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SMART PARKING SPACES

Soliyev Akhrorbek Farkhodbek oglu
Andijan State Technical Institute
Assistant of the Department of "Transport Logistics"
Telefon: +998934427142

A smart parking lot is a specialized parking area for cars, created using sensors and modern technologies to quickly and conveniently find parking spaces, ensure safety, and automate the process of temporarily storing a car [1]. The creation of special parking spaces for cars began almost at the same time as the first cars appeared. Today, the number of cars is growing rapidly, and modern technologies are being introduced to solve the problem of limited parking spaces.

One of the main directions of development in this area is "smart" parking sensors. Such sensors are installed in parking lots and monitor whether the space above them is occupied or empty, transmitting information to the general system. When using a network of such sensors, a map of the parking lot is created and its status is transmitted to users on the street using special screens or a mobile application [2].

One of the new concepts for indoor parking lots is the installation of sensors, which additionally perform the function of vehicle security and monitoring. Another direction of smart parking is the development and implementation of automated parking lots in which the driver's actions are minimized. The driver drives onto a special platform or platform and gets out of the car. Then the platform itself takes the car to a specially designated, reserved or free place and informs the driver about its number. To get his vehicle, the driver must log in to the system and enter this number on a special display or control panel, after which the platform independently launches the car into the parking lot. The deployment of such systems in urban areas is currently very relevant and important in the development of urban infrastructure.

Therefore, we set ourselves the task of developing such projects. To do this, we need to start with an elementary design of a parking lot. Of course, for us, the first step is to have basic knowledge of robotics and programming, or you can develop a smart parking system with the help of a specialist in this field.

[3].

First, we will make a prototype of this system, and then, if we are sure that it can be implemented in practice, we can propose it for development. In a smart parking lot, you park your car in a parking lot without any manual labor, and the system will automatically block the place where you parked. To complete this project, we will need an Arduino, 2 Line sensors (mh-sensors), a Servo motor, a photoresistor, a resistor, and an LED. We can see its connection diagram in Figures 1 and 2 below:

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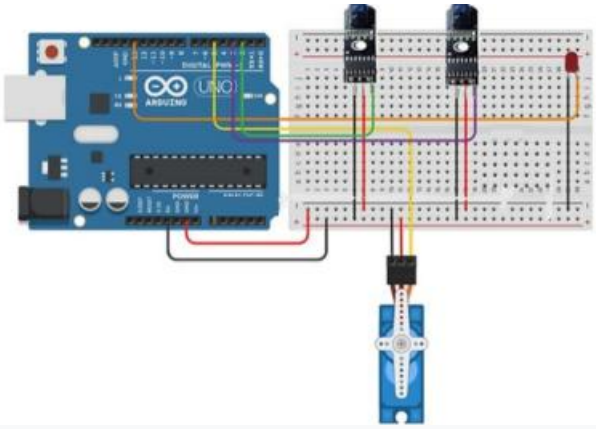
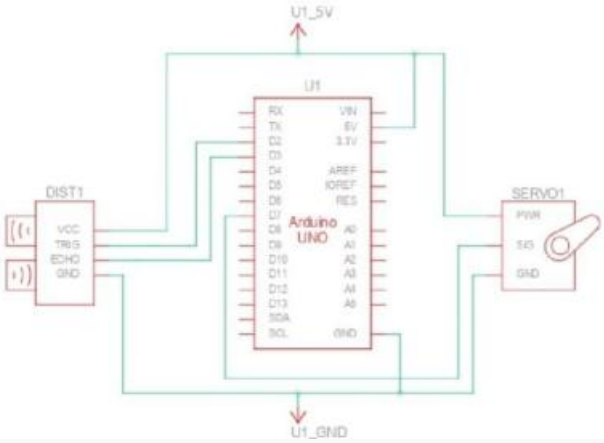


Connection diagram of the intelligent system of the smart parking lot model. Of course, we can create a ready-made program for the operation of the system boards in the connected diagram using the Arduino program. In this case, the algorithm of the intelligent system will be as follows (Figure 3).



Electrical connection diagram of a smart parking lot model

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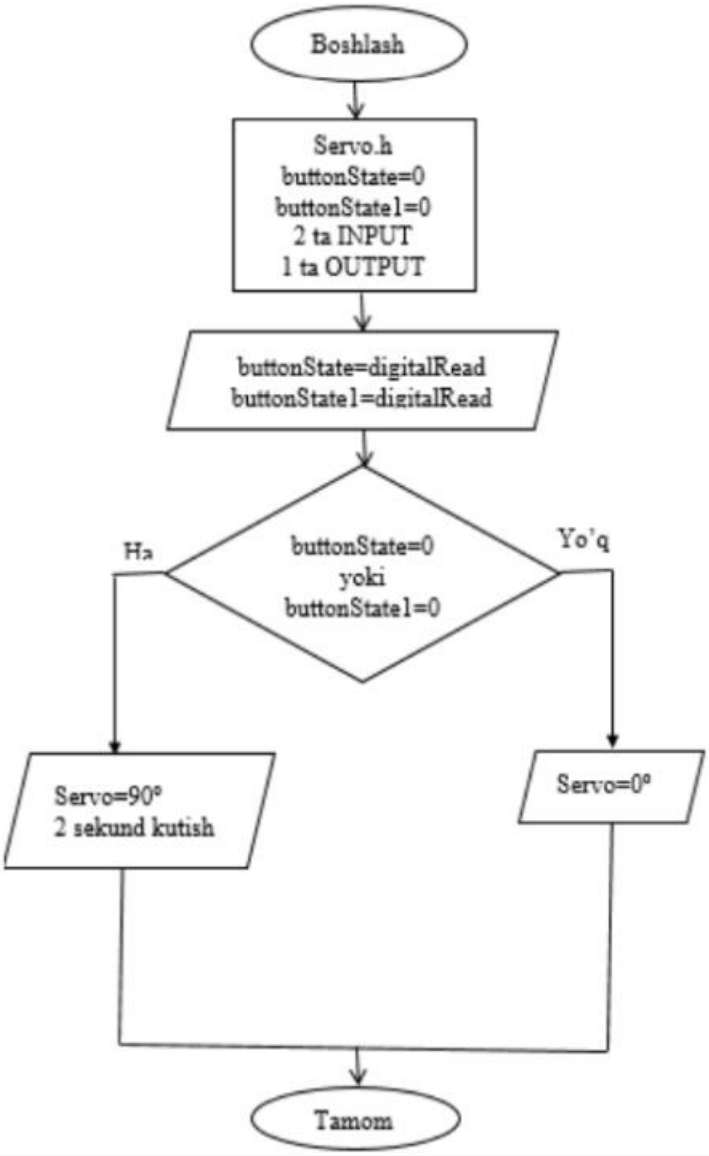

