iDOS

Intelligent Door Opening System

CSP315 Project

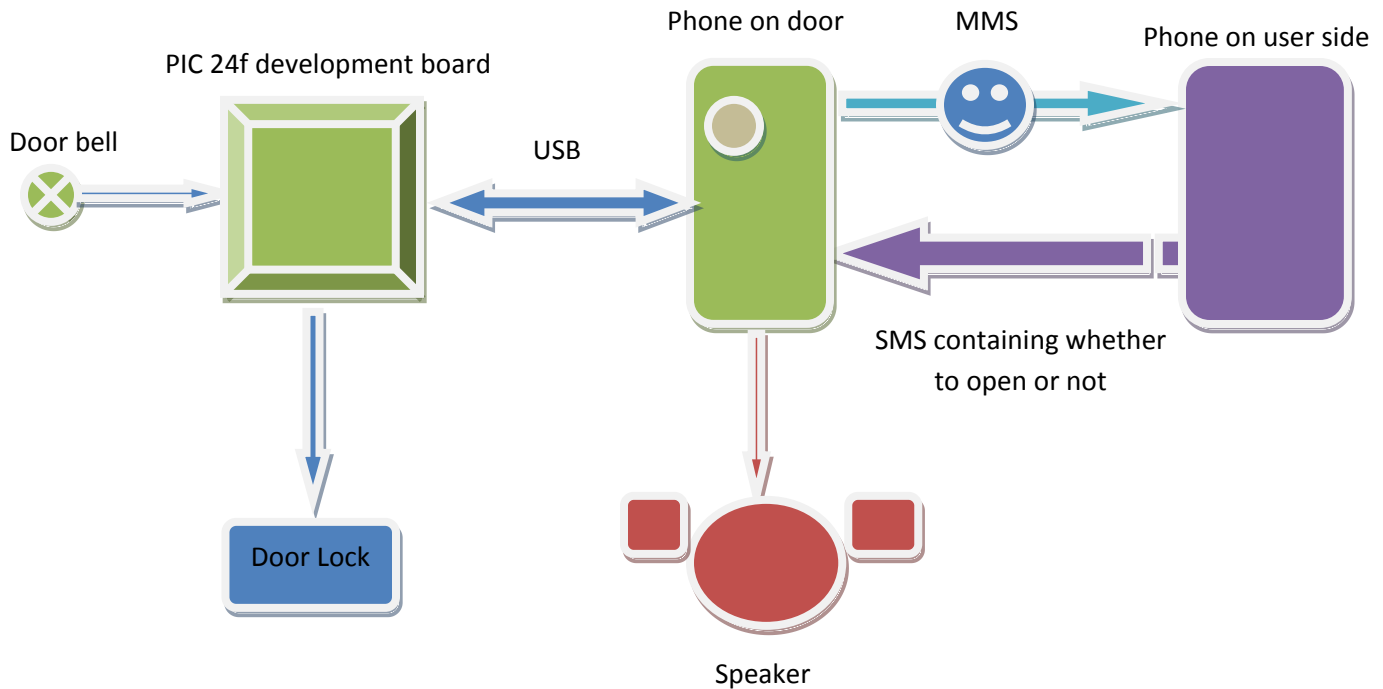# Index

Specifications

Abstract:

We aim to design and develop an intelligent home entry system. It allows the user to grant entry to any visitor to his house remotely after viewing the visitor's picture. A cellphone supporting a camera and mms functionality is to be used with our device.

The main processor 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.

Home	Mobile
Electronic doorbell	Cellphone supporting sms, Java Runtime and mms
Pic24f microcontroller	
Electronic lock	
A cellphone with camera, Java runtime and mms functionality	

Block Diagram

Door bell

PIC 24f development board

USB

Phone on door

MMS

Phone on user side

SMS containing whether to open or not

Door Lock

Speaker

Methodology

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 a sms. The microcontroller then interprets this and opens the door.

