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Multi-Language based Android Application for Motor Control

Prasad S. Kautkar
Dept. of Computer Engineering
BVCOE & RI, Anjeneri,
Trimbakshwar, Nashik 422213
kautkar@gmail.com

Kiran S. Kandalkar
Dept. of Computer Engineering
BVCOE & RI, Anjeneri,
Trimbakshwar, Nashik 422213
kandalkark@gmail.com

Akash R. Raut
Dept. of Computer Engineering
BVCOE & RI, Anjeneri,
Trimbakshwar, Nashik 422213
Akashraut.8@gmail.com

Vaibhav N. Baviskar
Dept. of Computer Engineering
BVCOE & RI, Anjeneri,
Trimbakshwar, Nashik 422 213
Vaibhavbaviskar94@gmail.com

Prof. V. D. Badgujar
Dept. of Computer Engineering
BVCOE & RI, Anjeneri,
Trimbakshwar, Nashik 422 213
badgujarvivek83@gmail.com

Abstract— some wise individual once aforementioned that system could be a system wherever we will finish off the machine whenever we'd like. That's the distinction between controlled and uncontrolled system. Our project is regarding create this system economical and dynamic. Because the name instructed the automated management is for dominant the motor from remote place, look over its operational conditions; get feedback from the motor itself. Our target is to manage the motor from distant place by mobile DTMF tone and conjointly get feedback by SMS whereas it's in ON or OFF condition. We tend to conjointly make sure the safe operation of the motor by police investigation the voltage of the supply and guarantee feedback from system whereas it's over or below voltage. Once more we tend to conjointly get these feedbacks by SMS additionally. GSM network is all over in our country that's why we decide GSM network to control our motor conjointly transferring feedback data through it. We tend to conjointly use GSM network as a result of if we tend to use it then we tend to don't have to be compelled to establish further instrumentation for networking. To transmit feedback signals we tend to use GSM electronic equipment at the motor finish conjointly generate management signal by mobile DTMF as a result of it's terribly simple to get DTMF by mobile station and send feedback SMS by electronic equipment additionally. In industrial sector we tend to hope our project is become handy and value effective to control motor and provides its protection.

Keyword- DTMF tone, SMS, GSM network.

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I. INTRODUCTION

This Project is a very good example of embedded system as all its operations are controlled by intelligent software inside the micro-controller. The aim of this project is to control i.e. to ON/OFF control of different motors, the electrical or electronic applications connected to this system from anywhere in the world using Android application. For this purpose user can use any type of Mobile. This way it out-brave the limited range of infrared and radio remote controls. Using the vantage of SMS, this project lets you remotely control equipment by sending plain text messages, such as "abcdn1", "abcdnaf3", "abcdf57n142"– all of which can be per-programmed into the controller and easily remembered later.

Short Message Service (SMS) is defined as a text-based service. That enable up to 160 characters to be sent from one mobile phone to another. In a similar vein to e-mail, messages are stored and forwarded at an SMS center, allowing messages to be retrieved later if you are not immediately available to receive them. . Unlike voice calls, SMS messages travel over the mobile network's low-speed control channel. "Texting", as its also known, is a fast and convenient way of communicating. In fact, SMS has taken on a life of its own, spawning a whole new shorthand language that's rapidly Many industries have been quick to make use of this technology, with millions of handsets currently in use. As new models with "must have" features hit the market, older models become virtually worthless and if not recycled, end

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up in landfill. With this in mind, we've designed the project to work with Quectel M95 GSM modem.

II. LITERATURE SURVEY

Enck, W., Ongtang, M., McDaniel, P.[1], " A Study of Android Application Security" Android is an OS designed for smartphones.Depicted in Figure 1, Android provides a sandboxed application execution environment. A customized embedded Linux system interacts with the phone hardware and an off-processor cellular radio. The Binder middleware and application API runs on top of Linux. To simplify, an application's only interface to the phone is through these APIs. All application is executed within a Dalvik Virtual Machine (DVM) running under a unique UNIX uid. The phone comes pre-installed with a selection of system applications , e.g., phone dialer, address book. Applications interact with each other and the phone through different forms of IPC. Intents are typed inter-process messages that are directed to particular applications or systems services, or newcast to applications subscribing to a particular intent type. Persistent content provider data stores are queried through SQL-like interfaces. Background services provide RPC and callback interfaces that applications use to trigger actions or access data. Finally user interface activities receive named action signals from the system and other applications. Binder acts as a mediation point for all IPC. Access to system resources (e.g., GPS receivers, text messaging, phone services, and the Internet), data (e.g., address books, email) and IPC is governed by permissions assigned at install time. The permissions requested by the application and the permissions required to access the application's interfaces/data are defined in its manifest file. To simplify, an application is allowed to access a resource or interface if the required permission allows it. Permission assignment—and indirectly the security policy for the phone—is largely delegated to the phone's owner: the user is presented a screen listing the permissions an application requests at install time, which they can accept or reject.

