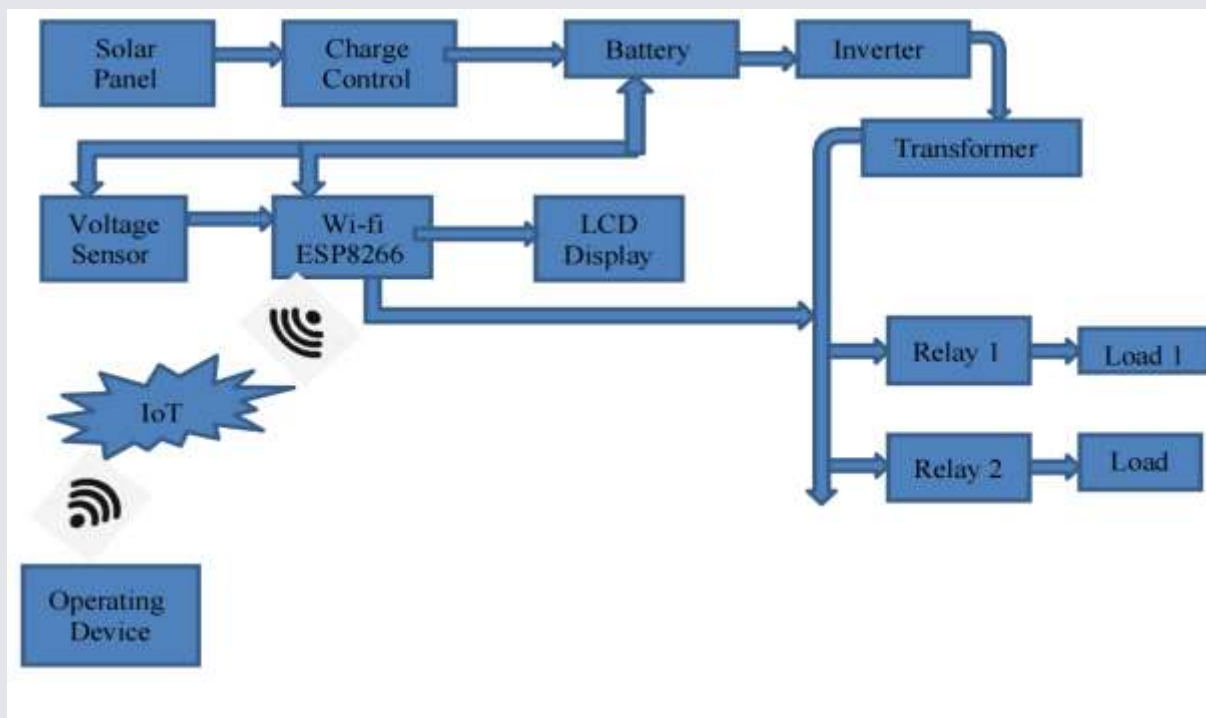
2. IOT BASED SMART INVERTER

K.REVENKATESH, K.VIJAY RAMA RAO, G.KIRITI, K.SANJAY
BHARGAV
SUPERVISOR: Mrs.I.V.V.VIJETHA, M.Tech (Ph.D)

ABSTRACT

Inverters and routers are commonly found in most households applications in today's life. In this proposal, IOT enabled smart inverter i.e. a solar charged inverter that uses Wi-Fi technology to engage a two way communication with the user, and informing the user of both, the battery voltage of the inverter as well as utilization time of the loads which the user chooses to run to be done. Moreover, the wireless control of loads is implemented to ease efficient utilization of energy also increase human comfort. This work uses the ARDUINO UNO microcontroller board based on the ATmega328P along with Node MCU which runs on the ESP8266 Wi-Fi module to implement the aforementioned objectives.
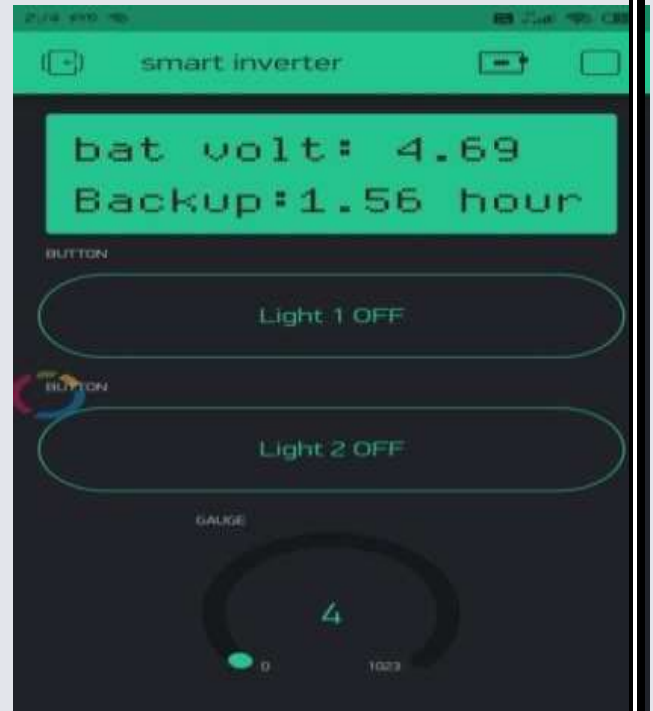
BLOCK DIAGRAM:

