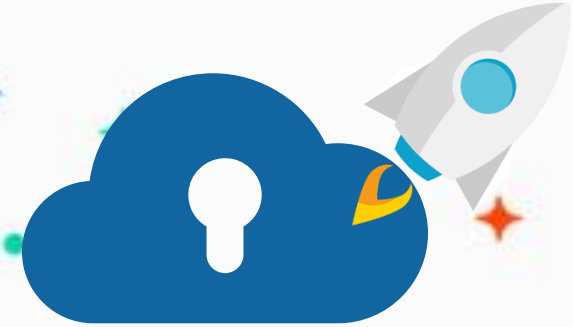

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Lesson 3. Please Scan to Ride

LECTURER:

Lesson Objective

Learning Objectives

1. Learn about scanning codes to ride.
2. Learn about masked data.

Possible Difficulties

1. Block invalid data.
2. Control the moving distance of the robot through the moving time.



Background Information



Background Information



The advancement of transportation has made it easier to travel between cities, and has minimized the perceived distance between regions. However, have you ever wondered about the modes of travel used before the development of modern transportation?

In the past, people primarily relied on public transportation options like buses and subways, which were both convenient and cost-effective. Today, taxi travel has emerged as a popular mode of transportation, but it was not as prevalent in the past.

Background Information



Public transportation, such as buses, often charges a low fare based on a full or half-way basis to better serve passengers. In Guangzhou, a bus journey usually costs about 2 yuan, while the subway's starting price is 2 yuan within 4 kilometers and is calculated based on the distance. Cash payment is still accepted, but using a transportation card or scanning a code is becoming more popular.



Knowledge Introduction

Knowledge Introduction



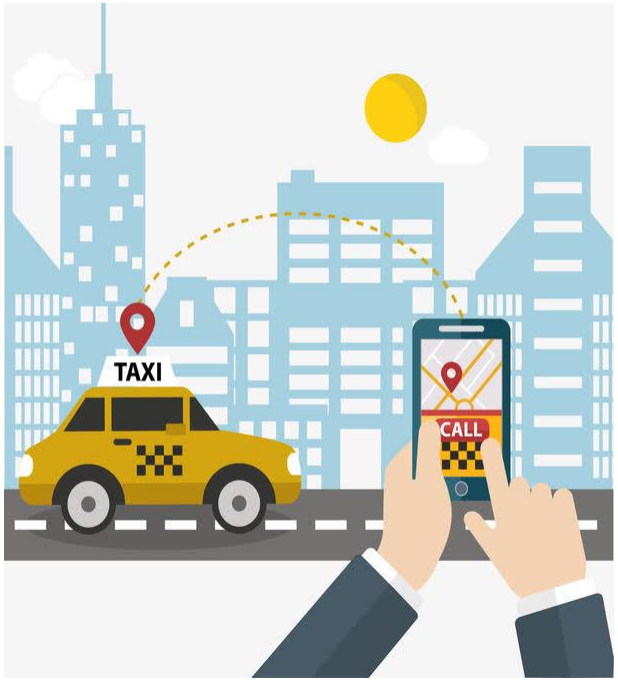
Public transport often does not go directly to specific destinations. So when traveling, we also choose to take a taxi, which is often called a taxi, to go to the destination point-to-point. A taxi refers to a car for temporary hire, and is usually charged by mileage or time. "Taxi" is the abbreviation of "taximeter", which means "mileage meter".

Knowledge Introduction

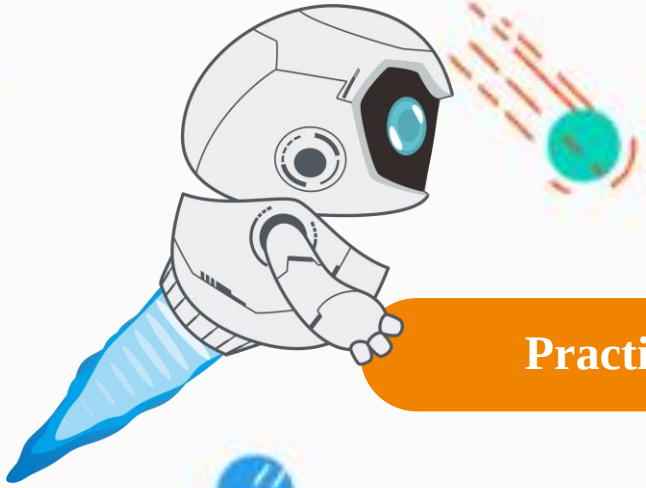


At the beginning of the 21st century, limited by underdeveloped communications and a few vehicles, taxis are still our first choice for private travel. The taxi calculates the distance by pressing the meter and stops the mileage meter when it reaches the destination. For the journey, the passenger pays according to the meter price.