Skurski and Swiercz [2] propose a control system based on VNC for Symbian OS smartphones. This system was designed to improve application testing systems in mobile devices due to the lack of resources in mobile devices and the high cost of test environments. Also the solution proposed could be used to perform remote configuration.

As part of the Android platform exists the Android Debug Bridge (ADB) protocol [3] to provide debug functionality on devices. The platform integrates this protocol and it offers a service of server when is configured on the device.

Other aspect to be considered is the remote visualization mechanisms that are useful for achieve a remote display of the devices. The most popular system designed to perform remote control of devices is Virtual Networking Computing [4]. There are a large number of implementations to this solution including applied to Android software stack. It has an open protocol and it is widely deployed in the open source community. This solution adapts very well to provide part of the functionality of the architecture, and it will be studied further.

This paper focuses on the control of Android platforms. This is an open platform that allows to use other technologies (also open). In addition, Android platform allow the development of new ideas easily and test them with a set of open standards [5].

The prototype generated as implementation of the proposed architecture will be provided also as free software. According to data released by Nielsen [6], half of the consumers who recently purchased a smartphone chose an Android smartphone.

III. OBJECTIVE

The main intent of this android project is to mitigate the farmer Efforts. Our project is about make this control system efficient and dynamic. As the name suggested the Multi-language based android apps is for controlling the motor from remote place, look over its operating conditions, and easy to understand for farmer and get feedback from the motor itself. Our android project target is to control the motor from distance place by mobile DTMF tone and also get feedback by SMS while it is in ON or OFF condition and also scheduler give for motor ON or OFF by user. Form this android Project we also ensure the safe operation of the motor by detecting the voltage source and ensure feedback from system while it is completed or below voltage. Again we also get these feedbacks by SMS.

IV. PROBLEM STATEMENT

We did survey of farms which are having induction motor in it .We ask the farmers their problem which they faced while working in farm. The main problem of the farmer is proper operating of motor.

- The motor can damage by over/under voltage & current.
- If the dry sensing condition is not sense then also the motor can damage.
- Load shedding
- Distance between farm & farmer's house.

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V.   EXISTING SYSTM

According to these conditions we have a tendency to search an answer of this drawback. Then we have a tendency to come upon the DAZZLE TECHNOLOGIES model.

All induction motors need a starter to start out the motor. The starter is employed in line with the motor ratings. Wireless 3 part induction motor device will begin the motor from long distance while not exploitation wire. This starter works with a mobile device. During this system a mobile works as a proof transmitter and different mobile is signal receiver. The mobile transmitter calls to receiver mobile. The decision is mechanically received by receiving mobile. Once a numeric button is ironed throughout this point the transmitter mobile send a DTMF signal, this signal is received by receiving mobile and motor is started. And to prevent the motor different such as button is ironed and motor get stopped.Earlier we tend to square measure trying into the face of future once we square measure talked concerning automatic devices that may do something on instigation of a controller, however nowadays it's become a reality. an automatic device will replace smart quantity of human operating force. All induction motors needs a starter to beginning the motor. The starter is employed in line with the motor ratings. Wireless 3 part induction motor device will begin the motor from long distance while not victimization wire. This starter works with a mobile device. During this system a mobile works as a symptom transmitter and alternative mobile is signal receiver. The mobile transmitter calls to receiver mobile. the decision is mechanically received by receiving mobile. once a numeric button is ironed throughout this point the transmitter mobile send a DTMF signals, this signals is received by receiving mobile and motor start. And to prevent the motor alternative specific button is ironed and motor get stopped. This starter contains a dominant circuit that permits change ON and OFF of Trials. It is accustomed switch motor from any distance. This circuit relies on the DTMF controller circuit. DTMF means that Dual tone multiple frequency. The DTMF signals on mobile square measure used as management signals.

VI.   PROPOSED SYSTEM

Text from your computer and tablet - just like on your smartphone! sms is synced with your phone and uses your current Android phone number.

After installing Application on Android phone you can Perform Operation Like Motor ON/OFF,Voltage HIGH/LOW, To Set Motor Current, To Change Password, To Get Motor Status on Site, To Load Factory Setting

