

# PASSWORD BASED SECURITY SYSTEM FOR NON-SMOKING AREA

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## ABSTRACT

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In the present era, smoking has become commonly among adults and even teenagers. Smoking is a bad habit and brings disadvantages to health. The project “Password Based Security System for Non-smoking Area” is designed and applied in restricted area to cigarette smoke such as hospital, hall, library and etc. Hall is chosen to implement the project of ‘Password Based Security System’. The project aims are check the password entered and detect the presence of cigarette smoke in the air before the user enters the hall. The status of accessible is shown on the 16×8 LED dot matrixes display.

The technique of password access is using 4×4 keypad to allow the user to enter the password. If the password enters correctly, status of correct password is showing on the dot matrixes and allows the user proceeds into cigarette smoke sensing. If the password enters wrongly, the microcontroller activates alarm and shows the status of incorrect password on the dot matrixes and rejects the user from cigarette smoke sensing. The technique of detecting the cigarette smoke was accomplished by converting the analogue output voltage of cigarette smoke sensor into digital form before being processed by PIC16F887A microcontroller. This can be done easily by using the 10-bit ADC module in the microcontroller. When there is no cigarette smoke detected, the microcontroller sends the status of accessible to the dot matrixes and activates the motor driver to open the door which allows user to enter. However, if the password enters correctly but there is cigarette smoke detected, the users rejects from entering into the hall and displays the status of accessible to the dot matrixes and activate the alarm. Additional feature is adding to the system that ensures there is only a person enters the hall after the door is opened.

The project report starts with introduction which includes aims, objective and project overview to explain briefly on the block diagram how the whole system is working. Followed by the literature review, the theories of main components used are explained. Hardware and software designed in this project are explained deeply in the methodology part. Lastly, result shows the circuit works successfully, discussion and conclusion of the project is established.