

IVR Practical 2

Shape Recognition

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1 Introduction

This document.....

2 Section

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2.1 SubSection

3 Appendix: New Code

3.1 Final Code

3.1.1 partA.m

```
1 function [] = partA()  
2 % PARTA Part A1 of the assignment  
3  
4 % constants  
5 TIME_STEP = 64;  
6 N = 8;  
7 GOAL_DISTANCE = 300;  
8 DEFAULT_SPEED = 4;  
9 K = 0.01;  
10  
11 % main loop:  
12 % perform simulation steps of TIME_STEP  
    milliseconds  
13 % and leave the controll to the keyboard
```

```

14
15     while wb_robot_step(TIME_STEP) ~= -1
16
17         % read all distance sensors
18         sensor_values = get_sensor_values();
19
20         % sum the values of left sensors
21         left_sensors = sum(sensor_values(1:3));
22
23         % proportional error control
24         error = K*(left_sensors - GOAL_DISTANCE*2);
25
26         % set speeds
27         left_speed = DEFAULT_SPEED + error;
28         right_speed = DEFAULT_SPEED - error;
29
30         wb_differential_wheels_set_speed(left_speed,
31                                         right_speed);
32         wb_robot_step(TIME_STEP);
33     end

```