PROTOTYPE:

WORKING PHOTOS:

CONCLUSION:

Through this work, we were able to successfully implement an IoT based Smart inverter by retrofitting an existing inverter with new functionalities such as bidirectional communication with the user. At the time of a power cut the user can wirelessly control loads based on his priorities. He can also check his battery voltage to avoid being caught off guard when the battery completely drains out with no indication. This prototype gives insight into working of a self sufficient and reliable system for home automation and monitoring power consumption of household appliances. This system requires only initial stage investment in solar panels and the smart inverter system is developed at low cost.

Future Scope:

A consumer generates enough energy for oneself and uses it accordingly with an environment friendly system. If extended to a community, it can be connected to a grid, where users can "sell" or "buy" the power generated from others, making it even more diverse. This can be implemented using the concept of net metering. Also, since this work is confined to a LAN, port forwarding can be implemented to control the loads even when connected to a different network .

# 3. Home/Industrial appliance control using Google and MQTT

K.Sriram Prakash ,B.komali ,D.Chaitanya Kumar,G.Siva Rama Krishna

**SUPERVISOR :Mr. P. Ram Prasad, M.Tech.**

ABSTRACT:

Automation can be defined as the technology by which a process or procedure is performed without any human assistance. The main motto of the project is to control the process of home appliances like fans, switches, motors, thermostats, etc., by using a Smartphone. Google assistant is AI(Artificial Intelligence) based on voice command service. Using voice, we can interact with Google assistant and it can search on the internet, schedule events, set alarms, control appliances, etc. Google Voice control makesthe operations just so much easier and faster. It provides hands free control, crossplatform multilingual, fast and simple. Mqtt server and Cloud connection (i.e., Gmail) provides great deal to control devices without the assistance of internet. So, it can be used at places where internet is not required.

