# THE CURIOUS FOUR'S

# SCARCITY

# SOON TO BE

# FOR IBM'S
# HACKATHON

# Table of Contents

- DECLARATION

- INTRODUCTION

- IDEOLOGY AND UNIQUENESS

- PROJECT GOALS AND OBJECTIVES

- MINDMAP

- OUTCOMES

# INTRODUCTION

" Energy saved today is an asset for the future".

In India the energy conservation is very much essential as the demand in the society is increasing day by day , looking over the scenario , electrical energy audit is done. It is a process of checking how energy is used and identifying the areas where wastage can be minimized if not totally eradicated . Energy audit consists of several tasks which can be carried out depending on the type of the audit and the function of the audited facility . It starts with a review of the historical data on energy consumption , which can be compiled from the electricity bills .

If you're spending a lot on your energy bills, any time is the right time to get an energy audit. The sooner you make updates to your home to make it more energy efficient, the sooner you'll start saving money.

Leaks make your future bleak.That being said, you might want to keep in mind seasonality. Many houses feel drafty or cold in some areas and warm in others during the winter. If you live in the Northeast and spend a lot of money on energy during the winter, it might be a good idea to get energy efficiency measures complete before the cold weather kicks in.This logic works the other way as well – if your electricity costs are high in the summer because of central air conditioning, having an audit and time to perform energy efficiency measures before the highest temperatures come may be the best route.

## PROJECT GOALS AND OBJECTIVES

- To create an awareness among people about the energy losses in their houses

- To analyse energy usage of higher energy consuming appliances in residential buildings

- To focus on monetary saving by simple preventive measures

- To reduce dependency on foreign energy sources and reduce environmental damage

- The dynamic behavior of the weather conditions and building operation, and the presence of multiple variables, requires the use of computer aid in the design and operation of high energy performance buildings.

- To increase the lifespan of appliances

- To find heat/material loss , harness and improve process productivity

- To suggest remedies that are specific to each inefficient appliance of the user

- To give predictive measures considering usage fluctuations based on weather conditions and festive seasons

- To highlight wastage in major appliances

- To fix energy saving potential targets

- Identifying areas of improvement and formulation of energy conservation measures requiring no investment or marginal investment through  system improvements and optimization of operations.

- To audit energy without any capital investment

- To monitor the routine usage of energy by the user , and indeed, be continuously thinking of new methods of gathering information to help identify further saving

# IDEOLOGY AND UNIQUENESS

The dynamic behavior of the weather conditions and building operation, and the presence of multiple variables , requires the use of computer aid in the design and operation of high energy performance buildings.

In the past, people who cared about the energy efficiency of their property would hire experts to visit their facility. These experts would copy motor name plates and take measurements of things like power, temperature and flow rate. They would record all of this information in notepads, using pens. Sometimes, they might install data loggers to measure things like electrical current and steam pressure over a period of a week or two. Then they would return to their office and type everything into an Excel spreadsheet, do some calculations and write everything up into a Word document, which would then be converted into a PDF file. The PDF file would be emailed to the person that cared about energy efficiency, and the people would file the PDF file into a folder on the corporate network. Often, that would be the end of the activity.

The days of Excel spreadsheets, Word document and PDF reports are numbered. They are about to be replaced, along with many of the experts, with Continuous Computer Energy Auditing (CCEA). The primary technology that will make this possible is artificial intelligence, or perhaps a subset of AI known as Machine Learning.

Based on this machine learning the category of the energy loss is been predicted and an accurate preventive measures ideas are given to the user . All the data collected during the audit are encoded into a specialised software program. This application is used to attribute a label from A to E to all the elements analysed. The auditor then makes recommendations and draws up a projection of the way your home would be if you were to follow these recommendations. In the last stage, the auditor draws up a final report and adds any observations that the user must be suggested with .

**MINDMAP**
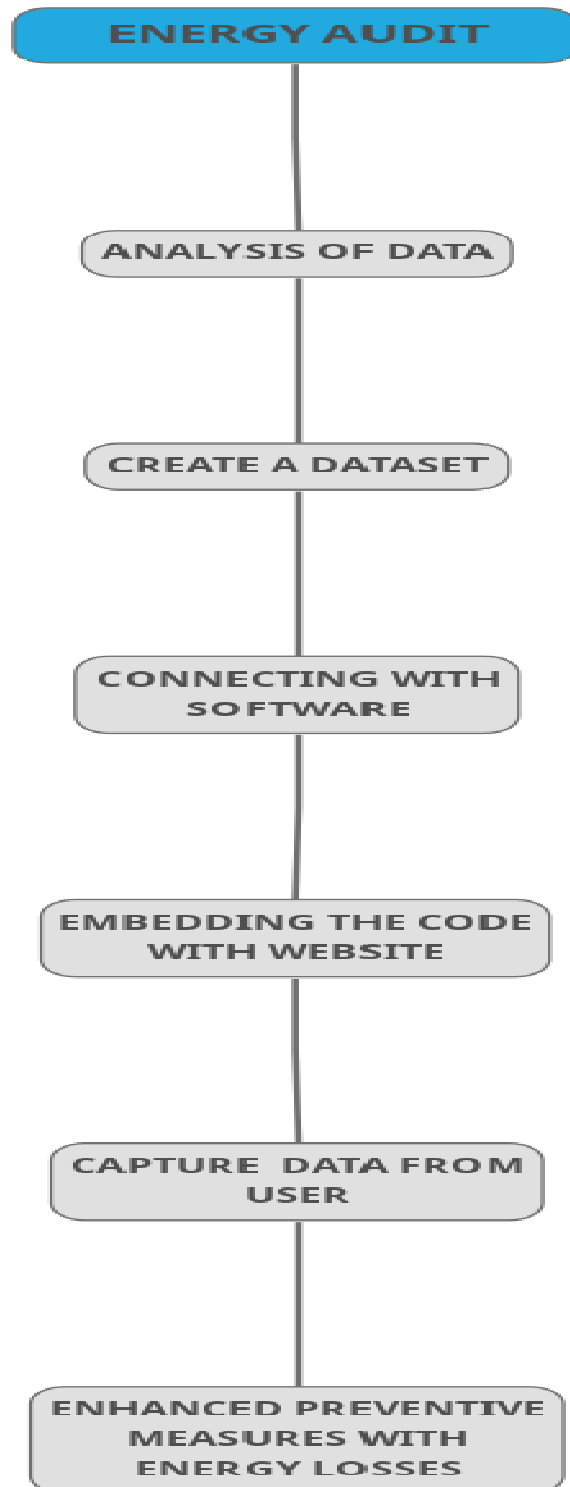
## OUTCOMES

- Lower cost. A cost structure that's a fraction of existing metering systems — deployed throughout your facility right down to the circuit level.

- Breakthrough technology. Hardware and software deliver significant operational, energy conservation and demand management savings for residents

- Access to data anywhere and everywhere. Information is delivered through the website whenever the user wish to get their energy audit.

- Historical and real-time data from all electrical equipment available to the residential areas .Continuous energy audit. Granular data is contextualized with software provides to minimize energy waste, reduce peak demand, and improve operational and equipment efficiency

- Major cost savings with conservation and demand programs. Reduce or eliminate equipment operation when you don't need it. Identify equipment that can be replaced with newer, more efficient technology.

- Understand where and when peak demand charges are happening – and act to reduce those costs

- The ability to maintain with precision is done by machine learning and makes it possible to benchmark equipment . When energy consumption rises due to malfunction or deterioration, on time notifications to management are issued by providing the ability to instantly address energy drift and high energy consumption.