

Automatic Electricity Bill Generation

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Abstract: *This venture can be utilized for decreasing the outstanding task at hand of the power board. The undertaking "Programmed Electricity Bill Generation" is to computerize the chronicle of vitality meter perusing and to create and convey bill naturally. The vitality meter perusing in our places is noted physically, which includes tremendous measure of labor and time to finish the procedure. To defeat these issues, the chronicle of vitality meter perusing ought to be done consequently. It very well may be cultivated by the innovation of implanted frameworks. The thought behind this venture is to structure a solitary Micro controller based Digital vitality meter framework which can gauge the force utilization of numerous quantities of customers through remote system and transmit to the division through remote system.*

Keywords: Energy Meter, Wireless, Bill generation

I. Introduction

Pretty much every house in India is associated by power line, aside from in some provincial zones. There will be a system of these lines, associating each house. The association goes to each house through a vitality meter. The vitality meter takes the perusing of the quantity of units devoured. There will be a showcase of the quantity of units expended. A worker of the power office takes the perusing in like clockwork. The quantity of units expended for that period is determined as:

Current perusing on the meter - Previous perusing on the meter.

They keep up a power buyer card at each house, which the worker will refresh each time he takes the perusing. He records the date and current perusing. He records the client number and the perusing for his reference as well. These readings are taken to the power office, counts are done and the power charge which will be arranged and send to the clients.

II. Advantages & Disadvantages of Existing System

In the wake of getting a thought regarding the current framework we may feel that everything is going fine. But since of the present framework, government is losing parcel of its income. The main bit of leeway of the current framework is that it gives work. A ton of workers are enrolled by the power board to take readings. What's more, another arrangement of workers for doing the computations and the printing the bill. The administration is losing bunches of their reserve in paying these workers, where the productivity of the representatives being far less. An individual can't cover 100 houses in a day. With 1000 of houses associated by power, the quantity of representatives required for this design is additionally far high. The current framework experiences load of drawbacks:

- ❖ Huge measure of labor
- ❖ Plenty of time to finish the procedure
- ❖ Erroneous readings
- ❖ Missed out houses
- ❖ Door Locked houses and so on

Along these lines, the administration can't bear the cost of such a great amount for a framework with heaps of inconveniences.

III. Proposed System

This single Micro controller based advanced vitality meter framework can quantify the force utilization of numerous quantities of shoppers through remote system and transmit to the office through remote system, where power bill can be produced consequently through a PC program, so it is named as Automatic Electricity Bill Generation. This multiplexed vitality meter is utilized to introduce in the electrical post or in the Pillar-box to peruse the flow devoured by the gathering of purchasers.

This framework utilizes a system of remote vitality meters to screen vitality use all through enormous multi-story structures, open divisions, and naturally transmit the readings by radio sign to a focal information server. Giving time-stepped, interim based utilization information and correspondent interest readings exact to the principle server PC, remote vitality metering

framework brings down by and large introduced costs by dodging the need to lay correspondences wire and the related course all through an office.

Since, by the utilization of devoted cell phone or remote system and any of the shopper's phone line system to speak with the charging branch of the association we can discover the force burglary effectively at specific area. At the charging station there is collector unit which is interfaced with the PC through sequential port. In pc there can be the database of every shopper to record the units devoured by the customers.

IV. Algorithm for the Transmitter side

Step1: Initialize and Clear the LCD.

Step2: Write "WIRELESS ENERGY METER" on the LCD.

Step3: Again, Clear the LCD.

Step4: Write "UNITS".

Step5: Timer is programmed to use as Counter.

Step6: Counter is used as to count the impulses through the relay connected across the port P3.4.

Step 7: At each count it displays the impulses on LCD connected at Port P0.

Step 8: Units counted by the Counter are in Hexadecimal which are converted into BCD.

Step9: This BCD number is further converted into ASCII in order to display the impulses.

Step10: These Impulses are further encoded by using Encoder HT12E and Transmitted to Receiver through serial Communication using RF module.

V. Algorithm for the Receiver side

Step1: Initialize and Clear the LCD.

Step2: Write "UNITS".

Step3: Data is received at the port P3.4 through RF antenna.

Step4: Counter is used as to count the impulses.

Step 5: At each count it displays the impulses on LCD connected at Port P0.

Step 6: Each unit is displayed on the computer through serial communication

VI. Interfacing with the Computer:

Step 1: Using Serial port connector cable (DB9), connect the hardware with the Computer.

Step 2: Now open the HyperTerminal link on the computer, path for which is go to Start > All Programs > Accessories > Communication > Hyper Terminal. In windows 7 it is required to get the option for Hyper terminal by downloading it from the web. But in Windows XP it is already given.

Step 3: By clicking on the Hyper Terminal, a dialog box will open which is as shown below:

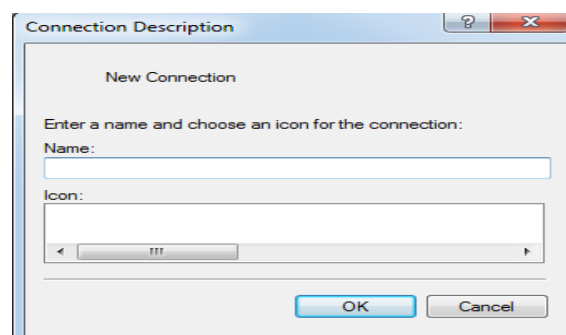


Fig.1. Connection Description

Step 4: Enter the name and Select the icon. As this snapshot is from downloaded Version of Hyper Terminal so no icon is available. So it is not required here.

