# Intro to Robotics Lab

# Lab 03: Ch04. Kilobot Effectors and Actuators: An unusual way of creating motion

Estimated Time To Completion: *2 hours*Concepts to Explore: Effectors and Actuators

### Introduction

* Load the Kilobot model.
* Understand the principles by which the Kilobot robot moves.
* Move the robot using the code.

### Preliminary Questions

1. What are the actuators of the Kilobot?

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1. How can it translate and rotate?  
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2. What are strengths and weaknesses of the approach?

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### Instructions

1. Read Kilobot \_UserManual 4.3 Kilobots Usage, especially 4.3.5-4.3.7.
2. Load the Kilobot model: Kilobot.ttm and Kilobot\_Controller.ttm.
3. Move Kilobot and explain how its movement is generated.
4. Create your own scene. Add a new Kilobot.
5. Add any other object if needed(e.g. wall) .
6. Create a new script and let the Kilobot use actuator to move together in line and keep their distance in a certain distance.

(hint: you only need to change **s**ome functions of the demo script instead of writing a total new one).

1. Bonus: Repeat the prior steps to move Kilobot inside a shape, e.g. Triangle wall.

### Post-experiment Questions and Further Examination.

1. What are the actuators of the e-puck model?
2. What are strengths and weaknesses of this approach?
3. Except for this actuators, what other actuators you think could be used to move the effectors?