PROTOTYPE:
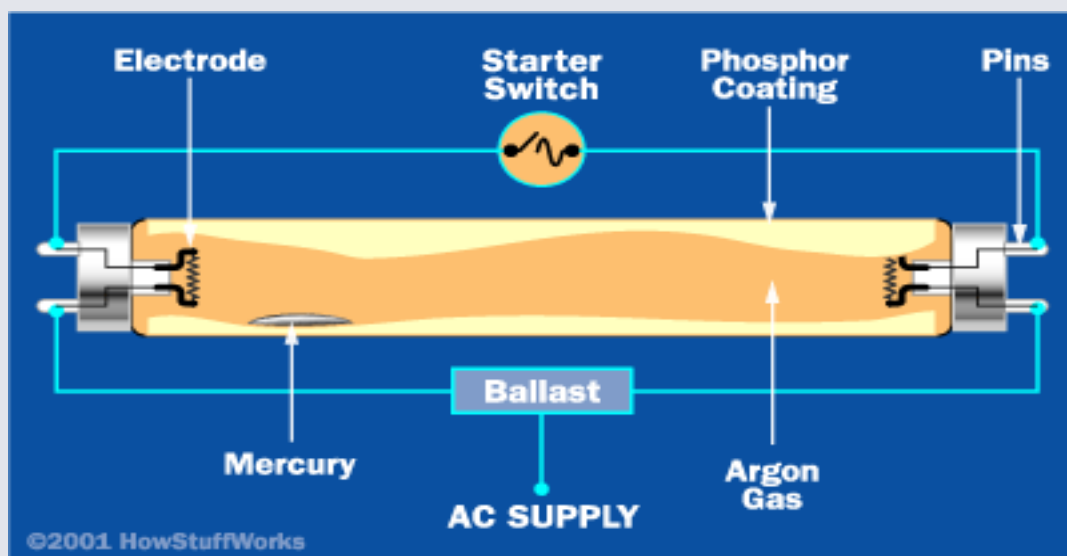
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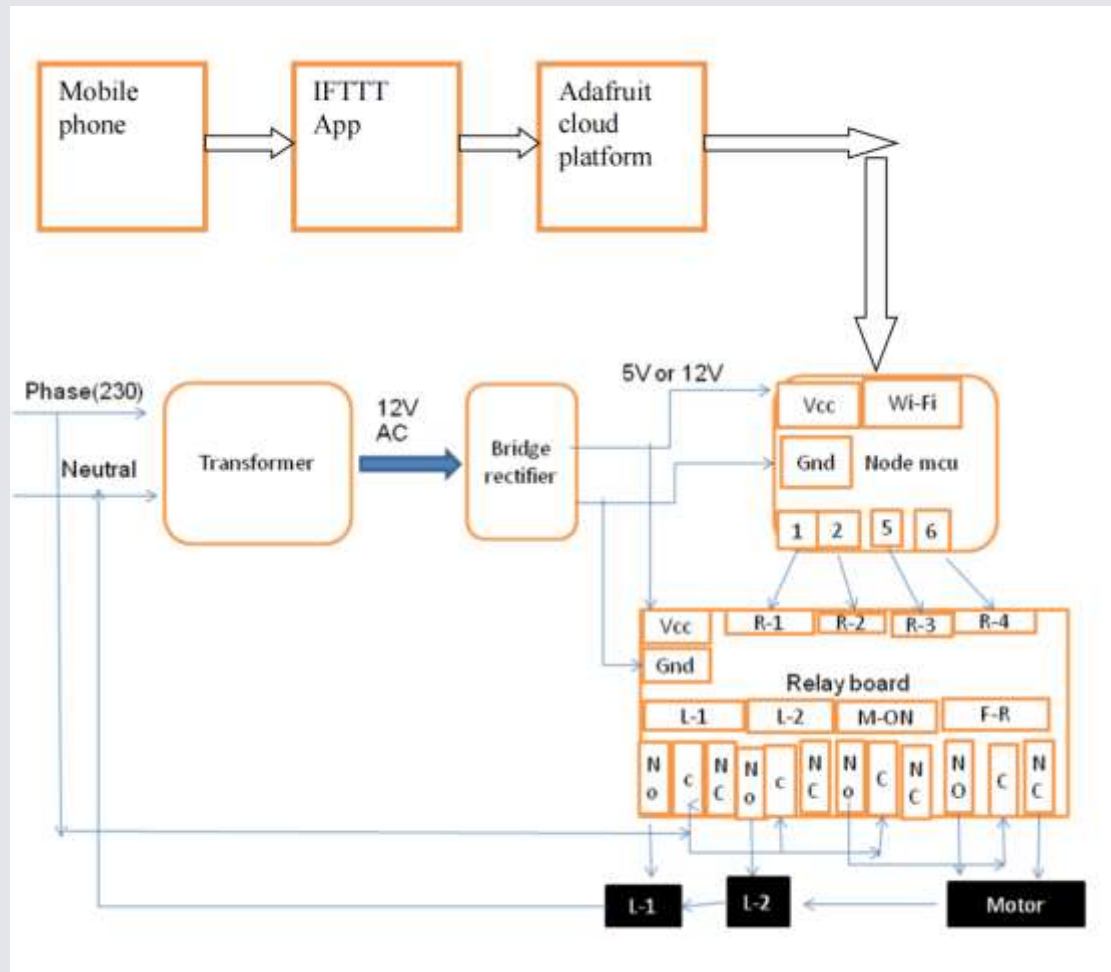
WORKING PHOTOS:

CONCLUSION OF THE PROJECT:

A low cost and flexible home Automation system using Arduino micro-controller is proposed and implemented. Overall Arduino is easy to understand & its coding is easy. By implementing this type of system we can ensure that the energy conservation can be done. By help of this system we can increase the efficiency of the appliances .we can have the complete control over the home appliances from a long distance. This will Increase the comfort ability of human being and it will reduce the Human efforts. The Google Assistant is a software which allows its users to control all the apps in their device to be controlled directly through it. It allows the users to control and command most of the apps in their devices using voice commands. This provides more convenience to the people as they only have to command the Google assistant thorough voice command.

