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GSM BASED TRAIN RESERVATION SYSTEM

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ABSTRACT:

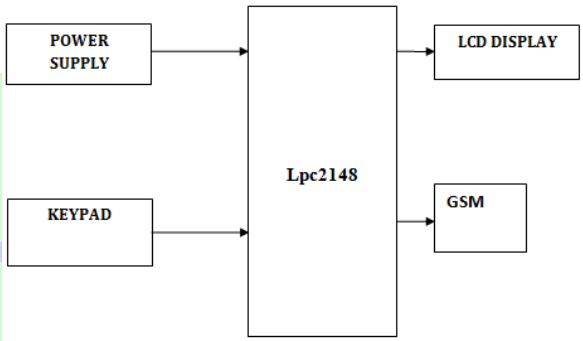
This GSM based train reservation system is a unique and advanced concept through which we can book the railway tickets through your mobile phone by a simple SMS. The project is implemented by using advanced processor ARM7TDMI which is a 32 bit microprocessor; GSM is responsible for all the mobile phone services. In this project we are implementing Gsm based train reservation system .The user have to send his USERID to lpc2148 through GSM . the related password have to entered in lpc2148 keypad. The source and destination have to entered in Arm7 . In accordance with that, money will reduced .Just LCD displaying is used for money reduction.

Keywords: Gsm, Arm7,Keypad.

INTRODUCTION:

Due to the drastic changes in technology in the last decade, so many advancements were introduced in transport departments. The reservation can be done now through E-Seva centers, internet and even through mobile phones. GSM operates through SMSs and is the link between ARM processor and centralized unit. ARM7TDMI is an advanced version of microprocessors and forms the heart of the system. Our project aims to implement the train reservation system through mobile phones. GSM modem can be controlled by standard set of AT (Attention) commands. These commands can be used to control majority of the functions of GSM modem. In this project we are using LPC2148. The LPC2148 are based on a 16/32 bit ARM7TDMI-S™ CPU with real-time emulation and embedded trace support, together with 128/512 kilobytes of embedded high speed flash memory. With a wide range of serial communications interfaces, they are also very well suited for communication gateways, protocol converters and embedded soft modems as well as many other general-purpose applications. In this project by sending a simple SMS we can get the status of vacant seats (A/c or non A/c). From the central system we get a reply status of vacant seats on a particular day. After conforming, we can book the ticket by sending a 16 pin credit card number to the reservation system. As a conformation, we can get the M-Ticket (Mobile Ticket) to your mobile phone; just we have to carry the ticket with us for travelling.

BLOCK DIAGRAM:



ARM PROCESSOR:

The LPC2141/2/4/6/8 microcontrollers are based on a 32/16 bit ARM7TDMI-S CPU with real-time emulation and embedded trace support, that combines the microcontroller with embedded high speed flash memory ranging from 32 kB to 512 kB. A 128-bit wide memory interface and unique accelerator architecture enable 32-bit code execution at the maximum clock rate.

FEATURES OF ARM PROCESSOR:

• 16/32-bit ARM7TDMI-S microcontroller in a tiny LQFP64 package.

• 8 to 40 kB of on-chip static RAM and 32 to 512 kB of on-chip flash program memory.

128 bit wide interface/accelerator enables high speed 60 MHz operation.

• In-System/In-Application Programming (ISP/IAP) via on-chip boot-loader software.

Single flash sector or full chip erase in 400 ms and programming of 256 bytes in 1 ms.

• Embedded ICE RT and Embedded Trace interfaces offer real-time debugging with the

on-chip Real Monitor software and high speed tracing of instruction execution.

• Single 10-bit D/A converter provides variable analog output.

• Two 32-bit timers/external event counters (with four capture and four compare

channels each), PWM unit (six outputs) and watchdog.

• Low power real-time clock with independent power and dedicated 32 kHz clock input.

KEYPAD:

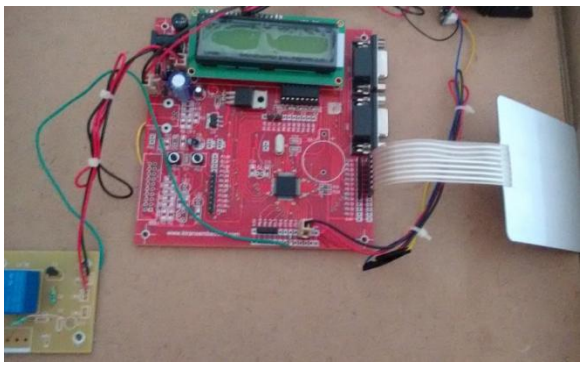
A numeric keypad, or numberpad for short, is the small, palm-sized, seventeen key section of a computer keyboard, usually on the very far right. The numeric keypad features digits 0 to 9, addition (+), subtraction (-), multiplication (*) and division (/) symbols, a decimal point (.) and Num Lock and Enter keys. Laptop keyboards often do not have a numberpad , but may provide numberpad input by holding a modifier key (typically lapelled "Fn") and operating keys on the standard keyboard. Particularly large laptops (typically those with a 17 inch screen or larger) may have space for a real numberpad , and many companies sell separate numberpad which connect to the host laptop by a USB connection.

GSM MODEM:

This GSM Modem can accept any GSM network operator SIM card and act just like a mobile phone with its own unique phone number. Advantage of using this modem will be that you can use its RS232 port to communicate and develop embedded applications. Applications like SMS Control, data transfer, remote control and logging can be developed easily. The modem can either be connected to PC serial port directly or to any microcontroller. It can be used to send and receive SMS or make/receive voice calls. It can also be used in GPRS mode to connect to internet and do many applications for data logging and control. In GPRS mode you can also connect to any remote FTP server and upload files for data logging.

This GSM modem is a highly flexible plug and play quad band SIM900 GSM modem for direct and easy integration to RS232 applications. Supports features like Voice, SMS, Data/Fax, GPRS and integrated TCP/IP stack.

RESULT:



CONCLUSION:

The objectives of this project have been achieved. The hassle in searching for available seats slots has been completely eliminated by reserving the slots beforehand via the SMS system and . These system helps users reduce the wasting time of search seat slot and also improve the ticket utilization.

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