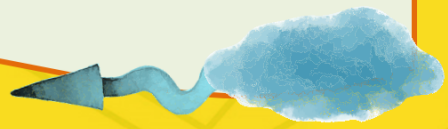
Setting Up Fiber Optic Cables

Target

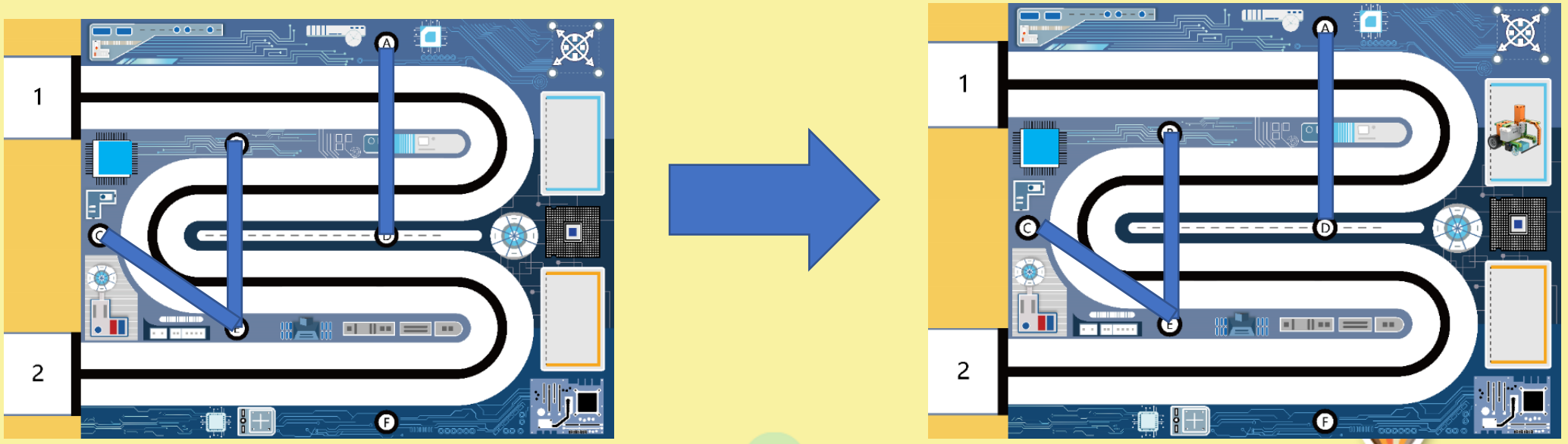
- Study the rules for Task 2: Fiber Optic Cable Installation.
- Combine what you've learned previously, using color detection, movement, and the robotic arm to handle task items, to complete the content of Task 2.

