➢ Project title: Secure and human free data aggregation for electrical power supply companies

➢ Name of the college: S G Balekundri institute of technology belagavi-590010

➢ Branch: Electrical and Electronics Engineering.

➢ Name of the students: 1) Sandeep Nesaragi  
                              2) Roshan Basalingol  
                              3) Akashata Modagi  
                              4) Uma Desannaver

➢ Name of the guide: Dr. Satyendra Kumar
INTRODUCTION

- **LINE MAN SAFETY**

  Nowadays, electrical accidents to the line man are increasing, while repairing the electrical lines due to the lack of communication between the electrical substation and maintenance staff. This project gives a solution to this problem to ensure line man safety. This project is arranged in such a way that maintenance staff or line man has to insert the smartcard into the card reader. Now if there is any fault in electrical line then line man will switch off the power supply to the line by inserting electronic card and comfortably repair the electrical line, and after clearing the fault line man switch on the supply to the line by inserting the card this system is controlled by PIC controller from the 16F877A family. A smart card is interfaced to the PIC controller to insert the smart card. The card is detected by the sensor of the card reader.

- **INTELLIGENT LOAD SHEDDING**

  Observations show that lot of man power is required to maintain the load shedding periodically. The area load has to be put ON and OFF according to the requirements. Lot of man power is used which causes huge cost to maintain the power. Hence an idea behind this project is to design and develop a wireless system. With the help of this system the user can control the area load wirelessly according to the requirement.

- **DATA AGGREGATION**

  The aim behind this application is to detect the problem in the transformer, substation and send the data to the remote server using android communication system. Here temperature sensor and short-circuit detectors are used which senses the problem and send the data to the remote server.
BLOCK DIAGRAM:

Display LED

Card reader

Electronic card

Power supply unit

PIC CONTROLLER 16F72

WIFI Modem

Relay Driver

Relay

AREA-1 Load -1

Relay Driver

Relay

AREA-1 Load -2

Temperature sensor-1

Short circuit sensor-2

Relay Driver

Relay

Transmission line operation

Android App

Wireless
OBJECTIVES OF THE PROJECT:

- **LINE MAN SAFETY**
  This system is controlled by PIC controller by using the smart card we can ON/OFF supply where the fault occurred. We can cut off the supply on spot without taking the help of the substation.

- **INTELLIGENT LOAD SHEDDING**
  This project eliminates the manual ON/OFF switching of load. This works on the wireless system if we give the internet connection to this wireless system we can control this load shedding from anywhere.

- **DATA AGGREGATION**
  In this application we are using temperature sensor as a sensing device to protect the transformer from overheating of transformer due to overheating of transformer the efficiency of the overall system is reduced hence in this system sensors is used to detect the over temperature in transformer and using android application and Wi-Fi wireless communication this data is send to the remote server.

METHODOLOGY

Here in this system a smartcard is used for the lineman safety. The transmission line can be operated with the help of smartcard.

The load shedding of different areas is wirelessly controlled using android O.S and WIFI communication. The full project is a combination of hardware software, smart card, smart card reader, PIC controller relay driver and relays WIFI communication, android app.

A temperature sensor is placed on the body of the transformer whenever the transformer over heated then the temperature sensor will sense and single is transferred to the android app as the maintenance is required.

RESULT AND CONCLUSION

This project provide safety for line man’s life and safeguard him and also reduce the man power in load shedding. Time management can be done easily through android app, also secure the transformer from losses.

FUTURE SCOPE

This project can be improved using computer as a remote server.