

IDOS

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Intelligent Door Opening System

Abstract

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The Problem:

- In nuclear families, where all members have to leave the house for work; they are unable to hire help, etc. because of the long and early shifts.
- Also, if any guests come to their house they are not present to receive them.

Our Solution:

- We aim to design and develop an intelligent home entry system.
- It will allow the user to grant entry to any visitor to his house remotely after viewing the visitor's picture.
- Thus, people can leave their house without any worries.

Specifications

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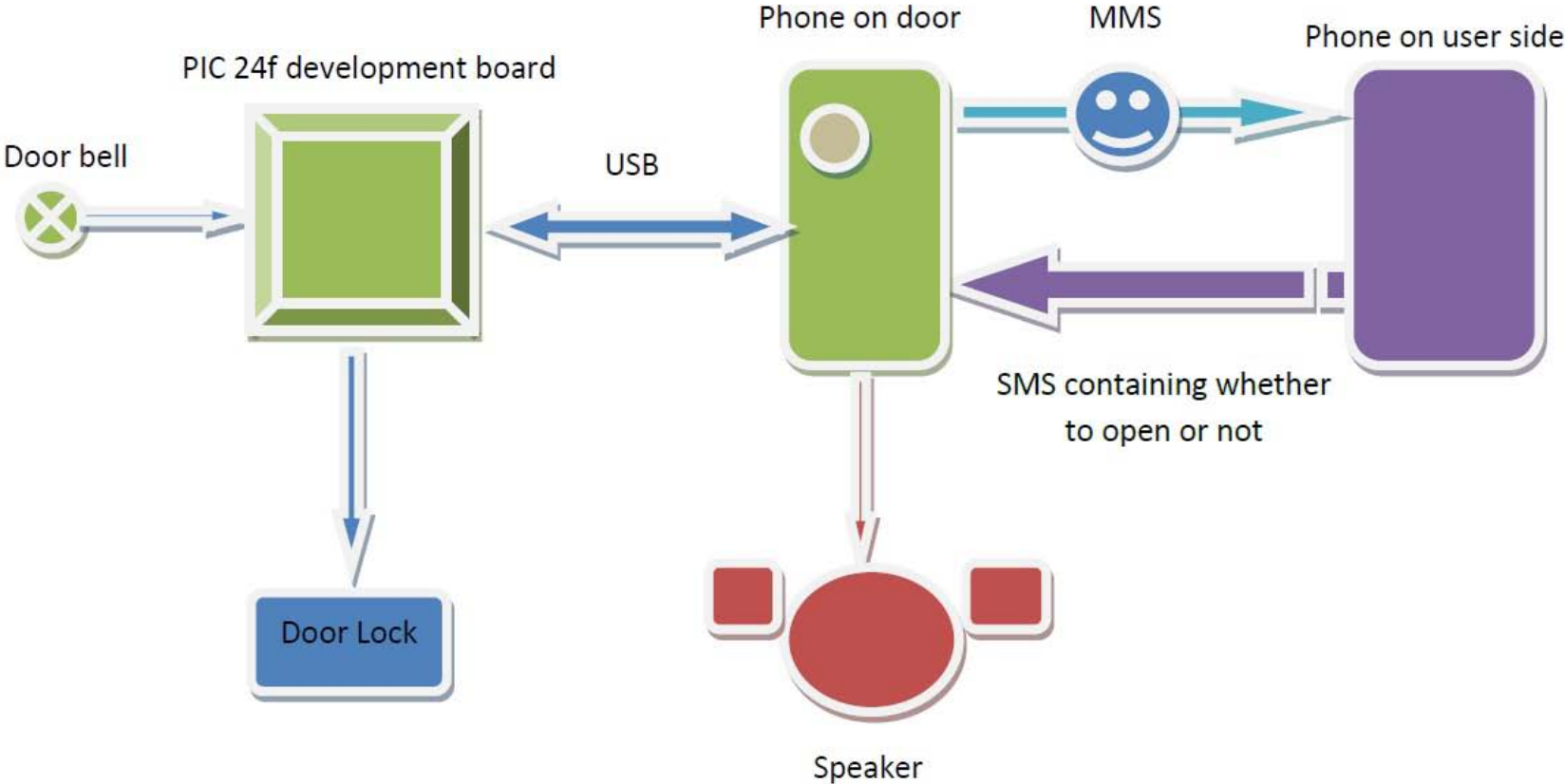
- The main processor in our device is a pic microcontroller that is connected to a doorbell and an electronic lock. This whole assembly is mounted on the door. The user is required to connect a cell phone with this microcontroller using a usb data cable.
- We will also be developing a Java Mobile application that will be installed on the user's cellphone and also on the phone connected with the microcontroller.

