ŘEŠENÍ ÚLOH

Úkol A)

```
#include <Wire.h>
#include <ADXL345.h>

ADXL345 acc;

const int row[8] = {2, 7, 19, 5, 13, 18, 12, 16};
const int col[8] = {6, 11, 10, 3, 17, 4, 8, 9};

int pixels[8][8];

int x = 5;
int y = 5;

void setup(){
    acc.begin();

    for(int i = 0; i < 8; i++){
        pinMode(col[i], OUTPUT);
        pinMode(row[i], OUTPUT);
        digitalWrite(row[i], LOW);
    }


   for(int x = 0; x < 8; x++) {
      for(int y = 0; y < 8; y++) {
        pixels[x][y] = HIGH;
      }
    }
}

void loop(){
    readSensors();
    refreshScreen();
}

void readSensors(){
  double pitch, roll, Xg, Yg, Zg;
  acc.read(&Xg, &Yg, &Zg);

  roll  = (atan2(-Yg, Zg)*180.0)/M_PI;
  pitch = (atan2(Xg, sqrt(Yg*Yg + Zg*Zg))*180.0)/M_PI;
```

```
42
43    pixels[x][y] = HIGH;
44    x = 7 - map(roll, -20, 20, 0, 7);
45    y = map(pitch, -20, 20, 0, 7);
46    pixels[x][y] = LOW;
47  }
48
49  void refreshScreen(){
50    for(int j = 0; j<8;j++){
51      digitalWrite(row[j], HIGH);
52      for(int k = 0; k<8; k++){
53        int thisPixel = pixels[j][k];
54        digitalWrite(col[k], thisPixel);
55        if (thisPixel == LOW) {
56          digitalWrite(col[k], HIGH);
57        }
58      }
59     digitalWrite(row[j], LOW);
60    }
61  }
66
```