1) Easy to control
2) Cost effective
3) We can observe the recent time the load is active.
4) Fully automated
5) We can control from anywhere in the world.

4. WOMEN SAFETY ARM BAND

B.SURESH , B.B.V.SAI KUMAR , B.PRAVEEN , K.SURESH
**SUPERVISOR: Mr.B.SWAMY, M.Tech**

OBJECTIVE OF THE PROJECT :

Today in the current global scenario, women are facing many problems like women harassment. We propose to have a device which is the integration of multiple devices, hardware comprises of wearable "Smart band" that endlessly communicates with sensible phone that has access to the web. This paper covers descriptive details about the design and implementation of "Smart band". The device consists of a trigger,Arduino (ATmega2560), GSM module (SIM900), GPS module (Neo-6M), IoT camera module (ESP-32). In this project, when a woman senses danger she has to hold ON the trigger of the device. Once the device is activated, it tracks the current location using GPS (Global Positioning System) and sends emergency message using GSM (Global System for Mobile communication) to the registered mobile number and nearby police station. IoT camera module is used to track the location continuously and update into the webpage. The main advantage of this project is that this device can be carried everywhere since it is small.
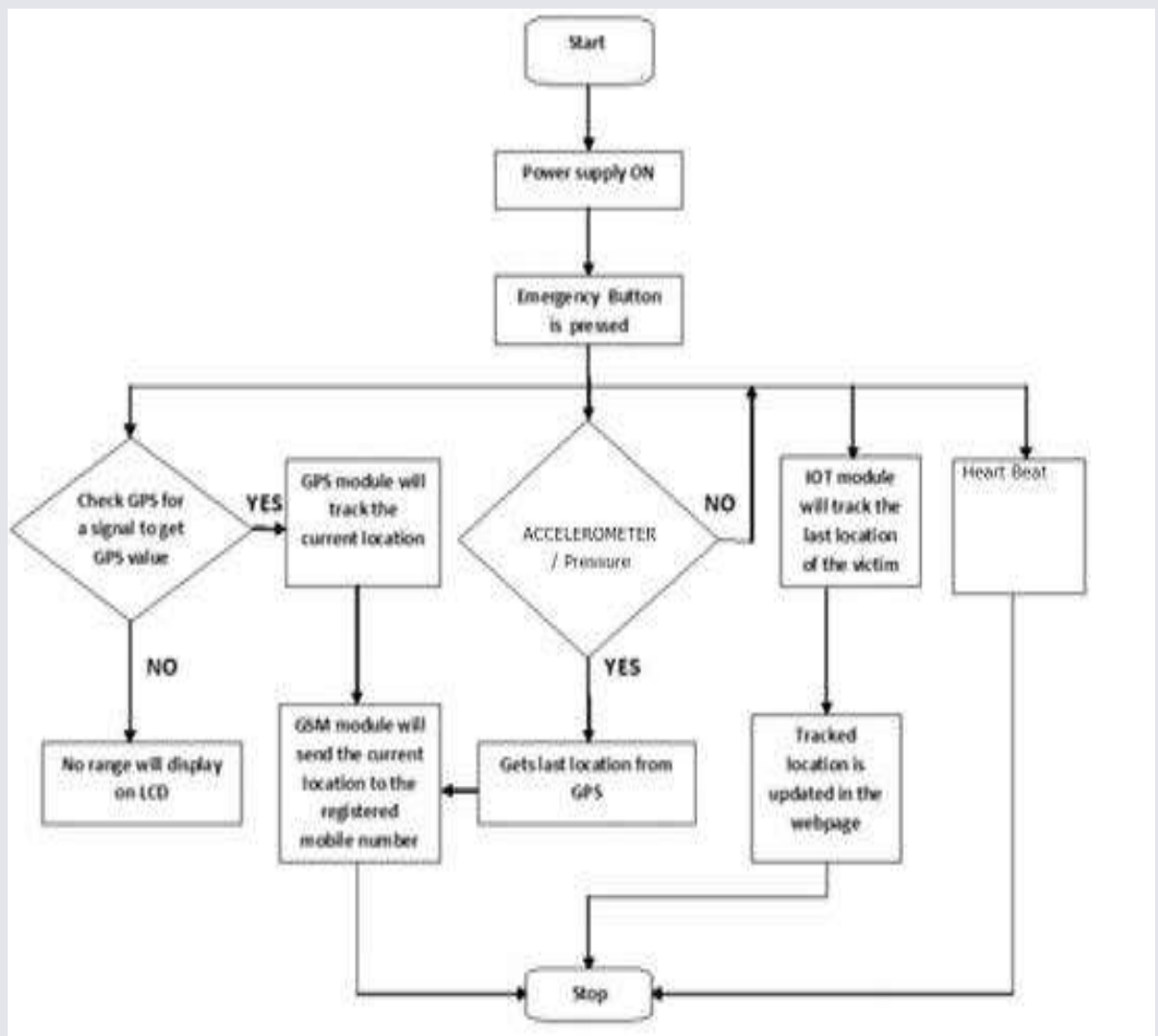
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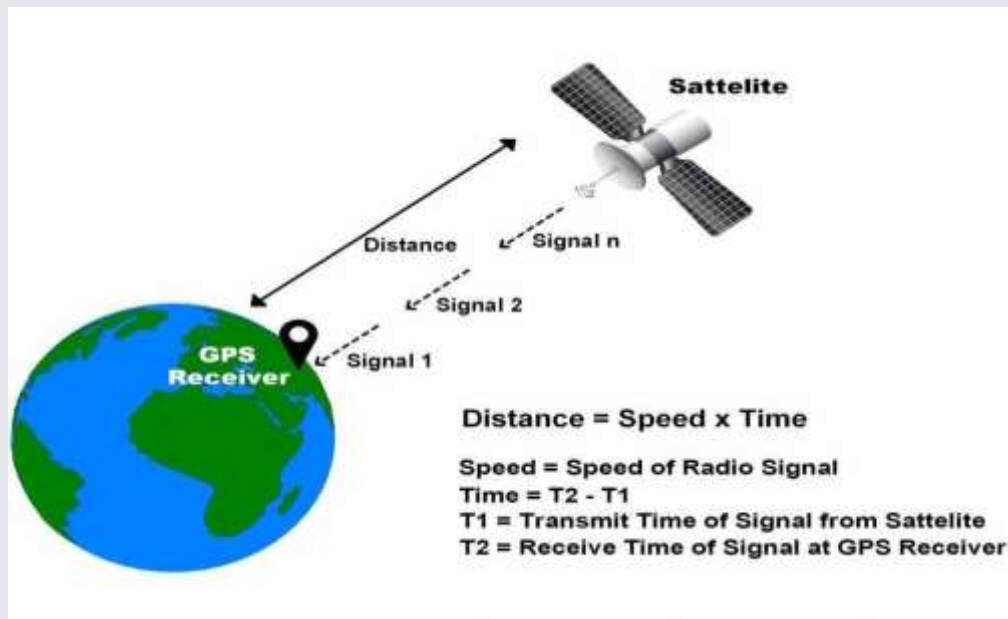
WORKING:

