12. Case 10: Fall-arrest TPBot

12.1. Purpose

- Stick a black gummed paper to the edges of the table, programme to set the TPBot reversing if the black was detected and then it keeps moving forward.

12.2. Material

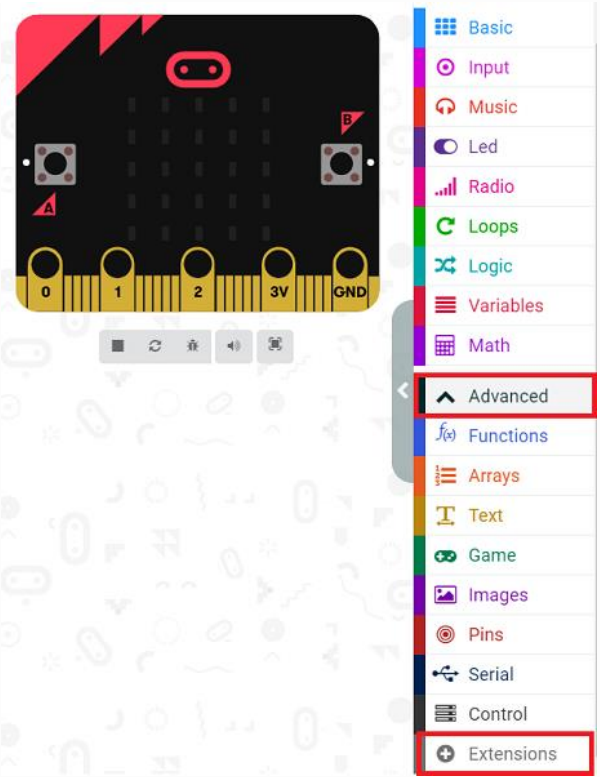
- 1 x TPBot

12.3. Software

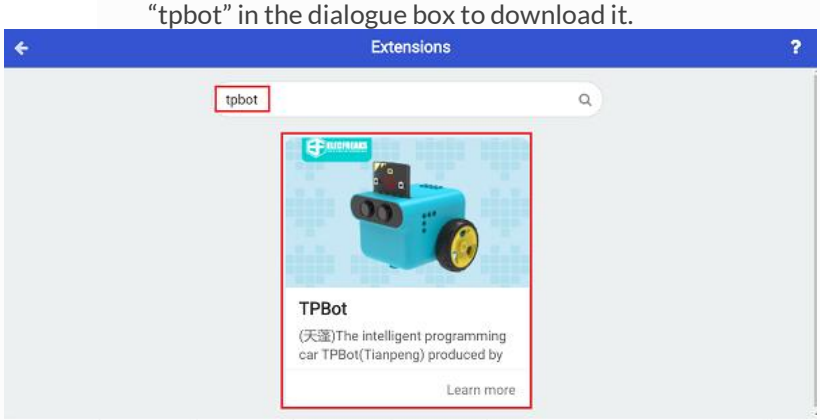
MicroSoftmakecode

12.4. Programming

- Click “Advanced” to see more choices in the MakeCode drawer.

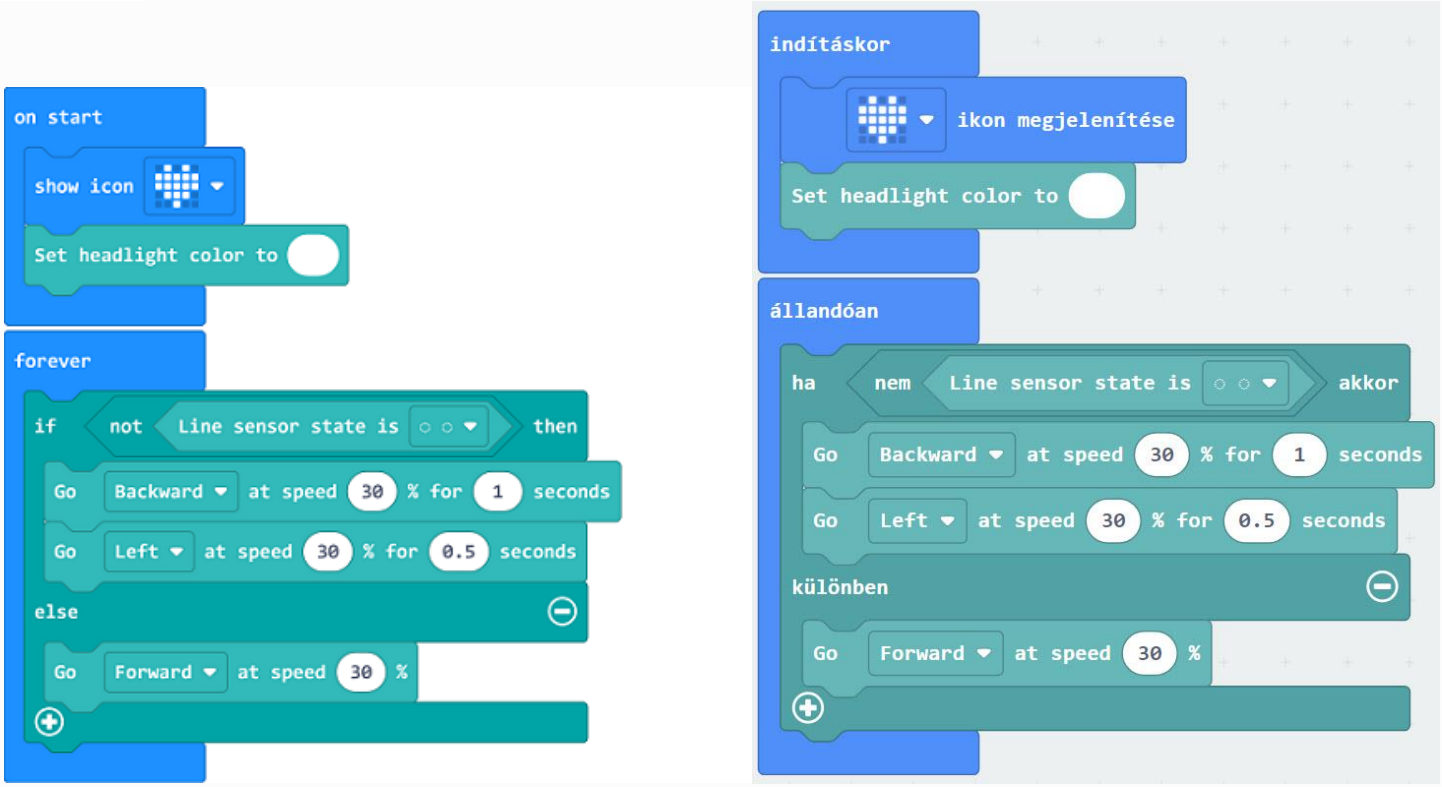


- We need to add a package for programming. Click “Extensions” in the bottom of the drawer and search with “tpbot” in the dialogue box to download it.



##Sample

- Set an icon on the micro:bit display and the headlights in white.
- Judge if the black line was detected in the forever brick, if yes, set the TPBot reversing for one second at the speed of 30% and then turning left for 0.5 second at the same speed; or it moves forward at the speed of 30%.



Link

- Link: https://makecode.microbit.org/_dtPhXL3XxTJC
- You may also download it directly below:

12.5. Conclusion

- Power up to show an icon on the micro:bit display and set the TPBot moving forward with headlights in white. If the black line was detected, it reverses and then turns left to keep moving.

12.6. Exploration

12.7. FAQ

Q: The car does not work with the code in the wiki.

A: It should be the batteries that are lack of power, please try to fix it by adding the value of the speed in the code.