FLOW BLOCKS: SENSORS AND ACTIONS

SENSING BLOCKS

A sensor is a device that detects or measures a physical property, like temperature or light, from an environment.

Sensors can be manufactured devices, like a thermometer or a microphone, but they can also be found naturally in most living creatures, like an eye or an ear.

Sensors are vital for both humans and robots as they act as a medium between the physical environment and incorporeal decision making.

In this test, our robot needs to sort incoming bananas based on their colours. Our robot can use sensors to get information from its surroundings. These sensors are constantly measuring data, and we can retrieve the latest value of these sensors using a sensing function/block.

Sensor blocks are not part of the execution order (they have no orange connectors). They are run whenever their value is required for a calculation or action block.

You can pass the output of one of these blocks to another block using the output handle. Although some handles accept multiple types of data, for most blocks, you can only connect handles if they share the same data type. The easiest way to check if two handles have the same data type is to check if the colour of the handles are the same.

Our robot has access to three colour sensors: green, yellow and brown. These sensors will return the Boolean value TRUE if their assigned colour is detected and FALSE otherwise.

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ACTION BLOCKS

We can use the information that we receive from the robot's colour sensors to determine the correct action to perform for each new banana.

Pull Lever

Instructs the robot to pull the lever in front of it, changing the direction of the roller conveyor.

Unlike previous action blocks, this one includes a boolean input. If the input is TRUE, the robot pulls the lever. When the input is FALSE, the robot will do nothing.

This means that you can have the robot only pull the lever when a calculation determined by you returns a value of TRUE.