Knowledge Introduction

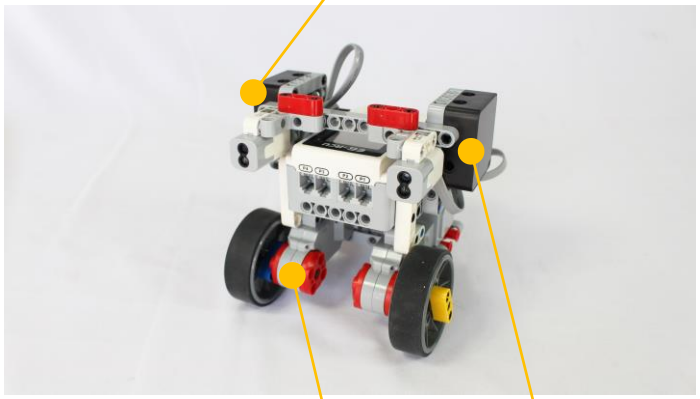


In recent years, due to the popularization of mobile payment, the development of travel services, and the increase in the number of vehicles, people prefer to temporarily hire cars through mobile software. The pricing method is the same as that of taxis, which is calculated based on the starting price, mileage price, and travel time. actual price. Today, we will build a taxi that can move after scanning the code.



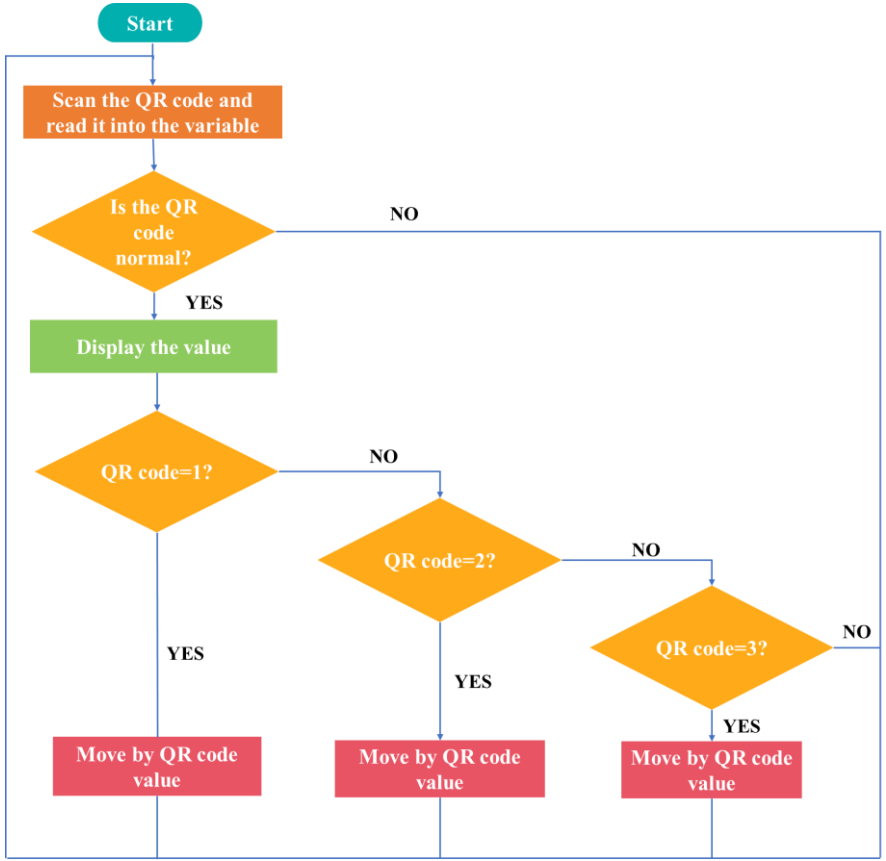
Practice

New Knowledge



Build a taxi according to the construction manual, and realize the taxi function of scanning different code values and moving different distances.

