Team Description Paper

i-bots 7
Team_021

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2 Abstract In the RoboCupJunior Soccer Simulation Challenge our goal was to code a program which let in as little goals as possible. To achieve that, we tried to program a goalkeeper which is always between the ball and the goal. This RoboCup was the first time we coded text based so we tried to keep the program as simple as possible because we both haven't been programming with Python for that long.

3 Introduction

3.1 Team Background

Before we started soccer, Martha Heuer participated in Maze entry in 2019 and Anna Prüßing participated in line entry in 2017 and maze entry in 2018-2020. We weren't in a team before 2021. The RoboCupJunior Soccer Simulation Challenge is our first competion that we participate together.

Anna Prüßing coded the program for the goalkeeper and Martha Heuer coded the program for both of the strikers.

3.2 Team Photo

3.3 Year's highlights

The soccer sim challenge is our first online competition and it's the first time we take part in a World Cup. This year, we have everything we have done learned new.
We have learned how to program text based. We also learned how to work with variable and how to use arc dimension/radians or pi calculates. For the the Programm for the soccer robots we learned how to control the motors and how to rotate around a certain radius. We also learned how to read out coordinates and then work with them.

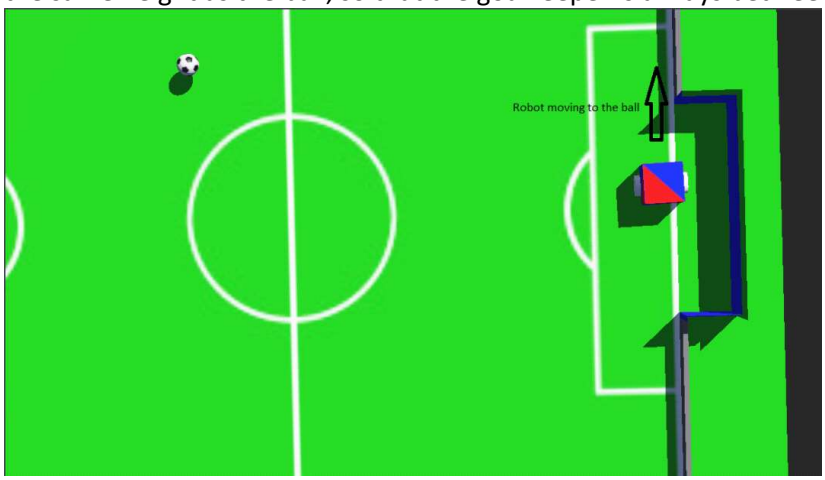
4. Robots and Results

4.1 Hardware (no hardware)

4.2 Software

goalkeeper (robot 1)

At first we had to programm a funktion, which lets us turn around a certain angle. After we did this we used the funktion to drive to the goal. Then we used the x coordinates to stay on the same height as the ball, so that the goalkeeper is always between the ball and the goal.



both of the strikers (robot 2), (robot 3)

We wanted the stikers to follow the ball and to do that we calculate the angle to the ball with the dimension of the arc. We than wanted to not go into the goal of our team and we programmed that by using coodinates and variables so that we in the end had a section where both of the strikers were not allowed to go. We programmed that if the robots would come to the section where they shouldn'd go, they should move back.

4.3 Results

Our strategie was to let in as little goals as possible and to push the ball with the two strikers into the opponent's goal.

5. Future Work

In the future, we want to learn how to program the robots to play with each other. That means to pass the ball to each other and maybe even swap the roles of goalkeeper and strikers in the game

6. References

(no hardware)

https://github.com/RoboCupJuniorTC/rcjsoccer-sim/tree/v0.1-alpha

https://docs.python.org/3/tutorial/index.html