



# Marble Motors

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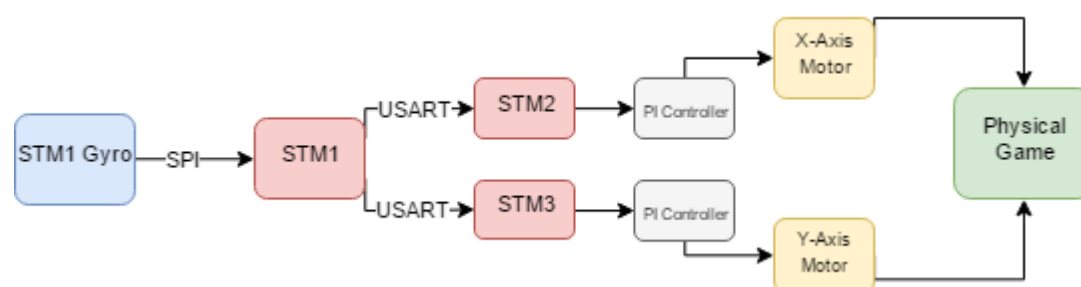
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ECE 5780 Mini-Project

University of Utah

## Overview

Using SPI on the first board(STM1), we communicate between the board and the Gyroscope. The information the board receives from the gyroscope is then sent to two separate STM(STM2 and STM3) boards via USART. Each of these boards uses a PI Controller to control a motor attached to each board. Each motor controls an axis on the two dimensional marble board. The goal of the project is to use the Gyroscope of the first board to get a marble from one side of the maze to the other side.



## Specifications

### Pinout

#### SPI

- PB13: SPI2\_SCK
- PB14: SPI2\_MISO
- PB15: SPI2\_MOSI
- PC0: Gyro chip-select

#### LEDS

- PC6
- PC7
- PC8
- PC9

#### USARTx2

- PC4: USART3\_TX
- PC5: USART3\_RX

#### Motor(x2)

- PB8: PWM
- PA4: DIRA
- PA5: DIRB
- PB4: ENCA
- PB5: ENCB