01 Task



Task

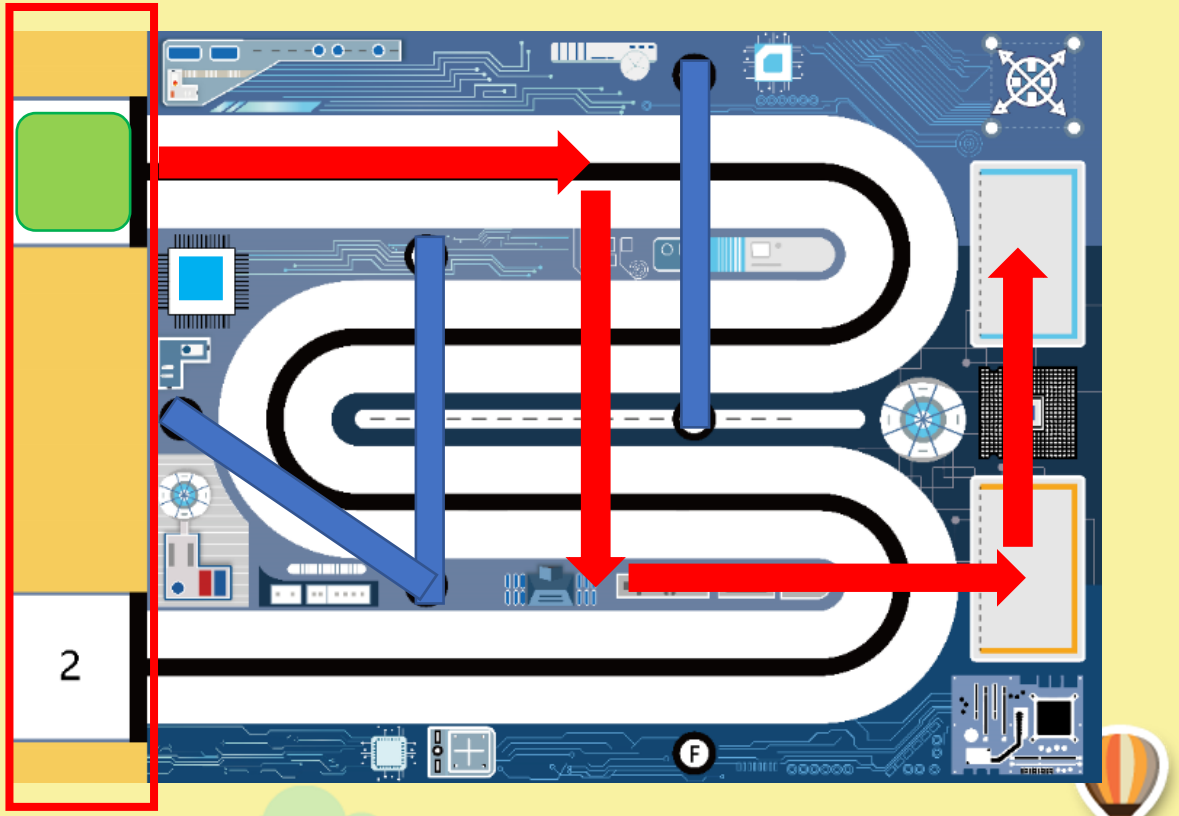
- The device starts from the preparation area and must navigate over randomly placed obstacles to reach a specific location and install fiber optics in a narrow passage.
- At the start of the competition, a random combination of up to 3 barriers from positions A, B, C, D, E, or F will be selected. After each round, color information will determine the endpoint—either the yellow or blue relay station.
- For example, if blue is chosen as the endpoint, the robot must overcome the obstacles and reach the blue relay station.



Task Analysis

- The device starts from the preparation area and select the route.

