

# Understanding the Project and the Blocks Used

This project implements a line follower robot using an FPGA in ChipInventor. The system processes signals from two line sensors and controls the motors using demultiplexers (DEMUX) based on sensor readings.

## Input Pins

- IO69: This pin receives the signal from the left line sensor. It detects whether the robot is on track by identifying a black line on a white surface.
- IO68: This pin receives the signal from the right line sensor.

## Constant Value

- A constant logic value 1 represents the activation signal for the motors. It ensures a high logic level is always available for routing by the demultiplexers.

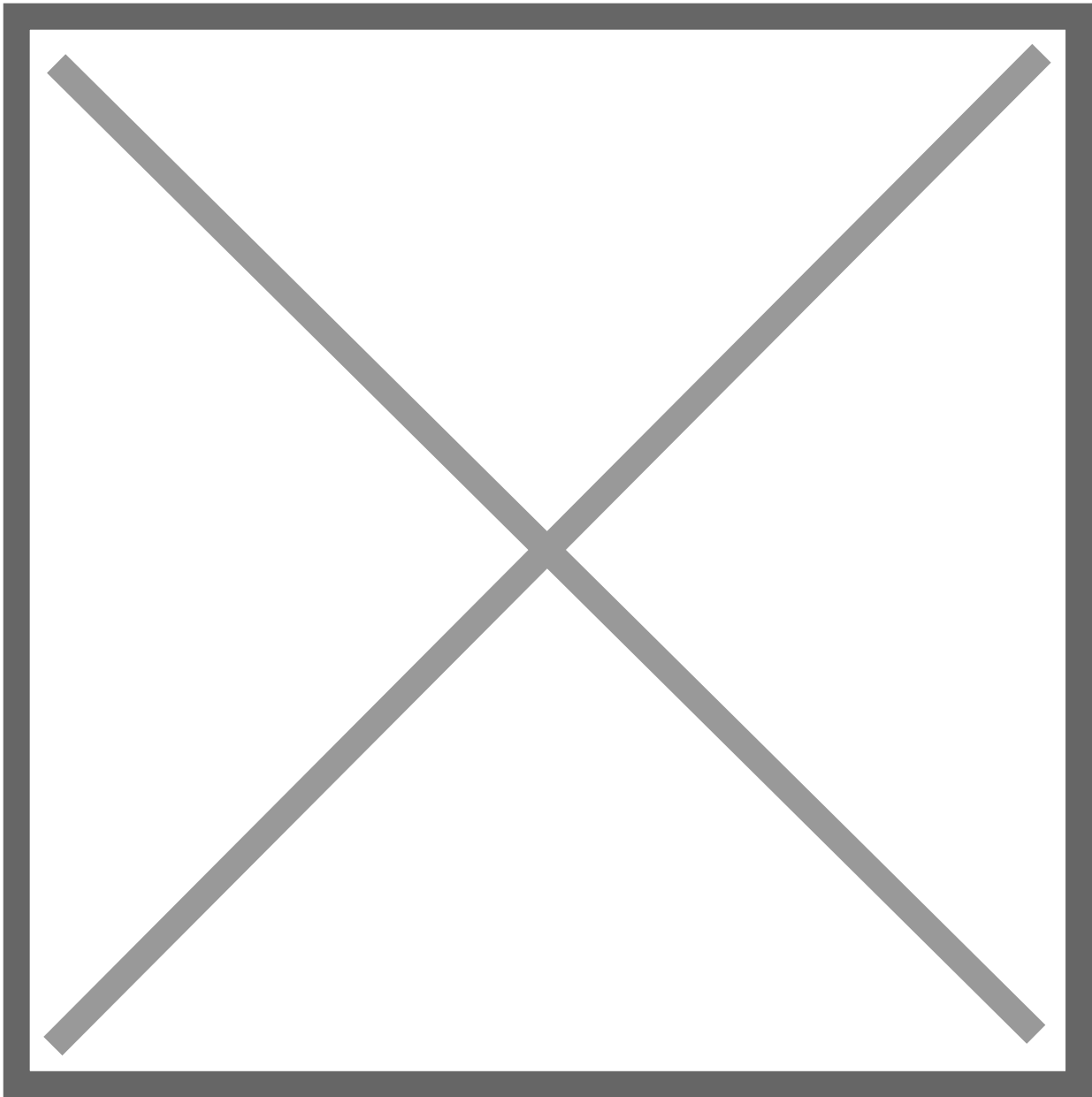
## DEMUX Blocks (demux2)

- Two demux2 blocks are used to control the motors of the robot:
  - They have three inputs:
    - in: The activation signal (logic 1).
    - select: The control signal from the line sensors (IO68 or IO69).
    - clock in: Not used in this configuration (optional in some DEMUX blocks).
  - Outputs:
    - outa: Routes the signal if select = 0.
    - outb: Routes the signal if select = 1.
- Each demux directs the activation signal to one of its two outputs depending on the line sensor reading.

## Output Pins

- The demux outputs are connected to digital output pins:
  - IO57 and IO56: Controlled by the left motor DEMUX.
  - IO55 and IO54: Controlled by the right motor DEMUX.

- These pins can be wired to control H-bridges, motor drivers, or directly signal LEDs for testing.



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Revision #1

Created 17 March 2025 12:27:01 by Caroline

Updated 17 March 2025 12:28:17 by Caroline