Major Components

1. **<u>Microcontroller</u>** :

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

For our Project we require pic to send data to mobile using USB which require a USB host. Only pic 24f and above family have this feature.

2. **<u>Java Application</u>**:

Developed using J2ME/MIDP 2.0. 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.

3. Electronic lock
4. Electronic door bell

Time line

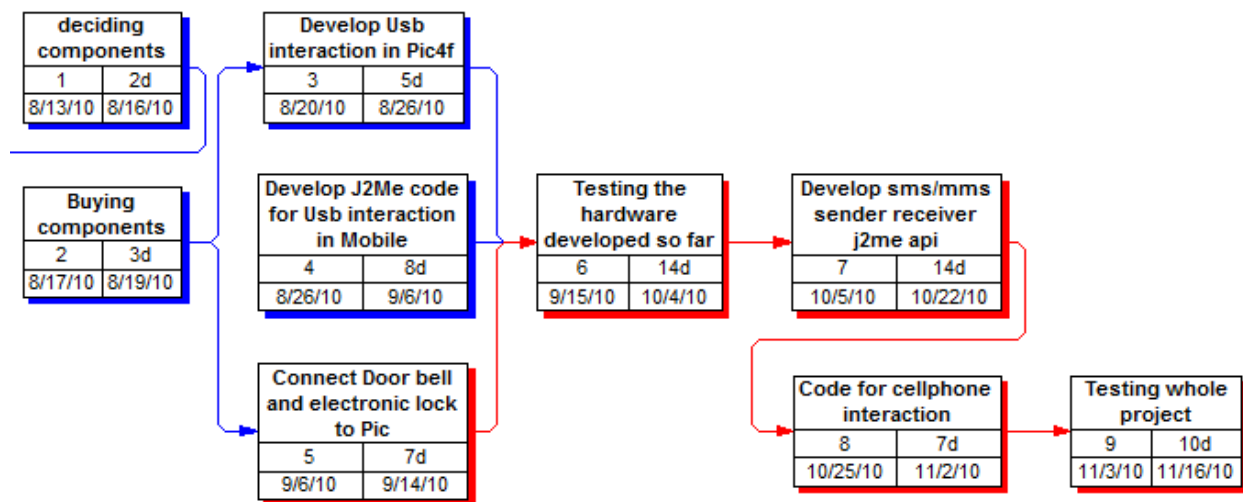| Month / Week	Week 1	Week 2	Week 3	Week 4
August	Research Project Finalised	More Research Specifications Report Components decided	Order components Develop usb interaction hardware	Connect door bell and lock Test components
September	More hardware testing Pic code for processing and interconnection		Figure out J2ME API Develop sms and mms sender and receiver	
October	Develop sms and mms sender and receiver Test sms/mms		Code for cellphone interaction	
November	Test Cellphone/ microcontroller interaction		Hardware Testing Optimization Final prototype	

Pert Chart

deciding components		
1	2d	
8/13/10	8/16/10	

Develop Usb interaction in Pic4f		
3	5d	
8/20/10	8/26/10	

Buying components		
2	3d	
8/17/10	8/19/10	

Develop J2Me code for Usb interaction in Mobile		
4	8d	
8/26/10	9/6/10	

Testing the hardware developed so far		
6	14d	
9/15/10	10/4/10	

Develop sms/mms sender receiver j2me api		
7	14d	
10/5/10	10/22/10	

Connect Door bell and electronic lock to Pic		
5	7d	
9/6/10	9/14/10	

Code for cellphone interaction		
8	7d	
10/25/10	11/2/10	

Testing whole project		
9	10d	
11/3/10	11/16/10	

Figure : Pert Chart

Task Assignment

Hardware

Interaction between microcontroller and mobile and other devices	Ravi Kant Mittal Gaurav Singh
pic programming	Gaurav Mahajan

Software

Sms/mms controller Java App	Ankur Dahiya
Usb Host controller Website maintainer	Saurav Mahajan
Camera Controller	Gaurav Singh

Web Link

http://www.sites.google.com/site/idos