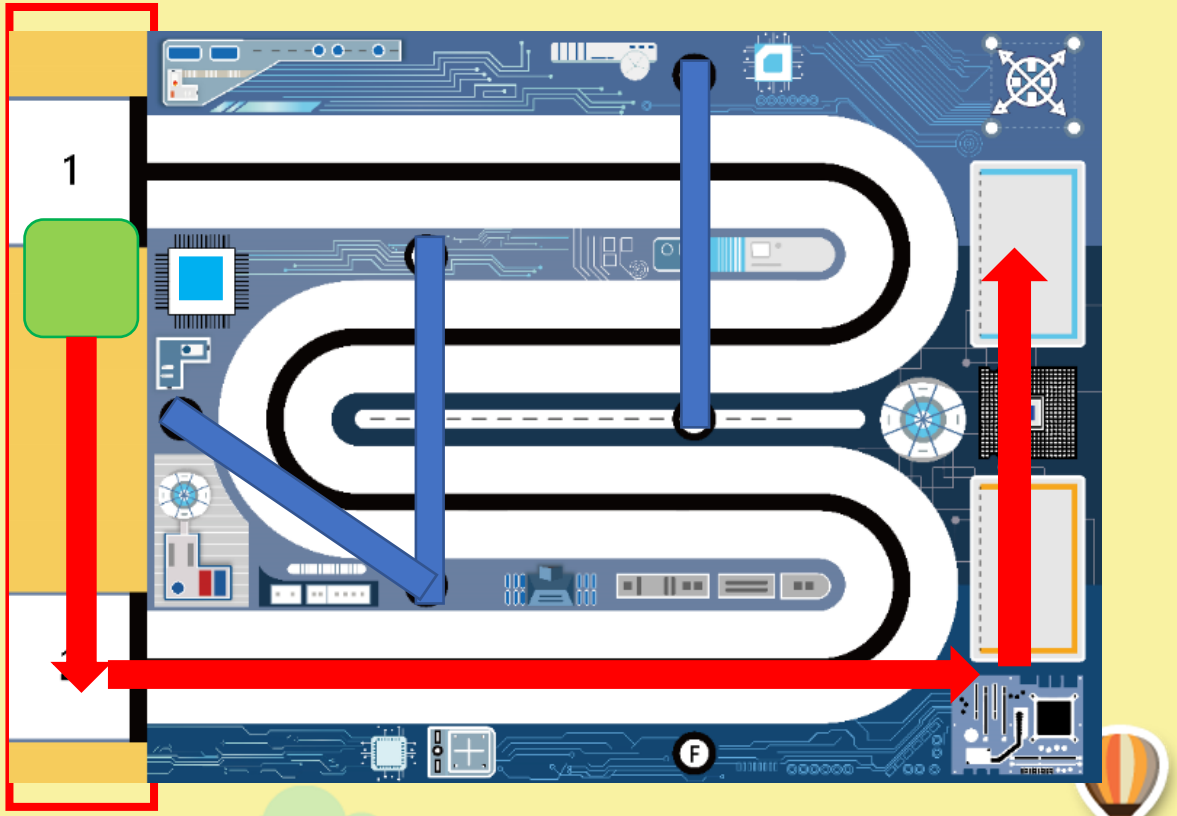
Route A



Task Analysis

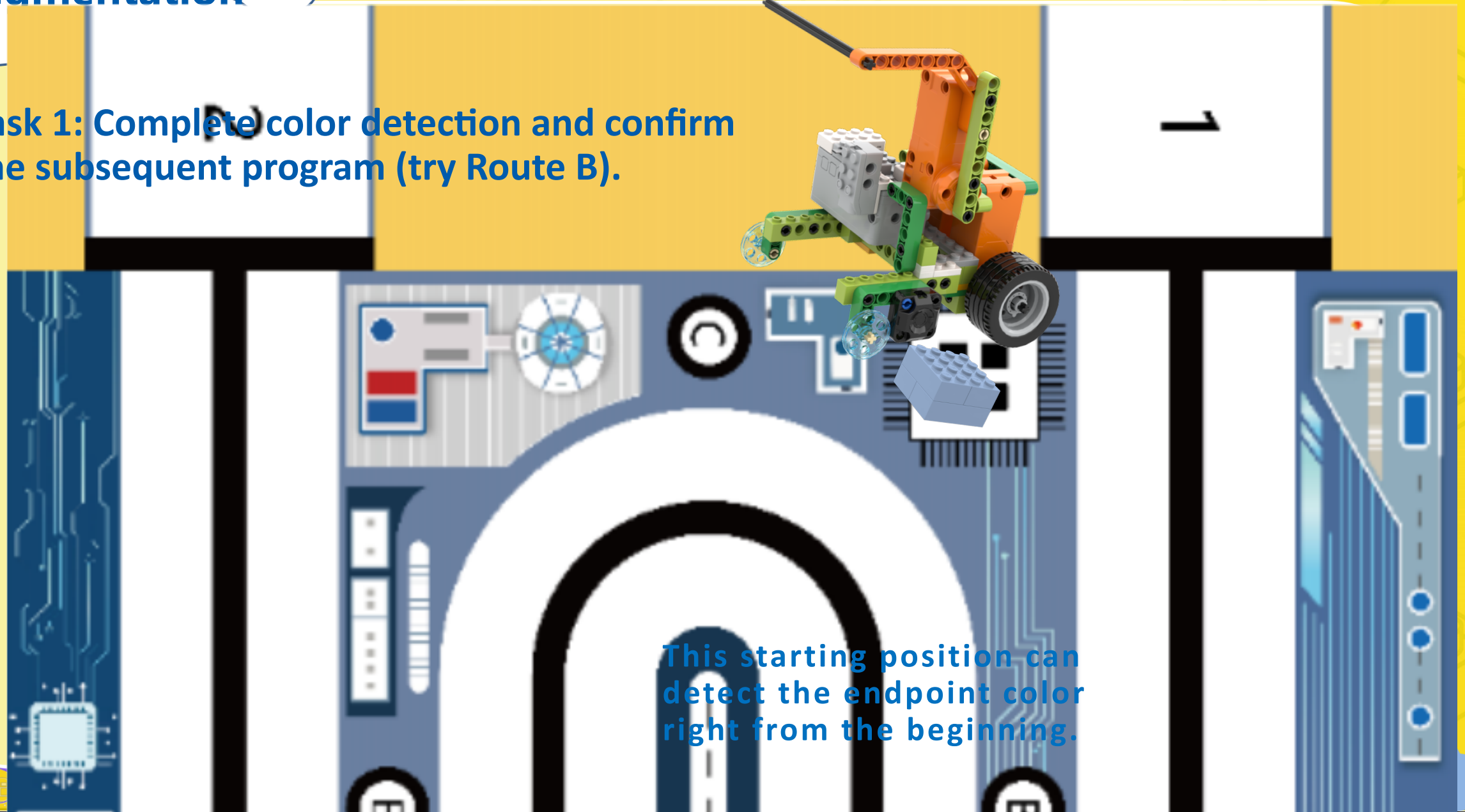
- The device starts from the preparation area and select the route.

