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// This program outputs (BCD) to a 4511 decoder.
// This program uses a pot to select the numerals.

int bit_1 = 4;
int bit_2 = 5;
int bit_3 = 6;
int bit_4 = 7;

int pot = A1;
int potvalue;

void setup() {
  pinMode(bit_1, OUTPUT);
  pinMode(bit_2, OUTPUT);
  pinMode(bit_3, OUTPUT);
  pinMode(bit_4, OUTPUT);
  pinMode(pot, INPUT);
}

void ZERO() {
  digitalWrite(bit_1, LOW);
  digitalWrite(bit_2, LOW);
  digitalWrite(bit_3, LOW);
  digitalWrite(bit_4, LOW);
}

void ONE() {
  digitalWrite(bit_1, HIGH);
  digitalWrite(bit_2, LOW);
  digitalWrite(bit_3, LOW);
  digitalWrite(bit_4, LOW);
}

void TWO() {
  digitalWrite(bit_1, LOW);
  digitalWrite(bit_2, HIGH);
  digitalWrite(bit_3, LOW);
  digitalWrite(bit_4, LOW);
}

void THREE() {
  digitalWrite(bit_1, HIGH);
  digitalWrite(bit_2, HIGH);
  digitalWrite(bit_3, LOW);
  digitalWrite(bit_4, LOW);
}

void FOUR() {
  digitalWrite(bit_1, LOW);
  digitalWrite(bit_2, LOW);
  digitalWrite(bit_3, HIGH);
  digitalWrite(bit_4, LOW);
}

void FIVE() {
  digitalWrite(bit_1, HIGH);
  digitalWrite(bit_2, LOW);
  digitalWrite(bit_3, HIGH);
  digitalWrite(bit_4, LOW);
}

void SIX() {
  digitalWrite(bit_1, LOW);
  digitalWrite(bit_2, HIGH);
  digitalWrite(bit_3, HIGH);
  digitalWrite(bit_4, LOW);
}

void SEVEN() {
  digitalWrite(bit_1, HIGH);
  digitalWrite(bit_2, HIGH);
  digitalWrite(bit_3, HIGH);
  digitalWrite(bit_4, LOW);
}

void EIGHT() {
  digitalWrite(bit_1, LOW);
  digitalWrite(bit_2, LOW);
  digitalWrite(bit_3, LOW);
  digitalWrite(bit_4, HIGH);
}

void NINE() {
  digitalWrite(bit_1, HIGH);
  digitalWrite(bit_2, LOW);
  digitalWrite(bit_3, LOW);
  digitalWrite(bit_4, HIGH);
}

void loop() {
  potvalue = analogRead(pot);

  if (potvalue < 102) {
    ZERO();
  }
  if (potvalue > 102 && potvalue < 205) {
    ONE();
  }
  if (potvalue > 204 && potvalue < 307) {
    TWO();
  }
  if (potvalue > 306 && potvalue < 409) {
    THREE();
  }
  if (potvalue > 408 && potvalue < 511) {
    FOUR();
  }
  if (potvalue > 510 && potvalue < 613) {
    FIVE();
  }
  if (potvalue > 612 && potvalue < 715) {
    SIX();
  }
  if (potvalue > 714 && potvalue < 817) {
    SEVEN();
  }
  if (potvalue > 816 && potvalue < 919) {
    EIGHT();
  }
  if (potvalue > 918) {
    NINE();
  }
}

```