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Abstract: *Automatic meter reading could be a Application designed to mechanically aggregation consumption, diagnostic, and standing knowledge from utility meters (electric, water and gas) and transferring the retrieved knowledge to a central info for request, troubleshooting, and analyzing etc.*

Meter Reading is Associate in Nursing application that may assist you monitor your consumption of e.g. electricity, gas or water. however indeed something that includes a meter are often monitored with Meter Reading. you'll have potential savings in your budget if you monitor your consumption and alter the means you consume energy.

The Application is constructed basically to observe the energy usage and accessing the daily energy knowledgewhich may lead to higher energy management. enabling correct knowledge hold on, analyzed and given to a client on demand.

Tracking the period consumption on each day to day basis within the most value effective thanks to determine energy wastage as well as analysis, will facilitate each utility suppliers and customer's management the utilization and production of electrical energy, gas usage, or water consumption. the appliance utilized in utility meters for aggregation the information that is required for request functions.

Keywords: *Gas Meter, Nursing application, potential saving, Automatic Reading*

I. INRODUCTION

Automatic Meter Reading (AMR) was initial tested thirty five years agone once trials were conducted by AT&T in co-operation with a gaggle of utilities and inventor. when those victorious experiments, AT&T offered to producecommunication system based mostly AMR services at $2 per meter. the worth was fourfold quite the monthly value of an individual to browse the meter 50-cents. therefore the set up was thought of economically unworkable.

The modern era of AMR began in 1985, once many major full scale comes were enforced. Hackensack Water Co. and evenhanded Gas Co. were the primary to arrange to full scale implementation of AMR on water and gas meters severally. In 1986 Minnegasco initiated a 450,000 radio based mostly AMR system. In 1987 metropolis electrical Co. round-faced with an outsized range of inaccessible meters, put in thousands of distribution line carrier AMR units to unravel this drawback. Thus, AMR is changing into a lot of viable day after day. Advances in solid state physics, micro chip parts and low value surface mount technology assembly techniques are the catalyst to supply reliable efficient merchandise capable of providing the economic and human edges that justify the utilization of AMR systems on an outsized, if not complete basis.

Android based mostly meter reading Application is employed to urge the readings from the meter mechanically by merely capturing the image of the meter and so playacting the OCR technique that is nothing however "optical character recognition". The OCR technique is employed to spot the character from a picture and used this character to urge the meter readings.

In automaton {based|basedmostly|primarily based mostly} meter reading Application the automaton based device are going to be pass to the worker of the various department and also the admin are going to be having management over it.

II. PROBLEM STATEMENT

Following area unit the problem:-

One basic drawback in meter reading system is that this methodology is improbably time overwhelming. the worker of the meter reading is initial record the meter thus|then|so|and then} goes the meter reading offices and so in step with that meter reading department is calculate the meter value. thanks to that this method is improbably time overwhelming.

And reasoned is whereas recording the meter value the person can build the error to correct worth.

III. EXISTING SYSTEM

 Person come back close to the meter and take manual entry on the
paper. purpose of distinction can producemassive distinction into the overall quantity of the bill.
Lack of Accuracy.
 Billing will be done manually which can be a time overwhelming method.
 Energy Audits performed supported bill assortment that is very inaccurate.
Highly Person dependant.
 Human errors can't be avoided.

IV. PROPOSED SYSTEM

 Android based mostly meter reading application is is Associate in Nursing application that may assist you monitor your consumption of e.g. electricity, gas or water. however indeed something that includes a meter are often monitored with Meter Reading.
 Android based mostly meter reading Application is employed to urge the readings from the meter mechanically by merely capturing the image of the meter and so playacting the OCR technique that is nothing however "optical character recognition". The OCR technique is employed to spot the character from a picture and used this character to urge the meter readings.

V. TECHNOLOGY MODULES USED

- Platform: Android, Windows
- .NET Framework
- Android App for Mobile Application
- MS-SQL

VI. OCR:

(OCR) is a powerful tool for bringing info from our analog lives into the progressively digital world. This technology has long seen use in building digital libraries, recognizing text from natural scenes, understanding hand-written office forms, and etc. By applying OCR technologies, scanned or camera-captured documents are born-again into machine editable soft copies that will be emended, searched, reproduced and transported with ease .
Our interest is in enabling OCR on mobile phones. Mobile phones are one of the foremost unremarkably used electronic devices nowadays. Commodity mobile phones with powerful microprocessors (above 500MHz), high-resolution cameras (above 2megapixels), and a variety of embedded sensors (accelerometers, compass, GPS) are wide deployed and turning into present nowadays. By fully exploiting these blessings, mobile phones are turning into powerful moveable computing platforms, and therefore will method computingintensive programs in real time.

