ABSTRACT

Motorcycles are one of the most widely used transportation media in society. Besides being practical when riding a motorcycle, it is more fuel efficient when used than other transportation media. However, motorcycles are one of the targets of theft. Although it has been equipped with security devices in the form of alarms and steering locks, safety devices on motorcycles are currently considered less secure for motorized vehicle owners, because the theft rate for motorized vehicles is still high.

Therefore, in this final project, a system will be designed for motorcycle safety which is expected to be a solution to this problem. This system uses the Arduino Nano microcontroller as the brain in this system, which is connected to GPS, GSM SIM800L Module, relay, and SW-420 sensor mounted on a motorcycle. GPS is used to track the location of motorized vehicles, relays are used to cut off electricity in motorized vehicles, and the SW-420 sensor is used as a sensor to detect vibrations on motorcycles, while the GSM SIM800L module is used as a cellular communication medium.

The purpose of designing this system is that the user can find out the location and the vehicle after it has been stolen. This system is connected to an application that can be accessed via an Android-based smartphone, where users can use it easily with a success rate of 80% with a fairly high accuracy of the GPS module with a deviation of 10 meters.

Keywords: Motorcycle, Ardinuno Nano, GPS, relay, SW-420 sensor.