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/*
File Name: Dinsmore1
Date Started: 3/24/13
Compass: Dinsmore 1490 Digital Compass

Program Description: Dinsmore compass sends LOWS to
Arduino board that prints compass direction to the
serial monitor.

*/

const int compassOut1 = 2; // assign name "compassOut1" to Pin 2
const int compassOut2 = 3; // assign name "compassOut2" to Pin 3
const int compassOut3 = 4; // assign name "compassOut3" to Pin 4
const int compassOut4 = 5; // assign name "compassOut4" to Pin 5

int compassOut1State = 0; // create variable "compassOut1State",
// whose value is 0, and whose
// type is int.

int compassOut2State = 0;
int compassOut3State = 0;
int compassOut4State = 0;

void setup() {
  Serial.begin(9600);
  pinMode(compassOut1, INPUT); // initialize the compassOut1 pin
// as an input

  pinMode(compassOut2, INPUT);
  pinMode(compassOut3, INPUT);
  pinMode(compassOut4, INPUT);
}

void loop() {
  compassOut1State = digitalRead(compassOut1); // read the state o
// compassOut1

  compassOut2State = digitalRead(compassOut2);
  compassOut3State = digitalRead(compassOut3);
  compassOut4State = digitalRead(compassOut4);
}

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// Check states of each compass output and send compass bearing to
  if (compassOut1State ==LOW & compassOut2State ==HIGH &
      compassOut3State ==HIGH & compassOut4State ==HIGH) {
    Serial.println("N");
  }
  if (compassOut1State ==LOW & compassOut2State ==LOW &
      compassOut3State ==HIGH & compassOut4State ==HIGH) {
    Serial.println("NE");
  }
  if (compassOut1State ==HIGH & compassOut2State ==LOW &
      compassOut3State ==HIGH & compassOut4State ==HIGH) {
    Serial.println("E");
  }
  if (compassOut1State ==HIGH & compassOut2State ==LOW &
      compassOut3State ==LOW & compassOut4State ==HIGH) {
    Serial.println("SE");
  }
  if (compassOut1State ==HIGH & compassOut2State ==HIGH &
      compassOut3State ==LOW & compassOut4State ==HIGH) {
    Serial.println("S");
  }
  if (compassOut1State ==HIGH & compassOut2State ==HIGH &
      compassOut3State ==LOW & compassOut4State ==LOW) {
    Serial.println("SW");
  }
  if (compassOut1State ==HIGH & compassOut2State ==HIGH &
      compassOut3State ==HIGH & compassOut4State ==LOW) {
    Serial.println("W");
  }
  if (compassOut1State ==LOW & compassOut2State ==HIGH &
      compassOut3State ==HIGH & compassOut4State ==LOW) {
    Serial.println("NW");
  }
  }
delay(500); // pause program 500 ms
}

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