Route B



Task Segmentation

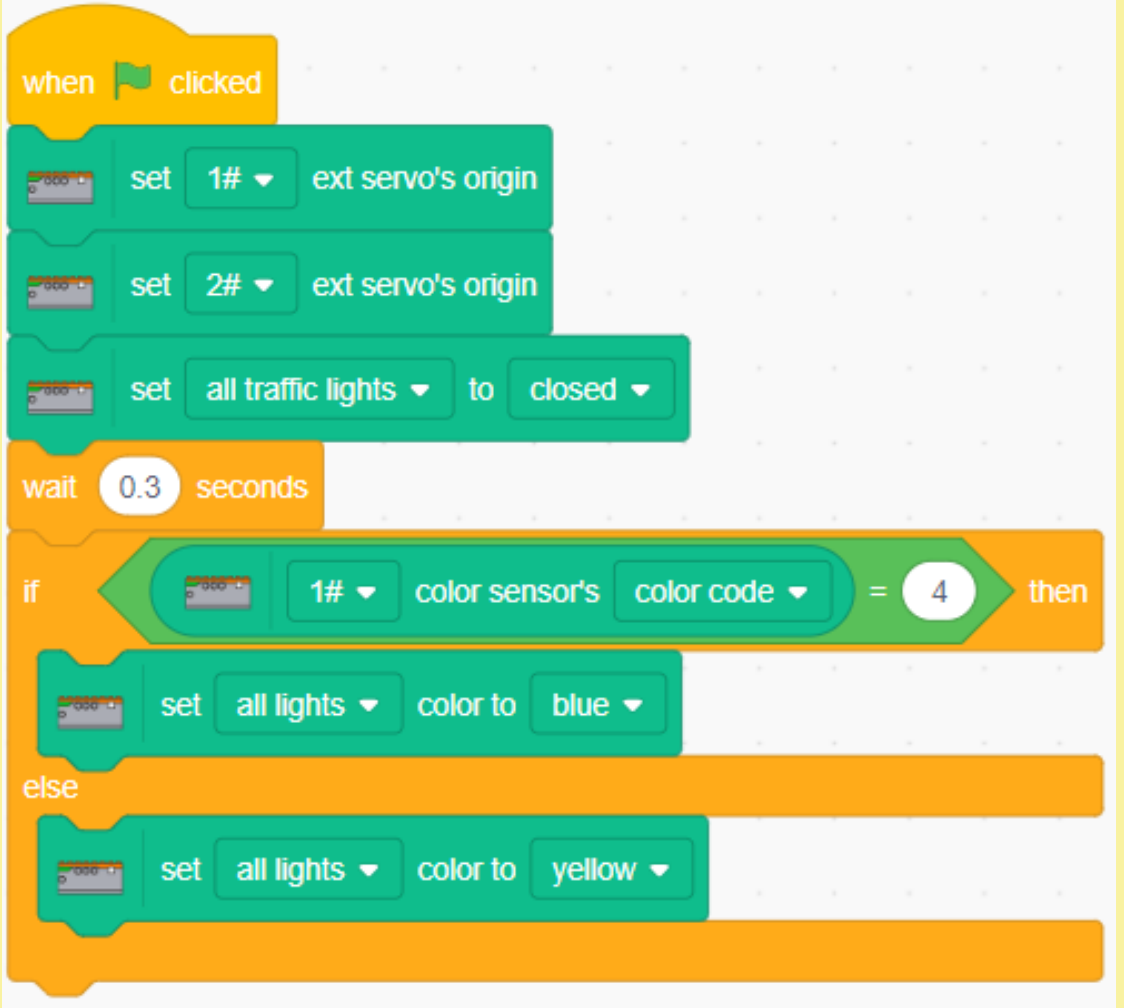
Task 1: Complete color detection and confirm the subsequent program (try Route B).