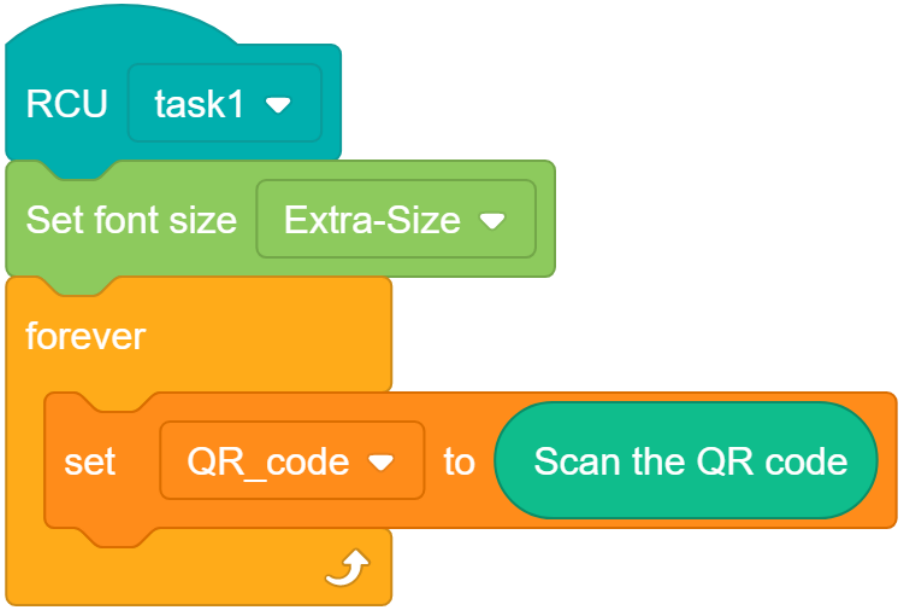
Practice | Flow Chart



The scanning camera reads different QR code values, and the robot moves according to different values.

The QR code is a normal value, that is, the QR code is meaningful, and the scanning camera will output 999 when there is no recognition. After scanning the code, the end code 65488 will be output. These two values are meaningless in the program and are abnormal values. We need to block them.

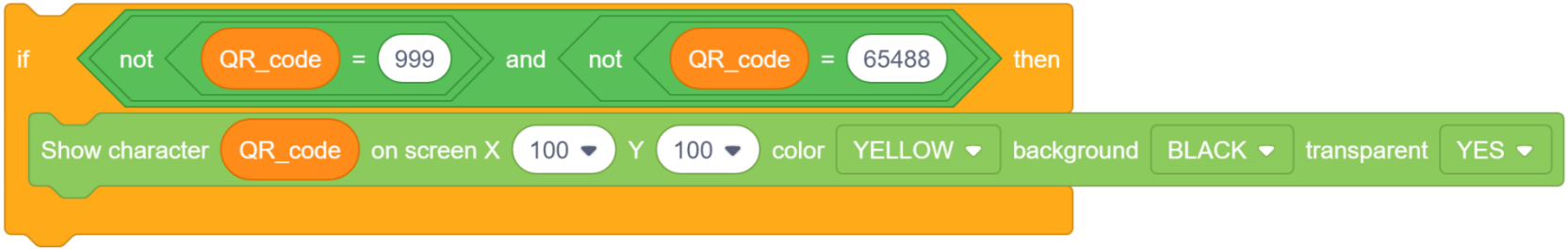
Practice | Programmaing



Initial settings

Set the font size and repeatedly read the value of the scanning camera to the variable.

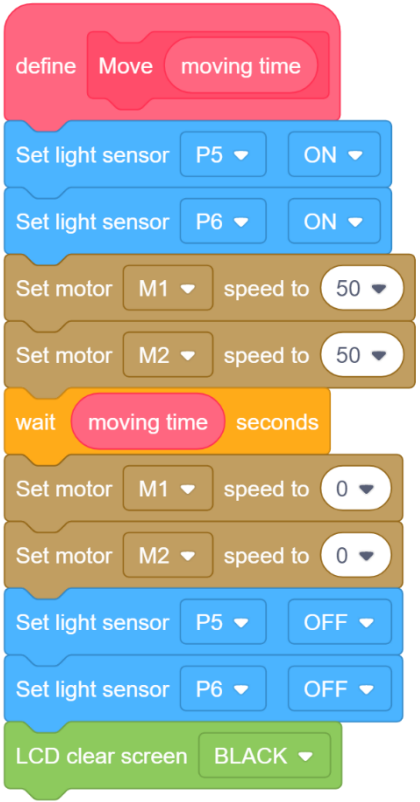
Practice | Programming



Judgment of data masking

Mask two abnormal values, and display the scanned QR code value in the middle of the screen.

