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// This program uses arrays and bitReading to display the numerals.
// The code is entered as a three digit number.
// The digits are selected using the pot and the button.

byte segA = 11;
byte segB = 10;
byte segC = 9;
byte segD = 8;
byte segE = 7;
byte segF = 6;
byte segG = 5;
byte button = 4;
byte LOCKED = 3;
byte UNLOCKED = 2;
byte pot = A0;
byte numeral;
int potValue;
byte Segment[] {segA, segB, segC, segD, segE, segF, segG};
                // ZERO, ONE, TWO, THREE, FOUR, FIVE, SIX, SEVEN, EIGHT, NINE, blank
byte NUMERALS[] {0x3F, 0x06, 0x5B, 0x4F, 0x66, 0x6D, 0x7D, 0x27, 0x7F, 0x6F, 0x00};
int CODE = 274;          //This is the number to unlock.
byte selNum = 0;        //This is the number that you are entering.
byte blank = 10;

void segDisp(){        //Displays the numerals on the 7seg display.
  for(int bitCount = 0; bitCount < 7; bitCount++){
    digitalWrite(Segment[bitCount], bitRead(NUMERALS[numeral], bitCount));
  }
}

void selectNum(){     //Selects the numerals for your input number.
  while(digitalRead(button) == LOW){
    potValue = analogRead(pot);
    numeral = potValue/103; //this gives us values 0 - 9
    segDisp();
    delay(10);
  }
}

void setup() {
  pinMode(segA, OUTPUT);
  pinMode(segB, OUTPUT);
  pinMode(segC, OUTPUT);
  pinMode(segD, OUTPUT);
  pinMode(segE, OUTPUT);
  pinMode(segF, OUTPUT);
  pinMode(segG, OUTPUT);
  pinMode(LOCKED, OUTPUT);
  pinMode(UNLOCKED, OUTPUT);
  pinMode(button, INPUT);
  pinMode(pot, INPUT);
}

```





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void loop() {
  digitalWrite(LOCKED,1);
  digitalWrite(UNLOCKED,0);
  numeral = blank;
  segDisp();
  while(digitalRead(button) == LOW){
    delay(10);
  }
  delay(500);

  //select the first digit of your input number
  selectNum();
  selNum = numeral*100;
  numeral = blank;
  segDisp();
  delay(500);

  //select the second digit of your input number
  selectNum();
  selNum = selNum + (numeral*10);
  numeral = blank;
  segDisp();
  delay(500);

  //select the third digit of your input number
  selectNum();
  selNum = selNum + numeral;
  numeral = blank;
  segDisp();
  delay(500);

  //check to see if your input number is the same as the CODE
  if(selNum == CODE){
    digitalWrite(LOCKED,0);
    digitalWrite(UNLOCKED,1);
    while(digitalRead(button) == LOW){ //push button to re-lock
      delay(10);
    }
  }
  else{
    for(int flashCount = 0;flashCount < 7;flashCount++){
      digitalWrite(LOCKED,0);
      delay(100);
      digitalWrite(LOCKED,1);
      delay(100);
    }
  }
  delay(1000);
}
```

