

Ahsanullah University of Science & Technology  
Department of Computer Science & Engineering  
Semester Fall 2019



**CSE 3216**  
**Microcontroller Based System Design Lab**

**Project Proposal**

**Project Name:** *Anti Burglar Home Security System*

**Submitted To**

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# Objective

When we look at our family, and our home, we know we want them to be safe, always out of harm's way. When we leave for work, we expect to come back to a smiling family, and to a home that is secure. But as they say, hope is not a strategy. The growing crime rates across cities reflect the bitter reality. Many people overlook, ignore, and underestimate the need of taking appropriate home security measures. A burglary or theft can lead to devastating consequences, both emotionally and financially. The objective of this project is to provide home security by password protection and detecting intruders using PIR sensor.

## Social Values

The biggest reason a homeowner should consider installing a home security system is that it offers protection to family members from intruders. According to "Securing Home and Business" by Simon Hakim/Erwin Blackstone, homes without security systems are 2.7 times more likely to be targeted by a burglar. This indicates that the mere presence of an alarm system is enough in most cases to protect the home and its occupants from break-in. In some cases, burglars may still target a home either knowingly or unknowingly when members of the family are inside. For the burglar who enters the home expecting it to be empty, finding members of the family inside can cause enough shock and panic to facilitate aggressive behavior. Having a security system in place often provides family members with enough warning to get to a safe location in our outside the home while the alarm system dispatches local authorities. For burglars that enter a home knowing that family members are inside, their intentions are often much more malicious and the home alarm system again serves as an early warning system.

## Required Components

These following parts and tools are required for building this project

- Arduino Mega 2560 R3
- LCD Display(LM016L)
- Keypad(4\*3)
- Gas Sensor(MQ-2)

- PIR Sensor
- Motor-PWMSERVO
- Buzzer 5v active
- Rubber Wire
- Wire(male to male, male to female, female to female)
- Lipo Nano 1100mAh
- Lipo Battery Charger
- Potentiometer
- Double Connection of/Off Switch

## Working Procedure

The basic components that react to the input are

- Servo motor  
it controls the movement of door to be opened or closed
- LCD display  
To show the message of current status
- Keypad  
To provide password for locking door.
- Gas Sensor  
Detects gas leakage
- PIR sensor  
Senses any movement of unwanted intruder
- Buzzer  
Alarm rings for the consequence of unwanted event.

## Estimated budget

Equipment	Quantity	Budget(Tk)
Arduino Mega 2560 R3	1	920
LCD Display(LM016L)	2	318
Keypad(4*3)	1	95
Gas Sensor(MQ-2)	2	240
PIR Sensor	1	88
Motor-PWMSERVO	2	350
Buzzer 5v active	2	30
Rubber Wire	3	600
Wire(male to male, male to female, female to female)	as required	200
Lipo Nano 1100mAh	1	1200
Lipo Battery Charger	1	500
Potentiometer	2	60
Double connection on/off switch	1	100
<b>Total</b>		<b>4701</b>

## Conclusion

The sense of security and peace you gain with an alarm system is perhaps the greatest benefit of all. Next to being safe, the confidence of feeling safe will help you be a more productive, healthy, and focused person. When the value of security is elevated to the top of the collective priorities, it becomes a meta-frame, a reference point in relation to which other aspects of social life are articulated and organized. Adding a security system to our home gives us an extra layer of defense against any potential intruders