Methodology

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- When a visitor presses the door bell, the microcontroller will signal the cell phone to take a picture of the person and send this as an mms to the user's cell phone. The user can then review this mms using our application and then decide if the door is to be opened or not. The response is sent back to the device as sms. The microcontroller then interprets this and opens the door.

Block Diagram



Salient Features

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- Based on existing cellphone infrastructure.
- Low power requirements. Pic can be put to sleep mode until bell is activated.
- Any cell phone can be used.
- Easy to use User Interface.

Major Components

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□ Microcontroller :

We will be using Pic24f series microcontroller and MPLAB IDE for microcontroller coding and compilation.

We have chosen the pic microcontroller because its cheap and is easier to program using C.

For our Project, we require the pic to send data to mobile using USB which requires USB host functionality. Only pic 24f series and above support this feature.

□ PIC development board/custom PCB

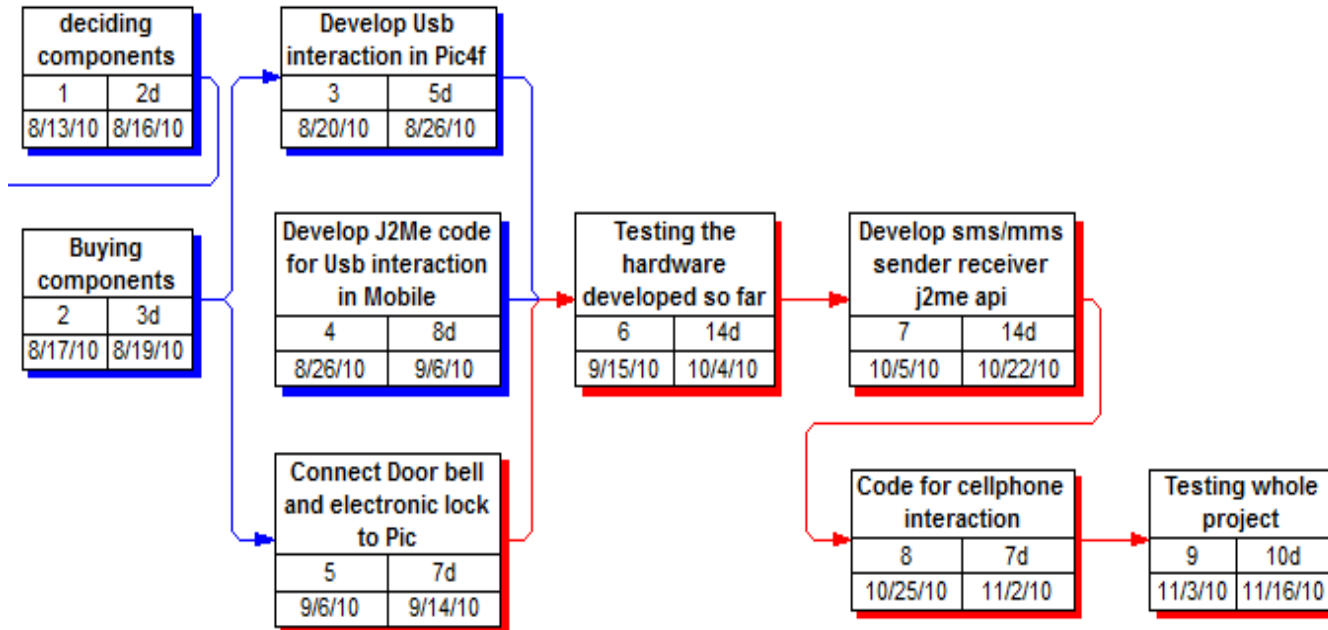
- **Java Application:**

Developed using J2ME/MIDP2. We have decided to develop the app in Java because of Java's inherent platform independence. Therefore, the user can use *any* modern cellphone supporting java.

- Electronic lock
- Electronic door bell

Pert Chart

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Possible Extensions

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- Installation of a speaker at the door to inform the visitor.
- Possibility of connecting a call between the user and the visitor so that the user can give instructions, say Hi, etc.
- Integration of the system with multiple doors at the house, so the user can grant selective access to various parts of the house to the visitor.

THANK YOU