Task Segmentation

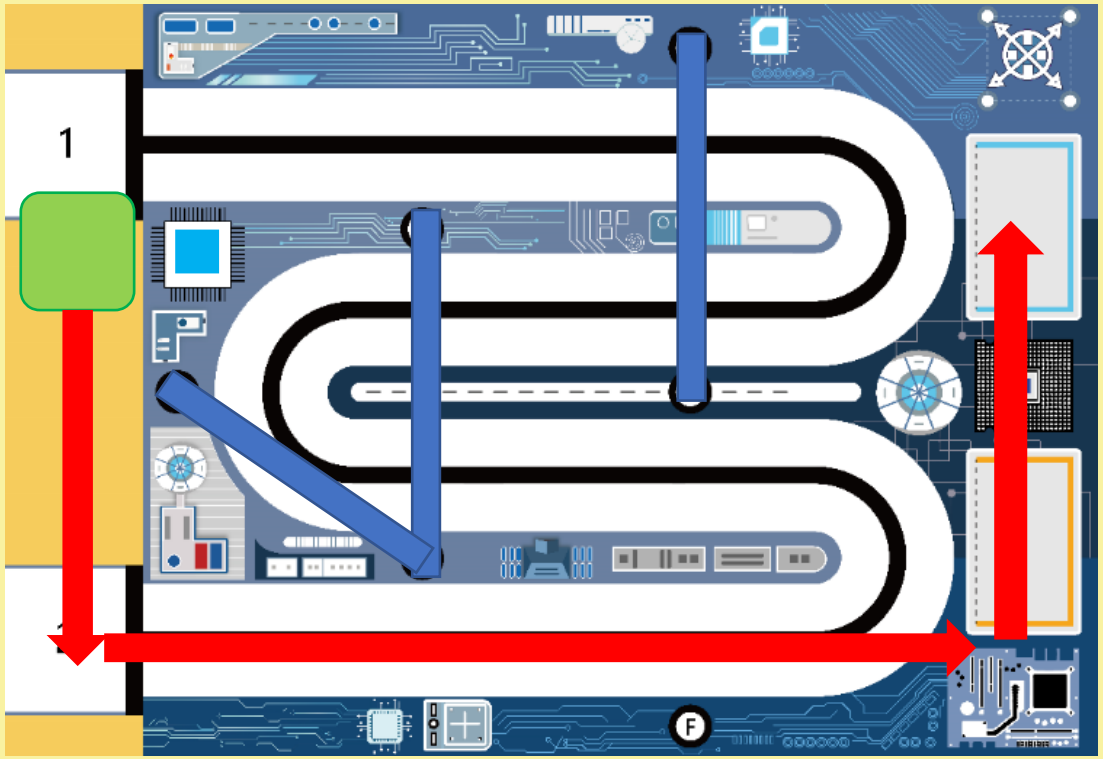
Referrable Program

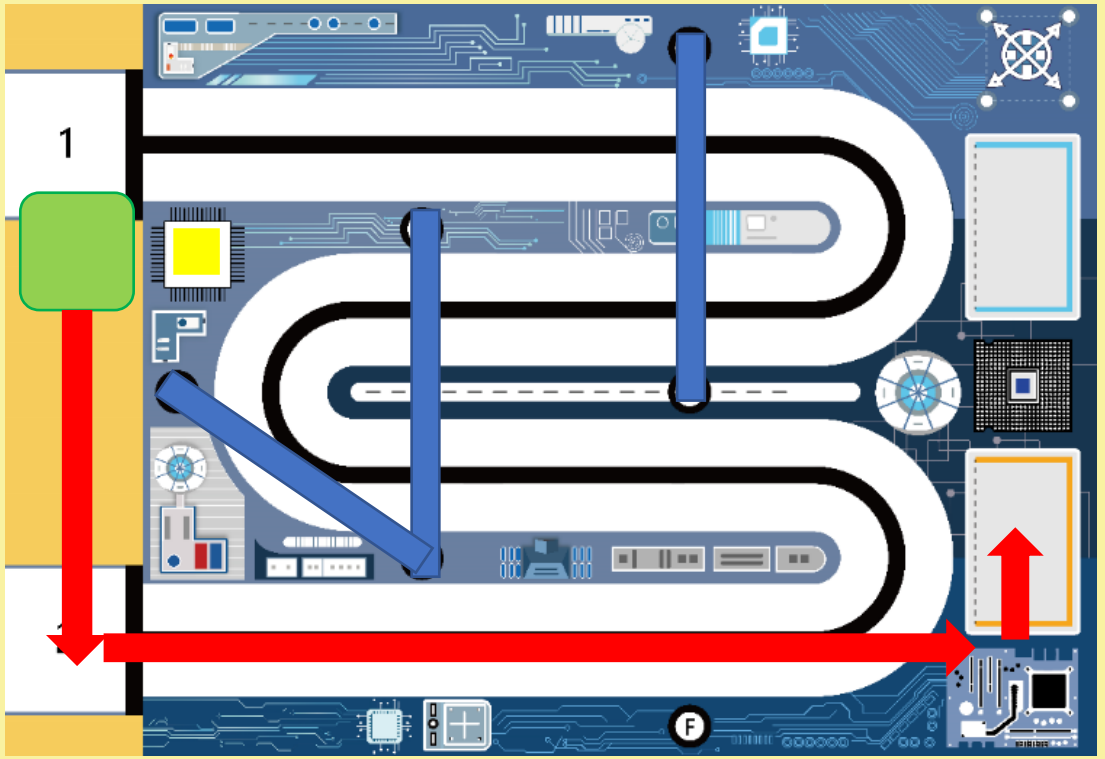
You can quickly complete the color detection test.



Task Segmentation

Task 2: Complete the actions for detecting the yellow area and detecting the blue area.