5. A NOVEL ALGORITHM FOR TRANSMISSION LINE PROTECTION

A.BHUSAN NAGA VENKATA SRIKOWSIK, K. K. RAMA GANDHI ,B. VEERA MANIKANTA ,A.RAJESH

**SUPERVISOR:Dr. B. MALLIKARJUNA PhD (Engg.)**

OBJECTIVE OF THE PROJECT:

Transmission lines are the veins of a power system that carry chunks of electric energy from the remote generating stations to the consumers through different terrains under various environmental conditions. As well, they are being operated at their maximum thermal rating to meet the increasing electrical energy demand. Under such condition, even a small disturbance may lead to cascading tripping and ultimately result in power system blackout. Thus, accurate fault detection and classification have been a goal of power system engineers. It helps to disconnect a faulted section before any significant damage occurs to the power system equipment and also minimizes the time of power outages. This project proposes a novel protection algorithm to detect the fault accurately using indexes of current, and power factor. The performance of the proposed algorithm has been verified on a two-bus power system in MATLAB/Simulink environment and also on WSCC-9 bus bar model

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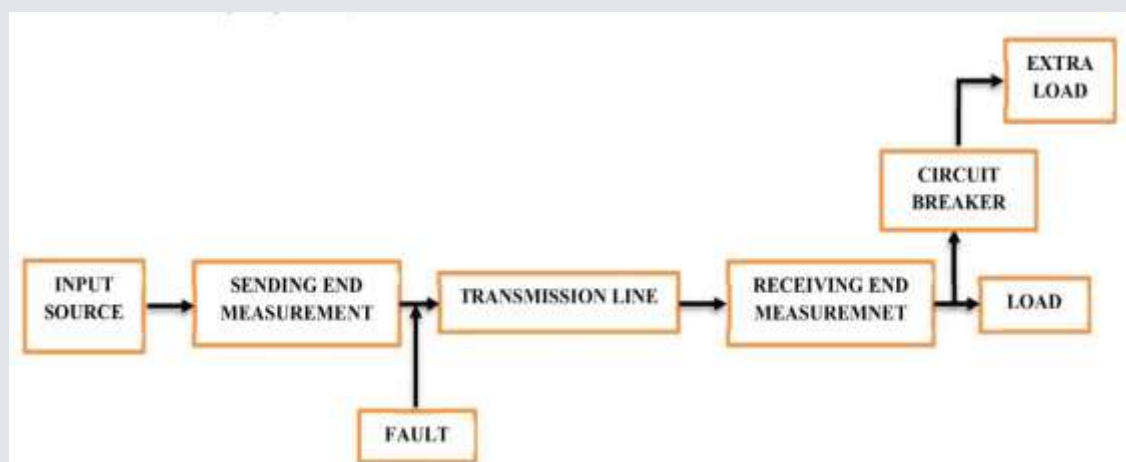
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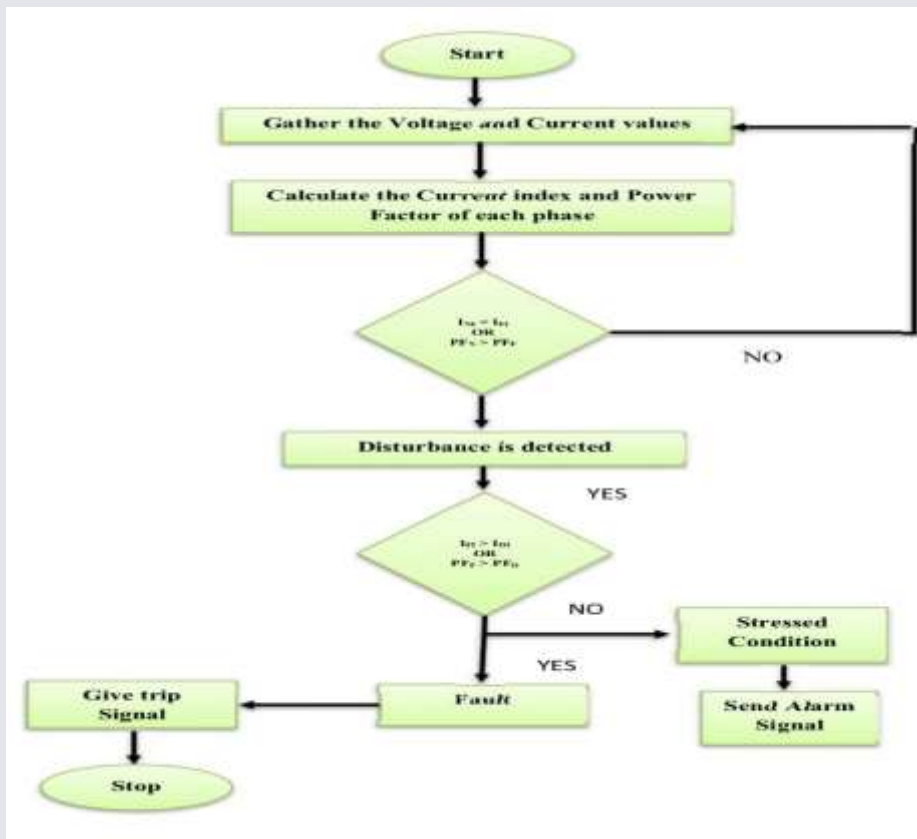
CONCLUSION

The electric utilities companies are expected to provide consumers with a continuous and high quality service at a competitive and reasonable level of cost. This means that they have to insure the reliability of the system to provide consumers with a service what is consistent with the safety personnel and equipment, and meet their demands within specified voltage and frequency. Faults in the transmission lines are one of the elements that affects the reliability of the system. The more faults takes place in the transmission lines results in the more losses, since they could cause outages in the power system, which may leads to the damage of the power system and interruption in the service. Therefore, we proposed a novel algorithm for transmission line protection which is used to detect and classify the fault. So that automatically based on the parameters it can trip the faulted section from the transmission lines which reduces damage and losses to the power system and remaining electrical equipment.