

kitronik Line following robot

# Introduction

Kitronik robot also is equipped with line following sensors. Line following sensors output an analoge signal. This changes depending on the surface reflection. The more reflective the surface, the higer the value. In this lesson we learn, how to create line follower.

# Necessary:

* Micro:bit controller
* Kitronik :MOVE motor kit
* USB cable
* Micro:bit program or internet link in which to do programming

# Process!

1. Choose forever loop from Basic
2. Make two new variables **leftSensor** and **rightSensor**. Go to **Variables** push **Make a Variable**, write **variable name** and push **ok**.

A screenshot of a computer

Description automatically generated

1. Choose **set leftSensor to 0** block from **Variables** and insert in **forever** loop, do it again, but in **leftSensor change** on **rightSensor**
2. Take block **left line following sensor value** and insert in **set leftSensor** to 0 block.
3. The same does with **rightSensor** block but change **left sensor** to **rightSensor**.
4. Then create one newer **variable** – **sensorDifference**.
5. When variable is ready, choose **set sensorDifference** **to 0** and insert in **forever** loop.
6. From **Math** choose block **absolute of 0** and insert in **set sensorDifference** to 0 block.
7. Also, from **Math** choose block **0 – 0** and insert it in **absolute of 0** block.
8. Then in **one side** of **0 – 0** block insert variable **leftSensor** in **other side** insert variable **rightSensor**
9. Then from **Logic** insert block **if-else** in **forever** loop and from **Logic** insert block **0 > 0** in **if-else** block

A computer screen shot of a chat

Description automatically generated

1. Insert Variable **sensorDifference** in block **0 > 0** **first position** and in **second position** write **10**
2. Then in **if – else** loop insert block **if** and again insert block **0 > 0** in **if** block. Insert Variables **leftSensor** in one position and **rightSensor** in other position in **0 > 0** block

A screenshot of a computer

Description automatically generated

1. Then insert block **turn off right motor** and block **turn left motor on direction forward speed 30** from **MOVE Motor .... Motors** in **inner if** loop.
2. Insert the same blocks again but **change** **motors** and put it in the **inner else** loop.
3. Insert **move Forward at speed 30** in external else loops

A screenshot of a computer

Description automatically generated

1. **Download** in micro:bit controller

Python:

A screenshot of a computer

Description automatically generated

# Challange:

create a track and start the robot to drive it. Check if it can handle complex shapes. Check at what max speed it can react to turns