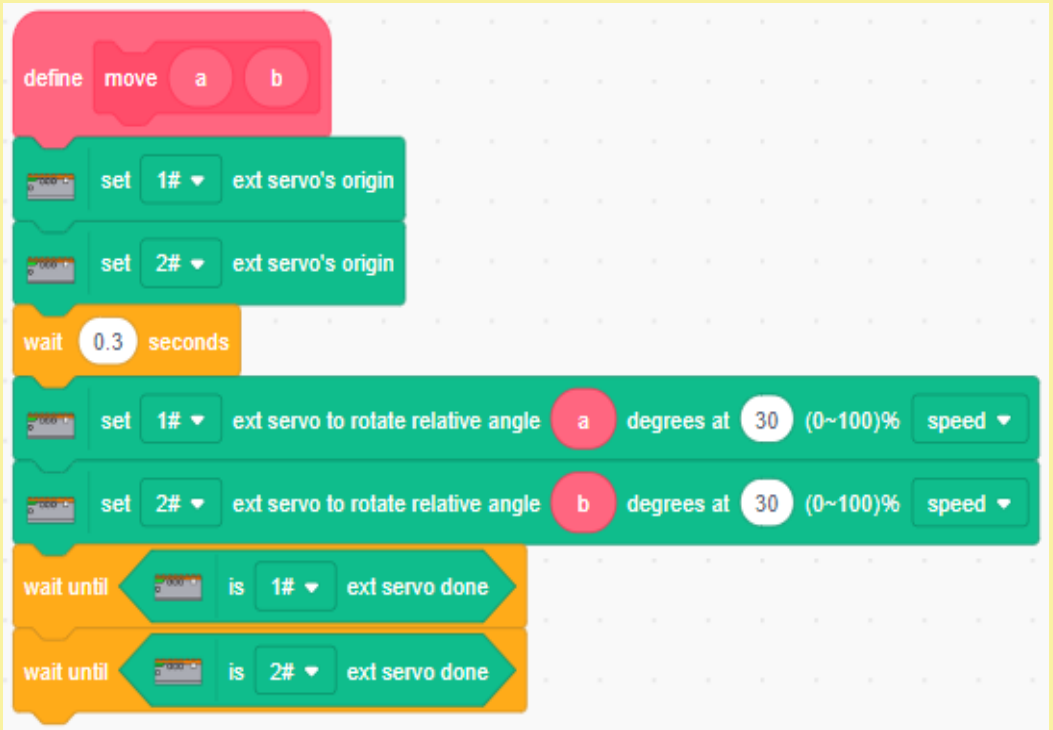




Task

Referrable Program

Define the movement module.



Task

Additional Task: Try using other modes to complete the task shown in the diagram. You can experiment with a grayscale sensor to measure distance.