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Description automatically generated**

**Project Title**

Internet of Things Project

Project Proposal

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# **Project Description**

Did you know that only 32% of homes have home security systems, Leaving the remaining homes 300% percent more likely to be broken into! This horrifying statistic shows us how crucial it is to have some sort of security to prevent such events from occurring, while robberies cannot be completed eliminated, we can drastically decrease the chances. The solution is the implementation of my IoT Home Security Device.

The IoT Home Security Device is a mounted device designed to detect falls and continuously monitor movement with a certain distance. When movement is detected, the device captures a picture and recording of the person. It then checks through its data to see if the person is recognised turning off the alarm if so, otherwise the correct code must be entered within a time frame to prevent the alarm from sounding. Also displayed on the home Security system is the date, time, temperature. This device also features an emergency button that can be pressed to call for help in emergency situations.

To set up this system, I will use Esp32, C, and C++ to program the necessary commands. I will be utilizing a RTC to display the time and date and temperature automatically for convenience and it will display using a 16x2 LCD. I will use the HC-SR04 for detecting motion which will trigger the alarm,buzzer,LEDS a camera can also be used to turn the alarm off

The main objective of this project is to make homeowners and residents feel comfortable at home knowing there are systems set in place to protect them and use in case of emergency, while also having everyday uses. This approach represents another way to reduce overall housing costs.

# **Architecture Diagram**

# **Feasibility**

The device is likely to be bulky due to the number of different components being used which could lead to it being an eyesore or damaging the surface its mounted onto.

There is a risk of a false alarm being triggered by residents of the house or visitors which would be an inconvenience to fix.

Due to the number of components being used there are concerns of battery life, and constant maintenance checks.

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

**Goal 16**

**Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**

This device reduces the number of break ins making society more peaceful.

**Goal 11**

**Make cities and human settlements inclusive, safe, resilient and sustainable**

This device improves the safety of homes and is sustainable and affordable.

# **Schedule**

**10/2024 – Research**

**11/2024 Build the circuit**

**12/2024 Code & Testing**

# References

United Nations. (n.d.). *The 17 Goals Sustainable Developemnt*. Retrieved September 27, 2023, from https://sdgs.un.org/goals

**[1] United Nations,” Sustainable goal11,”:** [**https://unric.org/en/sdg-11/**](https://unric.org/en/sdg-11/)**# (Accessed 5 October 2023)**

**[2] HC- SR04** [**https://cdn.sparkfun.com/datasheets/Sensors/Proximity/HCSR04.pdf**](https://cdn.sparkfun.com/datasheets/Sensors/Proximity/HCSR04.pdf)

**[3]**  [Goal 16 | Department of Economic and Social Affairs (un.org)](https://sdgs.un.org/goals/goal16)