Southern Illinois University Edwardsiville

MRE 320 Sensors and Actuators Group Project

JetBot Track Racing

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teleoperate (manual racing)

Explain your strategy to win each race

For the manual part, the code we used at the beginning controls the left and right wheels respectively. When we debug successfully, we can run, so we think there is no problem. We feel that we can complete the race and achieve good results only by controlling a good speed operation during the race. But the fact is that it is quite difficult to control the left and right wheels separately, which requires a lot of practice. So we changed a group of codes and used four buttons to do the front, back and forth respectively.


XDOX Controller
Xbox 360 Controller (XInput STANDARD GAMEPAD)

INDEX	CONNECTED	MAPPING	TIMESTAMP
0	Yes	standard	1863338.80000

Pose	HapticActuators	Hand	DisplayId	Vibration	Test
n/a	n/a	n/a	n/a	Yes	Vibration

B0	B1	B2	B3	B4	B5	B6	B7
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B8	B9	B10	B11	B12	B13	B14	B15
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B16
0.00

AXIS 0	AXIS 1	AXIS 2	AXIS 3
0.00000	0.00000	0.00000	0.00000
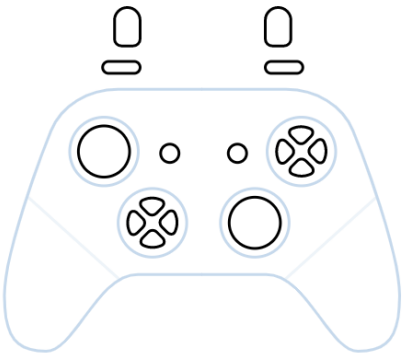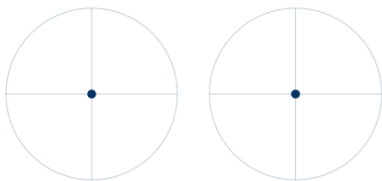
The initial code uses the left and right rocker to control. The left rocker corresponds to AXIS 0 and AXIS 1, and the right rocker corresponds to AXIS 2 and AXIS 3. Because it is extremely difficult to control, the code we replaced uses X, Y, B, A as shown in the figure above to control forward and backward and left and right steering. Later, the time is not enough, so button A controls the advance, X controls the retreat, Y controls the left, and B controls the right.

What went well, and what did not?

The search for code is a smooth part, but sometimes it is unknown what causes the code to report errors and cause problems in the connection of the handle. But the biggest problem is that the initial code is extremely difficult for the control of the left and right wheels. The car is like a newborn baby crawling slowly on the track. After modifying the code, it is obviously much better. It can move forward smoothly. But according to the common sense, the front button (that is, Y) controls the forward, A controls the backward, B controls the right, and X controls the left, which is the ideal state. But the code does let A control the forward, X control the backward, Y control the left, and B control the right. This makes the operation a lot more difficult, but also not smooth.

If you have a chance of do-over, what would you have done differently?

We will modify the code to let Y control the advance, A control the retreat, X control the left, and B control the right. At the same time, we will practice the control of the handle on the car to achieve a better level and zero errors.