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Internet of things

Smart security lock

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# **Project Description**

Safety and security are extremely important worldwide, especially in our homes. It is very important that you know when people are trying to access, you’re an important lock or when you are trying to your important lock. A study done by NBC in America shows that over 25% of people do not trust their locks when they lock them. There are 2.5 million locks broke in a year in America and people do not know when it happens.

For my IOT project I have decided to a smart security lock. I think this is a good idea because with my smart security lock connected to an ESP 32 there will be multiple ways to open the lock with keypad, finger scanner and Bluetooth. This security alarm is very good because if somebody puts in the wrong information on any of these it will immediately send you an SMS. There will also be an LCD to put in your details. It will tell you if your details are correct or incorrect. There will be a buzzer that will go off if the lock Is breached or if there is wrong information put in. A DHT11 will be used for the temperature and there will be a web server to let you know how many times the lock has been opened. This server will also let you know the temperature. ESP 32 will track all this information and put it on your web server so all your information will be in the one place. The information will be sent to the server via Wi-Fi. If the information is put in correctly, it will be set up to a server motor which will open and close.

The code I am going to use is JavaScript, HTML/CSS and C++. On my web server I am going to use Thing speak to use graphs to show the results from my smart security lock. The aim of this project is to let people feel safer when they buy locks and to make them more secure so that it will stop people from trying to break into places with locks like houses or security safes. This project aligns with many values from the United Nations Sustainable Development Guidelines, such as helping workers safety.

# **Architecture Diagram**

A diagram of a computer

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# **Feasibility**

It might not be feasible to make it on a very big scale like making an actual lock than nobody can get into. My project will the server motor opening and closing. One problem that may occur in my IOT smart security lock is sending the SMS when somebody gets the passcode wrong my college does not provide that technology to be able to send SMS but hopefully, I will be able to get my hands on the technology and make it work. A challenge that I have not thought about is how am I going to power my smart security lock this project will probably take up a lot of power so I will have to keep in mind what power sources I am going to use. Getting all the code together and working I think will be a challenge I will face.

# **Meeting United Nations’ Sustainability Development Goals UN SDGs**

My project meets target 11.1, under the safe and affordable housing target. I have created a project which protects business, families and many other sectors from things being stolen when a lock is broken.

My project also falls under target 16.1, to reduce violence everywhere. I would hope that my project would discourage people to go breaking into places because there is a higher chance that they will get caught in doing so.

# **Schedule**

18th October – 10th November

Order all the components I will need to build the smart security lock. Plan how I’m going to code and build the lock. Learn how to use the servo motors and pots.

15th November - 15th December

Start building the lock. Get it working with local control (potentiometers).

20th December – 10th January

Make a webpage to control the smart lock.

# References

United Global Nations Global Compact, 2022. *A safe and healthy working environment*. Available at [https://www.unglobalcompact.org/take-action/safety-](https://www.unglobalcompact.org/take-action/safety-andhealth#:~:text=Each%20year%2C%20an%20estimated%202.78,working%20conditions%20every%20single%20day.)

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