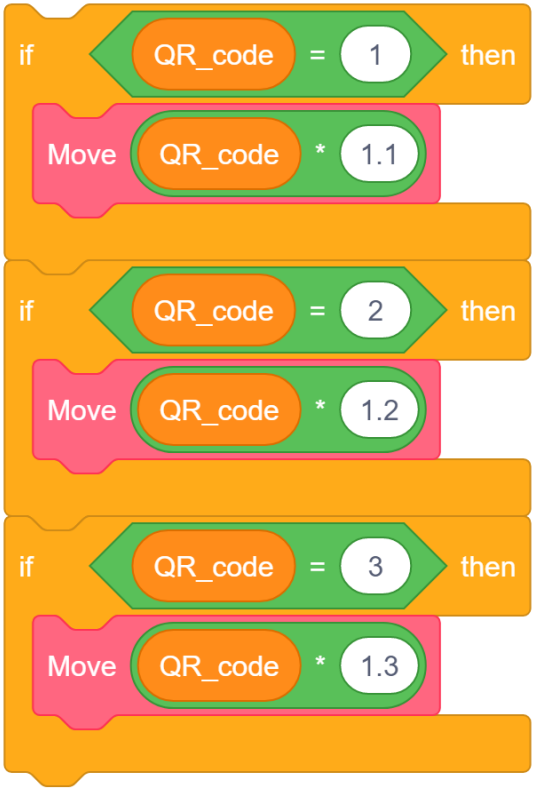
Practice | Programming



The function of moving

When moving, turn on the photoelectric sensor as the lighting of the car lights. After the moving time, the motor stops and the lights are turned off. At the same time, the QR code value of this time is no longer displayed.

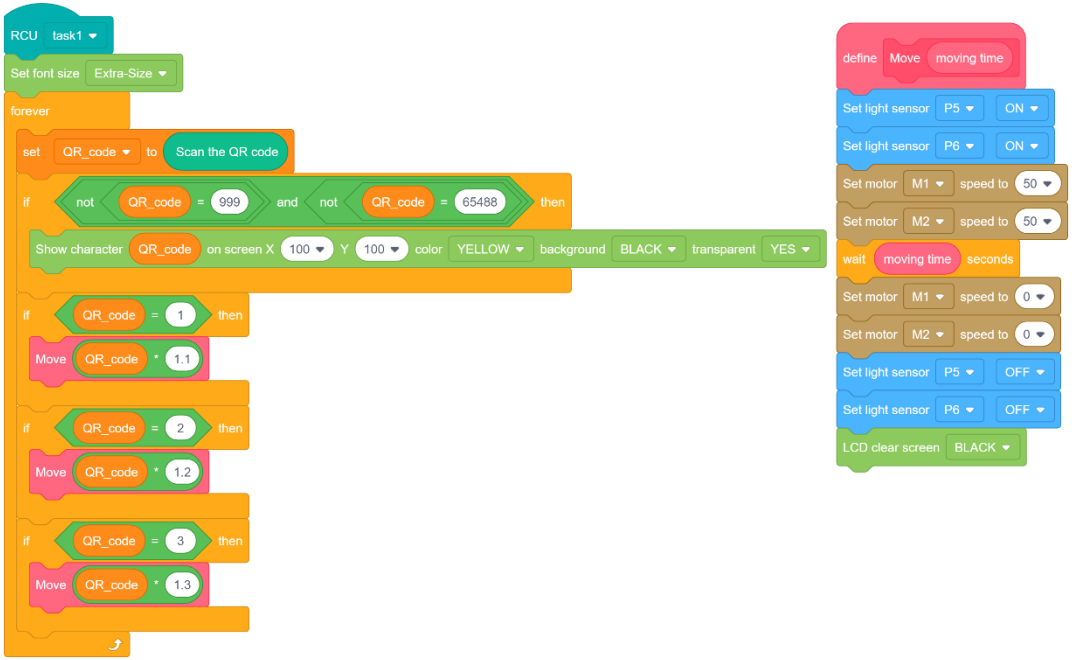
Practice | Programming



Judgment of value

Determine which value the QR code belongs to, and multiply it by the magnification corresponding to the value after the judgment, so that you can feel the relationship between the moving time and distance more intuitively.

