**Project Proposal**

|  |  |
| --- | --- |
| **Student name:** | Lutfi Lais, Valerie Tan, Nur Nabila |
| **Topic** | Smart High Security Car Park System |
| **Global Context and exploration** | Safety, Security, High Level Monitoring |
| **Why this Global Context?** | We want this project to focus on the reasons behind why having a high security car park system is essential in our daily lives and how much the residences can benefit from such systems. This can help to reduce the amount of unauthorised entry into residences. Living in Singapore, we often take for granted that this is a safe country and the chances of something happening is low. However, even though the chances are low, there is still a possibility that something could still happen. We want this project to help reduce that possibility to be as close to none. |
| **Goal / Inquiry Question.** Use the global context to help you write your goal or inquiry question | Possible goals/inquiry questions:   * Why are unauthorised entries still occurring? * How is a security car park needed? * How does this security car park benefit me? |
| **Three facts, from three different sources, to show the importance of the topic** | 1. BROADLEY, A.: *“Car park security has never been more important, with vehicle theft rising nearly 50% in the last five years and a car now stolen every five minutes”*  PRISMDESIGNCO: *“Up to 80% of crime that occurs in or on public facilities happens in the parking lot”*  1. PROPERTYDIVISION: *“Unprotected car parks are ideal for anti-social behaviour, so it’s important that there are clear policies on car park security for both residential and commercial properties.”* |
| **Screenshot of PP Project in NoodleTools with MLA 8 citations, with annotations, for above facts** |  |
| **Personal interest in topic.**  *What hobbies and interests outside of school link to your project?* | We got interested in high level security carparks when we were discussing about condominium security as all condominiums have a security guard. However, it would not be possible for the security guard to remember all the license plates of the residences so as compared to an open carpark the standard HDBs have, there is not much of a difference in terms of security. Hence, we started discussing on how all carparks in Singapore could have a better security system to keep everyone safe. |
| **Previous MYP experience related to the topic.**  *What topics studied, activities, projects or skills from school could help?* | In our IOTS and SCSD module, we did a lab session about using cameras to detect a certain object and an actuator to have an action. With our knowledge of these, we investigated using such devices to tackle our security issue. As the purpose of this project is to make carparks and residentials safer, we can apply what we have learnt and enhance our skills to create a smart high-level security system carpark. |
| **Initial Research Questions** | * What are the main factors involved with current carpark security? * Are there any patterns in the types of location people commit crimes at (carparks)? * How well can a camera detect and read the correct license plate? * How do we know if someone tries to tailgate a residence’s vehicle? * Who will know if there is an unauthorised vehicle at the gantry? * What happens if an unauthorised vehicle trying to enter the estate? |
| **Three ideas for possible outcomes or products** | 1. We could make a secured website for the security guard to allow only authorized person to enter the carpark. 2. We could build a dashboard that shows the timing that authorized residents enter. 3. We could have a servo motor to indicate the gantry/door is open. |
| **Process Journal Format** | * Online   Reason: We will work mostly on an online process journal it would be easier to keep everyone informed on what has been done and what needs clarity when we are not physically beside each other. We can also include idea suggestions to improve our product using OneDrive. We will use Notes to keep track of the progress of each date, the responsibilities of each member as well as the shared resources for the project which may help the members in their parts. |
| **Anything Else** | We’d like to find out if there is anything similar done elsewhere and further feedback of residences’ opinions but is still within a realistic goal of our capabilities. |
| **Devices Used** | Arduino, Client MQTT, Node-Red, Dashboard, Servo Motor, Telegram |
| **Milestones** |  |