Step 5: After putting the name another dialog box will appear as shown below. Fill the details and select the COM port to which our hardware is connected.

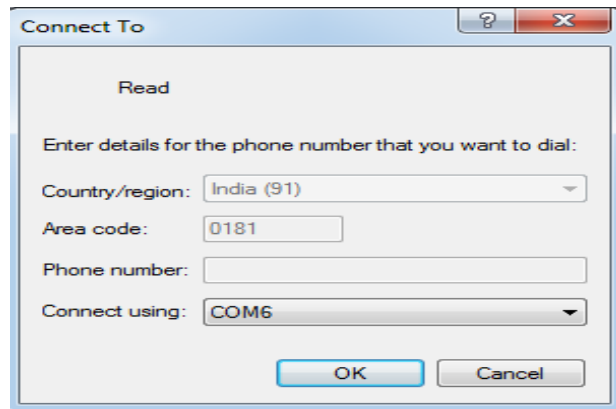


Fig. 2. Select Com port

Step 6: After this another dialog box will appear, selecting the baud rate to 9600 8-N-1, click OK and we will start getting Values in our computer. The window will appear as shown below:

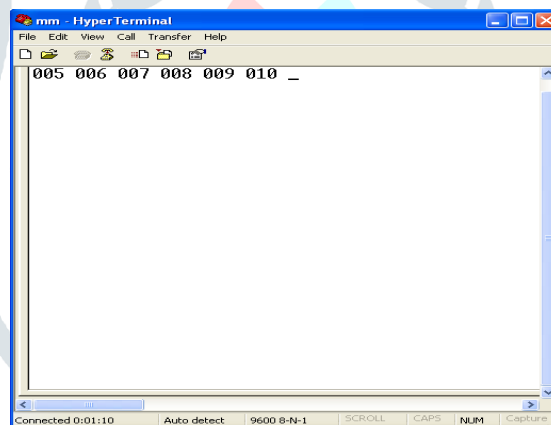


Fig.3. HyperTerminal dialog box

Step 7: We can save these values by selecting Capture Text in the Transfer Tool as shown below.

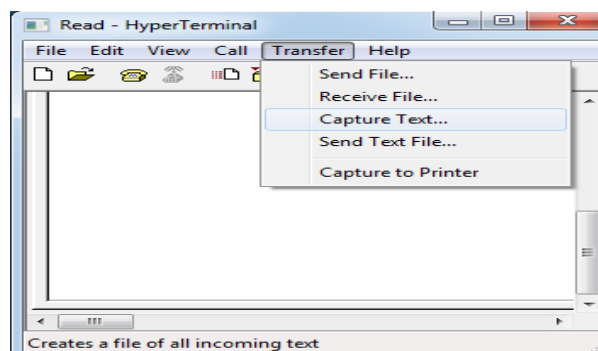


Fig.4. HyperTerminal Dialog box

Step 8: Now open the saved file in MS excel sheet and by putting the formulae for Tariff calculation formulae we can easily generate the will of the consumer. We can save this connection for the future reading also.

Step 9: While opening the file in Excel, select the option Text File. Then open the file as shown below.

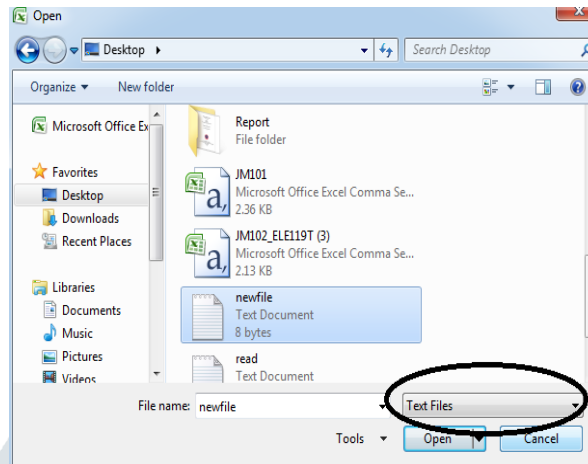


Fig. 5. Saving the file

Step 10: In this way our data will be in the form as we want in Excel sheet. By putting the formulae for calculating the tariff we can get the bill of each consumer.

VII. Conclusion

Let us make a possibility investigation of the framework produced for its useful usage. Achievability study is led to check whether the proposed framework is plausible in all regards. Attainability study is the trying of the framework proposition as per its usefulness, effect of the association, capacity to address client issue and viable utilization of assets. There are three primary perspectives in the possibility study.

(a) Technical feasibility

The plan of the computerized meter is so that it tends to be effectively delivered in mass and provided. The 89c51 miniaturized scale controller will be inserted inside the advanced meter and the 89c51 is promptly accessible. Lying a period is the main least cost practical arrangement. Along these lines, the proposed framework can be in fact plausible.

(b) Economic feasibility

The proposed framework is monetarily attainable on a since quite a while ago run as the upkeep cost is extremely low despite the fact that the underlying venture is somewhat high. The administration can cut off on the month to month compensations given to the workers. The instruments required are planned so that it will be accessible in any event conceivable expense and solid simultaneously.

(c) Operational feasibility

The task is operationally practical on the grounds that it needs just 1/100th of the current representatives and different misfortunes to the administration can be maintained a strategic distance from, and subsequently the framework is operationally doable.

VIII. References

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