The algorithm of the intelligent system is designed. Based on the above, we collect all the parts and use 2 batteries as a power source for the system to work, as well as a lighter wooden panel to make a model of the parking lot. We cut our wooden panel to the size of the number of cars we have available using a laser cutter and connect them together. We will attach the smart system diagrams we prepared for it (Figures 4, 5, 6).

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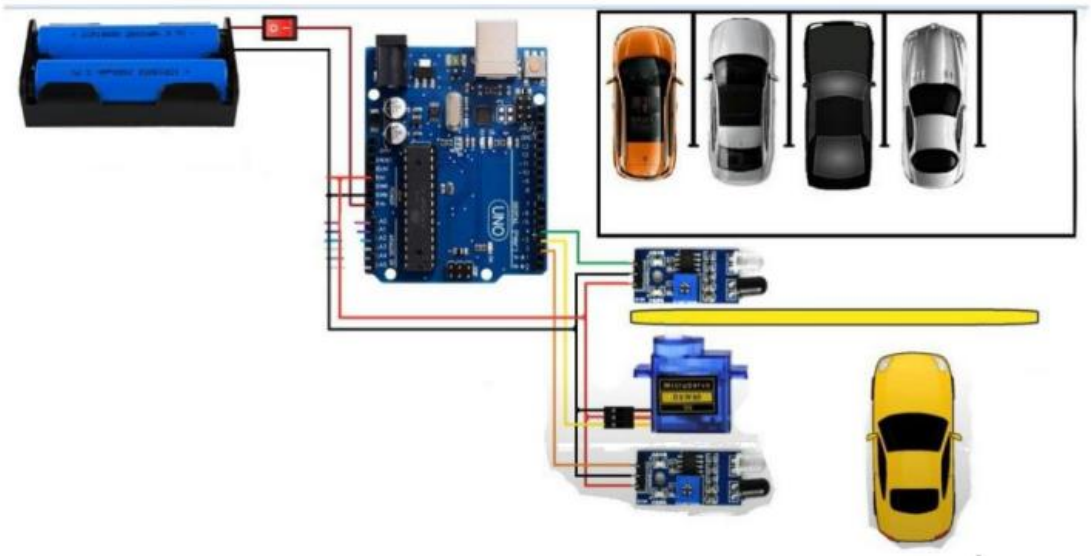

Aqlli tizimning umumiy ko‘rinishdagi sxemasi

Avtoturargoh tizimining afzalliklari

Cost-effective. A parking system reduces the need for a facility to employ a workforce to manage parking. The human element in parking management increases costs due to the need for paid staff. However, using technology to manage parking goes a long way toward achieving cost-effectiveness. Furthermore, there is an overall reduction in costs from an efficiency perspective due to the minimal errors in the parking lot management systems [4].

Space Optimization. It is well known that parking space is not a scarce resource. The limited nature of parking space makes it important to develop effective parking management systems. If a facility is to maximize the use of its available parking space, a parking system is in order. Parking management systems can direct motorists to parking spaces more quickly and efficiently. For this reason, an automatic parking system allows for better use of the available parking space than a manual option [5].

Foydalanilgan adabiyotlar:

1. Ўзбекистон Республикаси Давлат статистика қўмитаси маълумотлари, 2020. [Online]. Available: https://stat.uz/uz/
2. Качество жизни. (Динамика градостроительного развития города Москвы относительно других городов мира за 5 лет), Публичный отчет, 2019. https://www.pwc.ru/ru/publications/collection/kachestvo-zhizni-publichniy-otchet-2019-rus.pdf.
3. “Parking Policy for Surat City” 2018. https://suratmunicipal.gov.in/Content /Documents/Departments/TrafficCell/ParkingPolicy.pdf (accessed Apr. 27, 2021).
4. К.Х. Азизов, Ғ.И. Мамаев, “Шаҳар кўчаларидаги ташкил қилинмаган автомобиллар тўҳташ жойлари таҳлили” Меъморчилик ва қурилиш муаммолари. Илмий-техник журнал 2019 №2. 105-107 б.
5. М.Кодрански, Г.Герман, “Коренной поворот в европейском парковании : от обустройства к ограничению паркомест,” 2011 г.