Full names of all participant: Toktasyn Tamiris

The name of the project : Ninja Turtles

Short description :

An underground trap or trap for pedestrians, a magnet for car accidents and a threat to the environment is an open hatch. It has already cost the health and lives of more than one resident of the capital and other regions, such as Taraz, Almaty, Uralsk, etc. In just three months, the city water utility has lost 69 covers. The police have accumulated more than 20 statements on the fact of theft, but not a single case has yet been solved. In the current news articles 2018-2023, you can easily notice such headlines as: "In Taraz, manhole covers are "disappearing"! In the city of Karatau, manhole covers have disappeared! 260 cast-iron hatches disappeared without a trace in Uralsk! HATCHES AND CABLE WERE STOLEN FOR 52 MILLION TENGE IN A RESIDENTIAL AREA OF TARAZ! Cast-iron hatches began to disappear from the central streets of Almaty! Akim of Taraz urged residents to help in the fight against the theft of hatches! Accidents due to unclosed manholes have become more frequent in Nur-Sultan! Sultanov: The theft of manhole covers is still going on in Nur-Sultan!". Even the President of Kazakhstan Kassym-Jomart Tokayev himself spoke about the problem of open hatches in Nur-Sultan during a meeting with the city's activists.

"The problem of hatches is just a shame. In the capital, which we call the capital of Eurasia, people disappear into hatches. And the whole government together with the akimat cannot solve this problem. Now, however, we have already somehow got close to solving this problem, but in a city where summits, major international meetings are held, where we say that this is the best city in Eurasia, children disappear in hatches. What is this? It's just a shame," Tokayev said.

In February, Bakdaulet Omirkhan, a 13-year-old resident of the capital, was found dead at the bottom of a well. In November 2018, a 13-year-old girl Aruzhan died in the same way. On May 29, a child was riding a bicycle and fell into a well.

Our project can be a very simple and cheap solution to this large-scale problem, which in the end will save quite a few lives in the future and save most of the people's money that could have been used for the development of the country and will become one less reason for environmental degradation!

It consists of an Arduino microcontroller, a GSM module and a reed sensor. One part of the reed sensor magnet is connected to the manhole cover and the other to our device on concrete.When the hatch cover is opened, the connection of the two magnets of the reed sensor is disconnected and a signal is sent through the GSM module that the hatch was opened at a certain time and place. So we can monitor the theft of hatches and track down thieves.

Project results :

The implementation of a hatch theft monitoring system based on an Arduino microcontroller, a GSM module and a reed sensor can give a positive result.

If the system has been properly configured and installed, it can make it possible to monitor the condition of the hatch in real time. Thus, if the hatch is opened in an unauthorized way, the system will be able to determine the time and place of the incident and send an appropriate message.

This allows you to quickly respond to theft and track down thieves. However, it should be noted that the effectiveness of the system may depend on a number of factors, such as the quality of the sensor installation, the availability of a reliable and stable communication signal, as well as the level of protection against possible hacking or bypassing of the system.

In general, the implementation of a hatch theft monitoring system using an Arduino and a GSM module can give a positive result if all the necessary conditions and precautions are met.