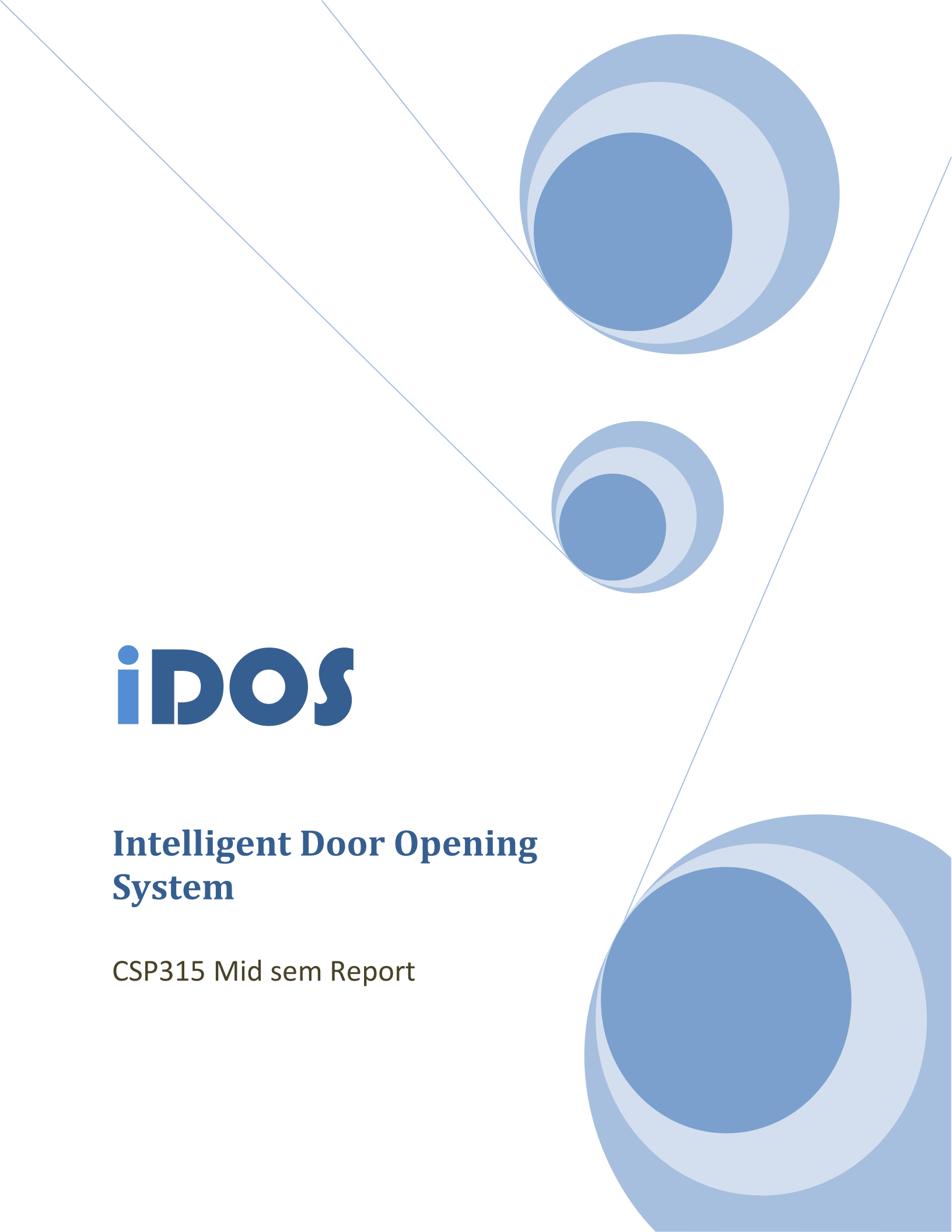


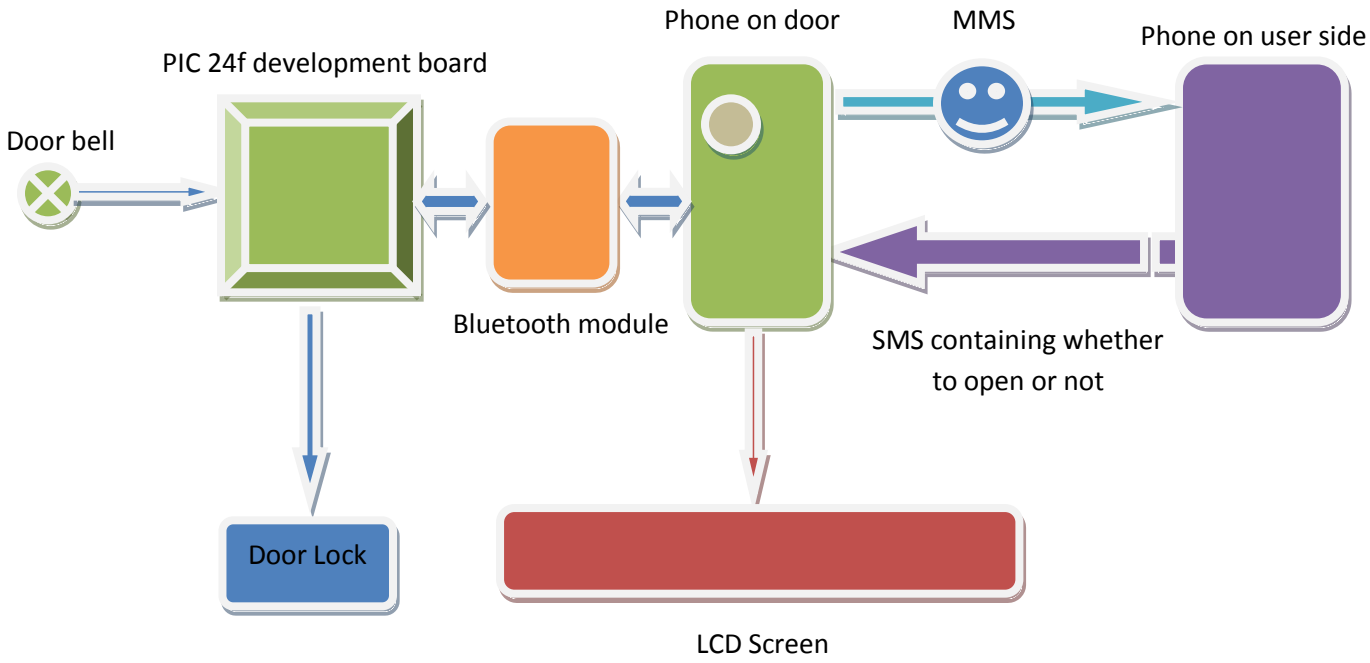
Intelligent Door Opening System

CSP315 Mid sem Report

Objective

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.

Block Diagram



Approach and design

The main processor is a pic18f 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 Bluetooth communication.

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.

Problems encountered

Problem with USB communication: First we tried making microcontroller as host and mobile as slave. But we faced problem while sending data from mobile to microcontroller as a slave can't make a session or wake up host when host is not in session. And other problem was that while a session is made phone can't access its data memory so it can't send information to microcontroller.

Solution: We are using a Bluetooth module which is connected to microcontroller. Now any time mobile or microcontroller can transfer information to each other.

Status

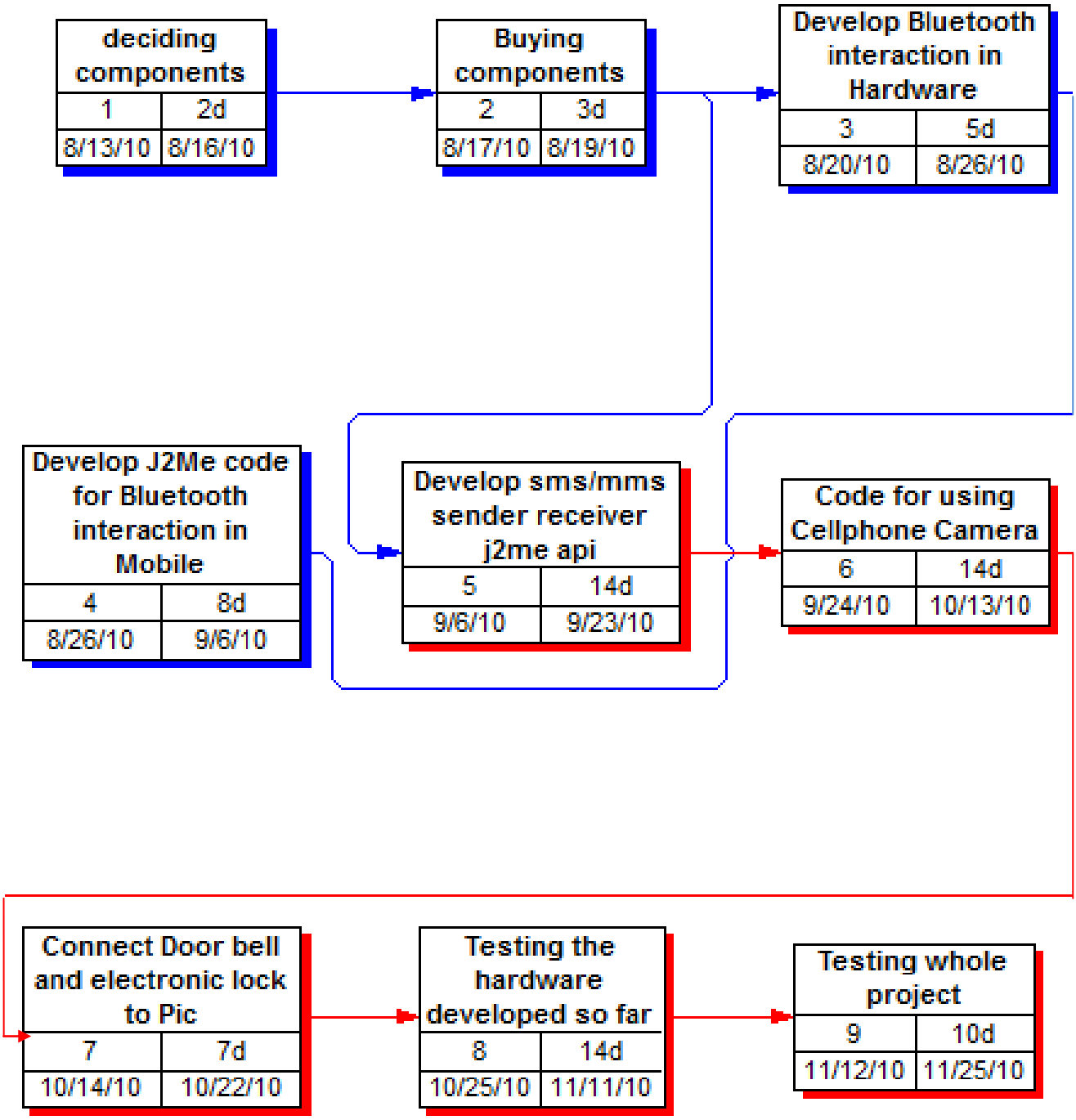
Hardware:

1. Bluetooth module: We have learned how to configure and use a Bluetooth module. We have incorporated the module with our microcontroller board. We have also demonstrated its use by transferring data to and from a pc.
2. Microcontroller: We have setup a microcontroller board along with a pic18f4550 microcontroller. We have also connected a lcd screen with it.

Software:

1. Sms/Mms Interface: We have developed a J2ME midlet and added code for sms/mms messaging.
2. Bluetooth Communication: We have also developed a Bluetooth interface for the application. We have tested this by connecting our application with the pic board via Bluetooth module.
3. Camera Interface: We have also developed an interface for controlling the camera on the mobile phone.

Plan and time line



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 Bluetooth interaction hardware	Figure out J2ME API
September	More hardware testing Pic code for processing and interconnection		Develop J2ME app to capture image using mobile phone's camera	
October	Develop sms and mms sender and receiver Test sms/mms		Connect door bell and lock Test components	
November	Test Cellphone/ microcontroller interaction		Hardware Testing Optimization Final prototype	

Web Link

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

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