

# Abstract for summer project-

## Project Description

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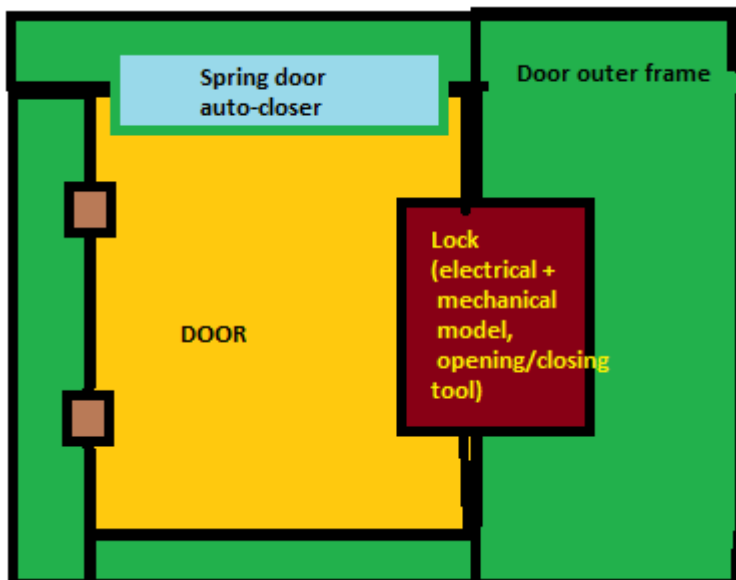
Project Name – **SuperLock**

(Slot Preference – 1)

Project Member :-

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This project presents a prototype security door lock that can be remotely controlled by a GSM phone. It can be controlled from anywhere anytime using the mobile device. Mobile has to send a text message as input for opening the door lock. Project is look like -



It has spring door auto-closer, that automatically set the door to locking position. The project consist of door frame and small door with installed door lock. If it is completed in less than 35 days, then we also tried for motion detector as theft alert directly to mobile.

Basically we are trying to make lock which will open and get closed via sms .for this we are using gsm 900 module to do receive sms and transfer it to arduino which will be programmed to do a specific function either close or open .we are also thinking of putting in some sensors for lock to be more safe and anti thief

## Motivation

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Security describes protection of life and property. There are doors to keep people out, Key locks and chains reinforce the mode of security, but some people also have habit losing keys. Hence, we are introducing a GSM controlled door lock. Basically, controlling from mobile phone devices. Keys have been around for hundreds, if not, thousands of years. We've all used them. We generally understand how they work and how vulnerable they can be. Some are better than others. And now that the simplest of devices in the home are connecting to the cloud, it's time to figure out just how safe or smart these new-fangled smart locks really are.

The security sector is experiencing diversification as it has never seen before. This has brought about the need to review the reliability of already existing systems and look into the possibility of creating better systems that are smarter and more secure.

Now a days, time has more values, if your friend/relatives come to your door for a important file (or other reason), you cannot immediately come to door, therefore our lock can be open/close from anywhere anytime.

If suppose suddenly fire is awake in your room due to some reason, this lock provides alert through phone, and immediately do for it.

Cellular is one of the fastest growing and most demanding telecommunications applications. Today, it represents a continuously increasing percentage of all new telephone subscriptions around the world. Currently there are more than 45 million cellular subscribers worldwide

## Required Component

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Electrical parts:-

1. Arduino uno (700/-)
2. GSM Sim900a Module (1700/-)
3. Battery
4. Wire
5. Circuit board

Mechanical and design part :-

1. Servo Motors (1000/-)
2. Wood for frame and door
3. Closing/opening tools
4. Fire sensor(flame detector) and motion sensor(infrared)
5. Door auto-closer

## Approx. Cost\*

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**Rs. 5000/-**

\*Cost may be more or less depending on the more understanding of the project during the starting week.

## Working

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We are using GSM sim900a module for transmission and receiver signal. Arduino is used to convert those signal into the operation of handling the servo motor into the opening and closing lock.

Arduino and GSM sim900a uses battery for signal processing and rotating motor.

We code in the arduino for the input i.e. for closing door.

We code such that it send message for opening the door, so that we knows if any other is not there.

We uses auto-closer(self made) such that gate closes just after release so that door lock can be easily used. We use fire sensor for detecting flame, smoke in the room, we code such that it send message to the mobile registered, as save the room as soon as possible from fire.

Servo motor is used to push and pull the opening/closing tool fitted in the door, to enhance the locking system.

## Timeline

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1<sup>st</sup> week-

- Design lock modal without arduino only with battery and servo motor
- Design the frame and gate
- Purchase of required component
- Start learning Arduino coding

#### 2<sup>nd</sup> week-

- More on Arduino coding.
- Design the other parts.
- Start learning GSM module (basic).

#### 3<sup>rd</sup> week-

- More on gsm module and then workout examples on simple internet.
- Start thinking algorithm for the project coding part.
- Start implementing the algorithm.
- See more Tutorial (if unable to think of required algorithm or unable to coding)

#### 4<sup>th</sup> week-

- Complete the coding part(first try for call i.e. call by my number and locks open)
- If it works, then code for message other security enhancement
- (if not work, try to debug as soon as it can, by rechecking, other means of debugging)

#### 5<sup>th</sup> week-

- Use sensor (fire sensor)
- First see the basic funda about it
- Then arduino coding tutorial for using the sensor
- Then learn how to connect via GSM module

#### 6<sup>th</sup> week-

- Try to think the code and implement on arduino, Check if it works
- Try debugging until it will work
- If it is done very early then we move to motion sensor.

#### Last remaining day –

- Packed the lock in box so that all the component(arduino, gsm module, sensor, wire, battery, motor etc) it look like a finished product
- (if complete quickly, focus and determined on motion sensor).
- We assemble all the things and ready for submitting the project.

## References

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- [LOCKSIS Digital Door Lock](#)
- Lockitron <https://lockitron.com>
- <http://seminarprojects.com/Thread-door-locking-security-system-uing-gsm-full-report>

## Future aspects

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- advanced sensor, alert for theft and high security inside your room
- can be easily installed in any door.
- Can generate similar fashioned lock for car/motocycle to reduce stolen.
- Switch off all the appliances in the room by just locking the door via mobile (Manu a time people forget to switch off fan, tube-light etc. it would save electricity if they would just lock.-