**KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY**

**LAB REPORT:** DOOR LOCK SECURITY SYSTEM

CSE 3103: Peripherals and Interfacing

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**Door Lock Security System**

The project is about securing door lock in office/home which is automated through bulk SMS service, RFID tag reading and live camera streaming.

**Applications of Door Lock Security System**

1. The door lock security system can be used in any building to safeguard and check who is entering or trying to enter in the building.
2. It can be used in personal home, hospitals, institutions, offices etc.

**Hardware components required:**

* Raspberry Pi 3 B+
* RFID module MFRC522
* RFID tag
* 12V electronic door lock
* Door lock driver
* Power Adapter / Battery
* Internet
* Bulk SMS service
* Breadboard
* Connecting wires

**Circuit Diagram:**

**Circuit diagram explanation:**

Analog output (A0): Real-time output voltage signal on the thermal resistance.

* **RFID module MFRC-522:** The module is used to identify any tag placed on it.
* **RFID tag:** The tag stores information, and the information is stored in the access-log. If the information matches with the information stored in the access-list then the lock is opened.
* **12V door lock:** The lock is opened when a 12V passes through it.
* **Door lock driver:** The door lock driver makes the door lock compatible with raspberry pi
* **Bulk SMS service:** The SMS service is used to send SMS to the admin number to inform about any intrusion
* **Camera:** A camera is kept for live streaming

**Code for Door Lock Security System:**

Here is our program to monitor Fire Accident and Protection system that should happen after a fire accident:

#!usr/bin/env python

import sys

import MySQLdb

from threading import Thread

import threading

import time

import RPi.GPIO as GPIO

import json

from random import randint

from evdev import InputDevice

from select import select

import SimpleMFRC522

GPIO.setmode(GPIO.BCM)

GPIO.setwarnings(False)

GPIO.setup(13,GPIO.OUT)

class doorlock:

global dbHost

global dbName

global dbUser

global dbPass

dbHost = 'localhost'

dbName = 'mysql'

dbUser = 'root'

dbPass = 'raspberry'

def \_\_init\_\_(self):

try:

while 1:

self.listen\_rfid()

except KeyboardInterrupt:

pass

def returnToIdle\_fromAccessGranted(self):

GPIO.output(13,GPIO.LOW)

def listen\_rfid(self):

reader = SimpleMFRC522.SimpleMFRC522()

print("Please place your rfid")

try:

id, text = reader.read()

dbConnection = MySQLdb.connect(host=dbHost, user=dbUser$

cur = dbConnection.cursor(MySQLdb.cursors.DictCursor)

cur.execute("SELECT \* FROM access\_list WHERE rfid\_code $

if cur.rowcount !=1:

print("Access Denied")

cur.execute("INSERT INTO access\_log SET Name = $

dbConnection.commit()

time.sleep(3)

self.returnToIdle\_fromAccessGranted()

else:

cur.execute("INSERT INTO access\_log SET Name = $

dbConnection.commit()

print("Access Granted, now an sms is sent")

GPIO.output(13,GPIO.HIGH)

dbConnection.close()

time.sleep(5)

self.returnToIdle\_fromAccessGranted()

finally:

GPIO.cleanup()

if \_\_name\_\_ == '\_\_main\_\_':

w = doorlock()

**Important Aspects of the Program:**

When we developed the project ,the one important aspect we kept in mind is the real world scenario. An invasion can occur any time (24/7). This means our system must constantly monitor fire 24/7 all the month and year. In the program, we loop with while 1, and escape the loop if keyboard interrupt occurs function has the necessary conditions to check fire.