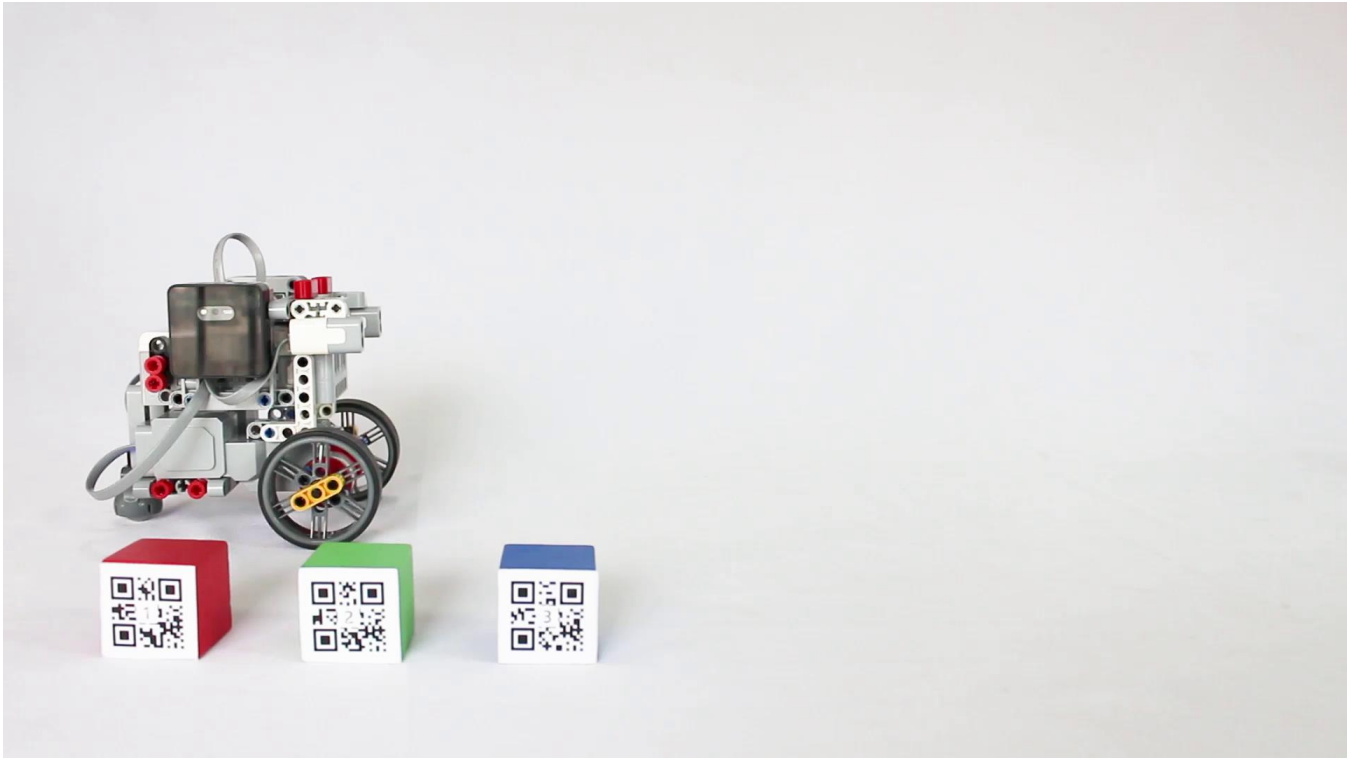
Practice | Programming

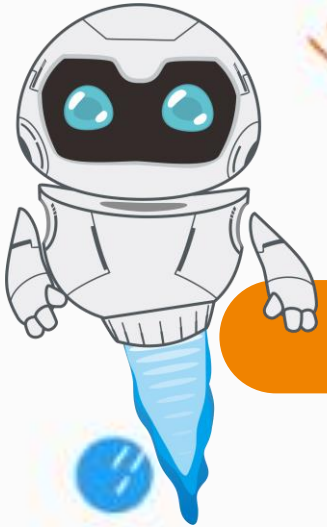


Integrate the program

According to the flowchart, integrate each segment of the program.

Practice | Programming





Results

Program Optimization

This lesson realizes the function of scanning the code to ride a car. After scanning the code, the robot can move according to the code value. The larger the code value, the farther the moving distance will be.

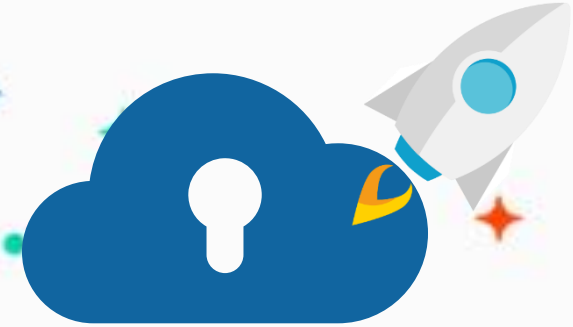
Next, modify the program to change the calculation method of the moving distance.

Requirement: When the code value is larger, the moving distance is shorter.

Further Reading



In addition to the commonly used public transportation, there is another kind of transportation that supports scanning codes to ride, and that is the high-speed rail. Although the frequency of use of high-speed rail is not so high, it already supports scanning the code to ride. I believe that in the near future, people will be able to scan the code to board the plane.



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Thanks!

LECTURER: