PROJECT PROPOSAL

Advanced Home Security System

Broad Subject Area	**Engineering Science**
Specialization	**Mobile Computing**
Title	**Advanced Home Security System**

Team Members — In alphabetical order:-

Debayan De	+91 8420 650 826	rudra.nil.basu.1996@gmail.com
Rohit Das	+91 8961 452 125	rohit.das950@gmail.com
Rudra Nil Basu	+91 8420 650 826	rudra.nil.basu.1996@gmail.com
Sumitra Chowdhury	+91 8017 022 456	chowdhury9995@gmail.com

Project Details

Origin of Proposal

With the advent and advancement of technology, our primitive lives have changed fast. Our lifestyle has become more comfortable, thanks to the various arrays of gadgets and devices for communication, education, etc. But just like there are two sides of the same coin, technology has its shortcomings too. Crimes have existed in the past, and have only aggravated in nature. Now, with technology, criminals have found a new breath of life. So, technology and advanced gadgetry is our only weapon and protection against this misuse and abuse of scientific progress.

Our project is aimed at doing just that. Advanced Home Security and Armament System, or AHSAS in short, was planned keeping in mind the various problems people face because of the most common reasons for hiring and/or installing hi-tech security-home invasions. Breaking into homes keep claiming victims all the time. This system is all about trying to alleviate the situation and bring it under control. It is mainly aimed to work passively in case of an unauthorized intrusion. It is also created to protect any member trapped inside the house with the intruder. Live video footages will be taken, thus keeping track of the intruder. Even if someone manages to enter the house without setting off the alarm, door locks remotely operable by the home-owner can initiate lockdown, call the police and thus help law-enforcers to do their job.

The system will enable the user to remotely access the features, live footage and door-locking mechanisms along with the map of the house via an app on their mobile phones. It will also have an option of whether alerting the cops, firemen, paramedics or just call a close relative. People trapped inside the home during the intrusion can also call for help using a panic button present nearby in their current room.

Objectives

- To detect unnatural movements of intruders and set off an alarm.
- Activating/Deactivating the security system via a mobile phone
- Control of the lights, doors and windows of the house via smartphone.
- Send live footages of intrusion and alert the home-owner/s via mobile phone
- To alert cops, firemen, etc. in case of an emergency.
- To maintain status quo of members trapped inside the home during the intrusion, if any.

Methodology

- Creating a detection system using ***Matlab***
- Installing live-feed cameras for live footage of intrusion.
- Installing proximity sensors and motion trackers to track movement of intruders.
- Create a connection between an android device and the arduino board to control the various equipments of the house.

Budget For Equipment

Table 1: Budget for Equipment

Sl No	Name of the equipment	Quantity	Estimated cost(INR)	Justification
1	Arduino Mega 2560	1	1500	Controller
2	SainSmart LCD Module For Arduino 20 X 4	1	660	Display
3	Real Time Clock DS1307 I2C AT24C32 Module	1	250	———-
4	Magnetic Door Window Contact Reed Switch	1	588	To detect opening of door/window
5	Breadboard	1	800	Building the circuit
6	Breadboard jumper wires	1	310	Building the circuit
7	Red LED	2	200*2=400	Danger signal
8	Green LED	2	200*2=400	Safe signal
9	220 ohms resistor	—	—	—-
10	Servo	4	600*4=2400	Moving Doors and Window of Room
11	Vivitar Recording camera	1	4500	Record the events
12	D-Link IP camera	2	3000*2=6000	Real time broadcast of rooms
13	10x 40-Pin Male Header 0.1” (2.54mm)	1	240	—
14	3 Colour RGB SMD LED Module 5050 full color	3	285*3=860	Display colors based on situation
15	Adjust IR Pyroelectric Infrared IR PIR Motion Sensor	2	1600*2=3200	Motion Detection in the room
16	Active Buzzer Alarm Module Sensor Beep	2	1500*2=3000	To raise alarm
17	5V Four 4 Channel Relay Module With opt coupler	1	360	—
18	4 x 4 Matrix Array 12 Key Membrane Switch Keypad	1	210	—
19	4.7k Potential meter	1	—	—
20	Form board	1	360	—
Total			123456	

Plan of Work The Plan of work is shown in the table below:

Place and Date Kolkata

Signature

Table 2: Plan of Work

Work	Time
PH1	First one month
PH2	2 months
PH3	2 months
PH4	1 month