In particular, some modern mobile devices will use footage of barcodes to look up careful info a few product's ratings, price, and reviews. Some mobile phones with business card reader application installed facilitates users to transfer contact info directly from business cards. This allows business folks to hold only 1 customized card with no physical copies to share.

The real time system consists of automating the method of capturing a picture and transmitting it to a distant hand-held device situated out of line of sight of the reader. To design a operating answer for the given system downside, several completely different tasks had to be performed.
Research had to be conducted on key topics, including the ZigBee protocol and however to interface external devices with completely different in operation systems. As well, implementation of transmission over ZigBee and communication through external devices,
The research that we have a tendency to did, finally conclude that the system can be build supported humanoid OS which might be accustomed get the Bill to the client with efficiency with none further efforts.
A typical OCR system consists of several elements. In figure 3 a common setup is illustrated.

The first step within the method is to alter the associatealogy document victimization an optical scanner. When the regions containing text area unit situated, each image is extracted through a segmentation method. The extracted symbols may then be pre-processed, eliminating noise, to facilitate the extraction of features in the next step.

The identity of each image is found by comparison the extracted options with descriptions of the image categories obtained through a previous learning section. Finally contextual info is used to reconstruct the words and numbers of the initial text. In the next sections these steps and a few of the methods concerned area unit represented in additional detail.

VII. TECHNICAL SPECIFICATIONS

Minimum hardware requirements:

- At least 166 MHz Pentium Processor or Intel compatible processor.
- At least 16 MB RAM.
- 14.4 kbps or higher electronic equipment.
- A video graphics card.
- A mouse or other inform device.
- At least 3 MB free exhausting disk house.
- Microsoft Internet Explorer 4.0 or higher.

VIII. HARDWARE AND SOFTWARE SPECIFICATIONS

HARDWARE

- 256 MB RAM.
- 80 GB HDD.
- Intel 1.66 GHz Processor Pentium 4
- GPRS enabled Mobile Phone with Android.

SOFTWARE

- Visual Studio 2008
- MS SQL Server 2005
- SDK for Android API 8 & higher

IX. PROS-

- No Need to wait for Server Response & Speedy Work.
- If GPRS Connectivity is Low then also System will Work.
- Real time data Updating on Integration Software (Server)

X. CONS-

- Data Reflection on Integration Software (Server) will be Delayed by 5-10 Mins.
- If GPRS Signals are low then System get Slower & it will take more time to Exchange data from Integration Software (Server).
- Field Person has to wait till the Time, Integration Software (Server) Responds

XI. APPLICATION AND ADVANTAGES

- Saves Money, Monitor, manage and conserve energy.
- Meter reading in challenging to access places.
- Eliminating estimated bills and predicted consumptions.
- Reducing manual meter reading costs and effort.
- Accurate billing enables for correct payment.
- Tariff optimization.
- Improved billing and tracking of usage.
- Zero Loss due to theft, fraud and meter tampering.
- Area manager (Admin) can view / track / location of meter reader.
- Area manager (Admin) can view picture of meter Readings, to Compare consumption Entered by meter Reader and actual reading in meter.
- Area manager (Admin) will be able to generate all reports on fly as and when required e.g. number of meter marked as zero consummation, hazardous, Abnormal etc.
- Meter reader just need to follow walk sequence, also where and when required, meter reader able to put walk sequence update request.

XI1. SCOPE

Employee will login to the appliance.
It takes the image of the meter and sends to the server.
The server stores {the worth|the worth} and calculates the worth consistent with the meter value.
Software Development Model Used
Software method model deals with the model that we have a tendency to area unit aiming to use for the eventof the project. There area unit several code method models on the market however whereas selecting it we must always opt for it consistent with the project size that's whether or not it's trade scale project or massive scale project or medium scale project.
Accordingly the model that we decide ought to be appropriate for the project because the code method model changes the price of the project conjointly changes as a result of the steps in every code method model varies.

This code is build victimisation the falls mode. This model suggests work cascading from step to step sort of a series of waterfalls. It consists of the subsequent steps within the following manner

CONCLUSION

Data Reflection on Integration code (Server) are going to be Delayed by 5-10 minutes.
If GPRS Signals area unit low then System get Slower & it'll take longer to Exchange knowledge from Integration code (Server).
Field Person needs to wait until the Time, Integration code (Server) Responds

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