VII.   ACTIVITY FLOW
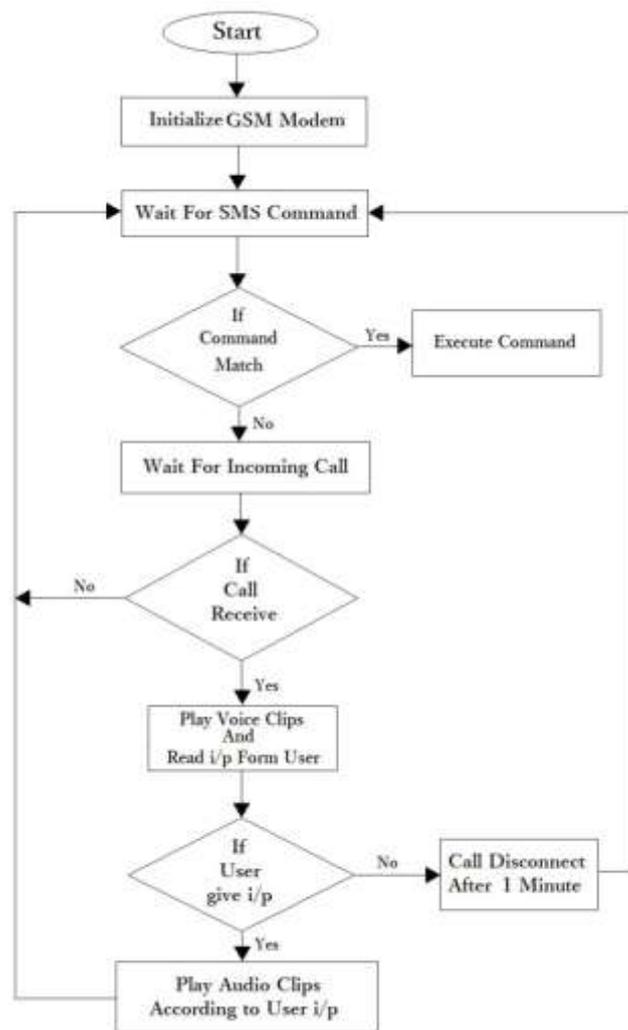
VIII.   ALGORITHM

1. START
2. INITIALIZE TIMER, INTERRUPT, COUNTER,GSM MODEM
3. READ ADC & CALCULATE R, Y, B VOLTAGE & CURRENT
4. IF STARTOR IS IN AUTO MODE GIVE THE CALL TO THE REGISTERED NO
5. WAIT FOR COMMAND
6. IF*XXXXA<10-DIGIT MOBILE NO.># THEN ADD REGISTERED MOBILE NUMBER, IF NOT GO TO NEXT.
7. IF*XXXXD<10-DIGIT MOBILE NO.>#THEN DELETE REGISTERED MOBILE NUMBER, IF NOT GO TO NEXT.
8. IF *XXXXLST# THEN TO GET REGISTERED MOBILE NUMBER LIST, IF NOT GO TO NEXT.
9. IF *XXXXON# THEN START MOTOR, IF NOT GO TO NEXT.
10. IF*XXXXOFF# THEN STOP MOTOR, IF NOT GO TO NEXT.

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11. IF *XXXXSPC# THEN SET MOTOR CURRENT IF NOT GO TO NEXT

12. CHECK ALL COMMAND GIVEN IN THE FOLLOWING TABLE

13. STOP

IX. MATHEMATICAL MODULE

System S=Android Application

System S={S', V, B}

S' = {SMS}

V= {Voice}

B = Button

I 1 = MB =mobile no

I 2 = Command =*1234ON#

[1] I 1 = {'Persons no'}

O 1 = {Phone no , Password }

[2] I 2 = {Commands}

β 2 → Cal

cal={Voice clips }

B={no,1,2,3,4,5,6,7,8,9}

Command={*1234ON#,*1234OFF#}

X. MODULES

a)GSM Modem QUECTL M95:

   i. In this module we send SMS service and call receive.This unit communication between Renesas and SIM card.

   ii. This is ultra low power GSM module.It consume only 1.5 mA current.

   iii. Its required only 3.3 volt DC power supply.

b)Voice OTP AP 89320:

   i. This IC stored 320 sec audio clips.

   ii. We store 24 regional languages audio clips so farmer can easily understand system.

   iii. This IC is used when farmer called to unit. Eg.IVRS(Interactive Voice Response System)

XI. CONCLUSION

The project has been designed to develop a parameter control system for AC motor .It is possible to demonstrate control of a AC motor using a microcontroller through remotely operated commands to it by touch screen based user friendly GUI on any smart phone with Android applications. This project can be enhanced by using higher power electronic devices to operate high capacity AC motors. Regenerative braking for optimizing the power.

XII. REFERENCES

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Prasad S. Kautkaris currently a student of Brahma Valley College of Engineering And Research Institute From the University of SavitribaiPhule Pune. His main research interests include: a)Design and implementation of Android applications for mobile devices, b)C++, c)Web designing

Kiran S. Kandalkaris currently a student of Brahma Valley College of Engineering And Research Institute From the Universityof SavitribaiPhule Pune. His main research interests include: a) Database, b)Software Testing.

Akash R. Rautiscurrently a student of Brahma Valley College of Engineering And Research Institute From the University of SavitribaiPhule Pune. His main research interests include: a) Innovation in Computer Networking and Technology ,
b) Design and implementation of applications for Embedded system.

Vaibhav N. Baviskaris currently a student of Brahma Valley College of Engineering And Research Institute From the Universityof SavitribaiPhule Pune. His main research interests include: a) Innovation in security mechanisms and tools,
 b) software developer.

Prof.VivekD.Badgujaris working as a professor at Brahma Valley College of Engineering and Research Institute,Nashik.Under the University of SavitribaiPhulePune.His areas of interest includes Software Engineering and Advanced Database.