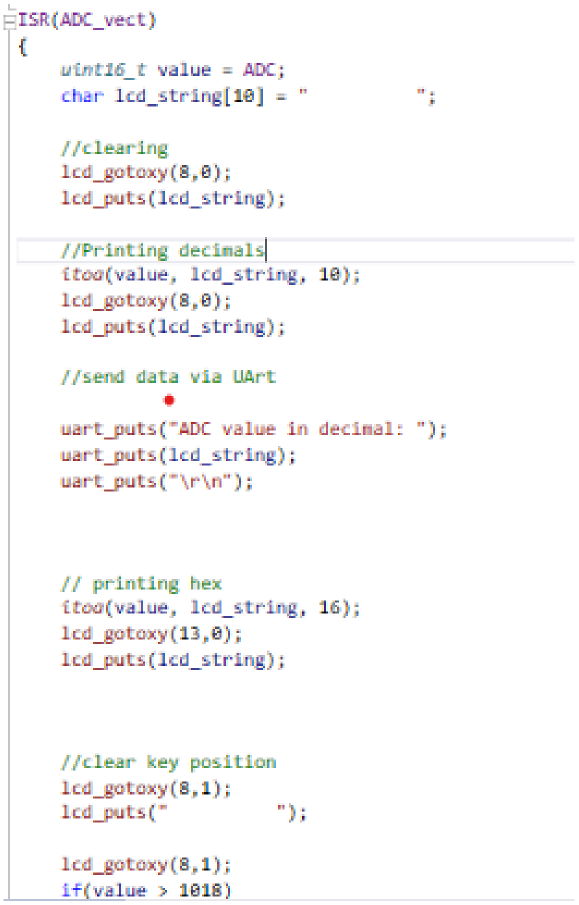
Kamil Káčer 211777

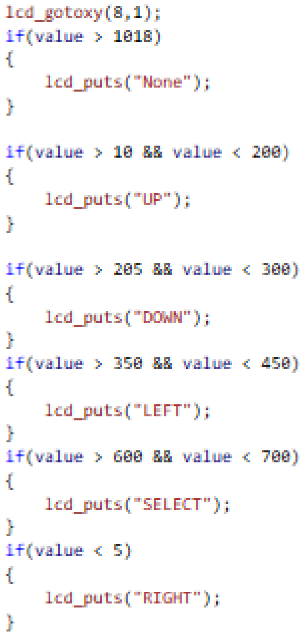
1. Table with voltage divider

Push Botton	PC0[A0] Voltage	DC value calculate	ADC value measured
Right	0	0	0
Up	0.495	101	0.5
Down	1.2	245	1.2
Left	1.96	403	1.97
Select	3.16	650	3.18
none	5	1023	5

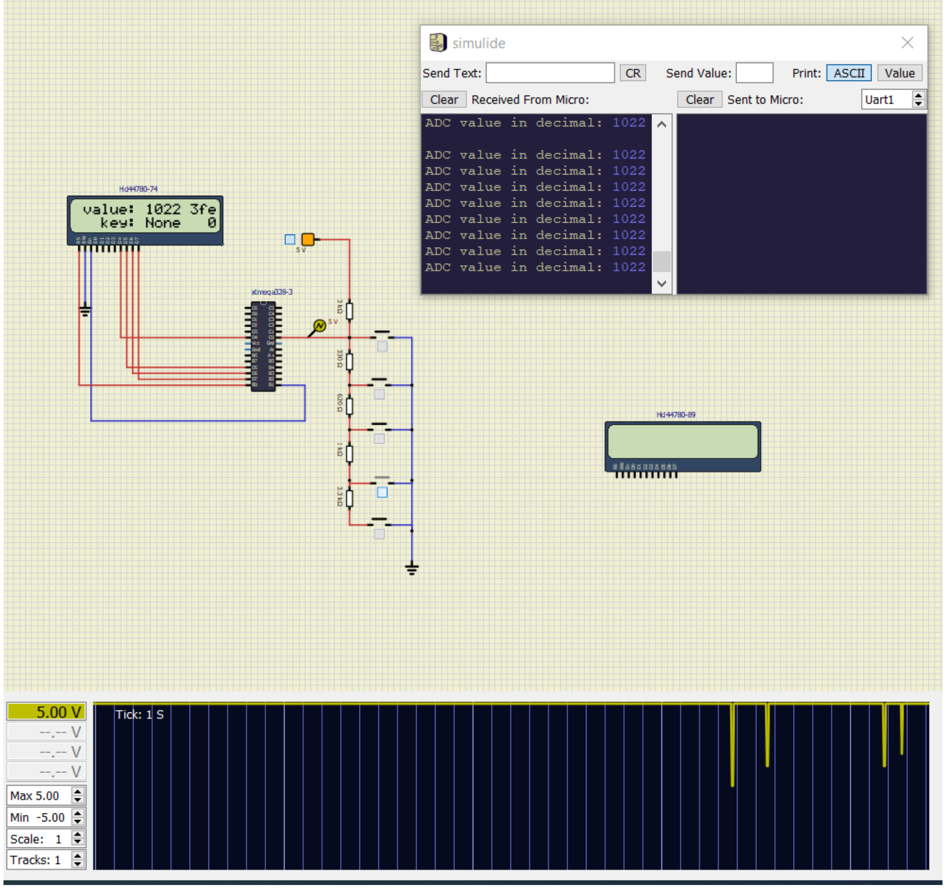
2.



```
ISR(ADC_vect)
{
    uint16_t value = ADC;
    char lcd_string[10] = "          ";

    //clearing
    lcd_gotoxy(8,0);
    lcd_puts(lcd_string);

    //Printing decimals
    itoa(value, lcd_string, 10);
    lcd_gotoxy(8,0);
    lcd_puts(lcd_string);

    //send data via UArt

    uart_puts("ADC value in decimal: ");
    uart_puts(lcd_string);
    uart_puts("\r\n");



    // printing hex
    itoa(value, lcd_string, 16);
    lcd_gotoxy(13,0);
    lcd_puts(lcd_string);



    //clear key position
    lcd_gotoxy(8,1);
    lcd_puts("          ");

    lcd_gotoxy(8,1);
    if(value > 1018)
```



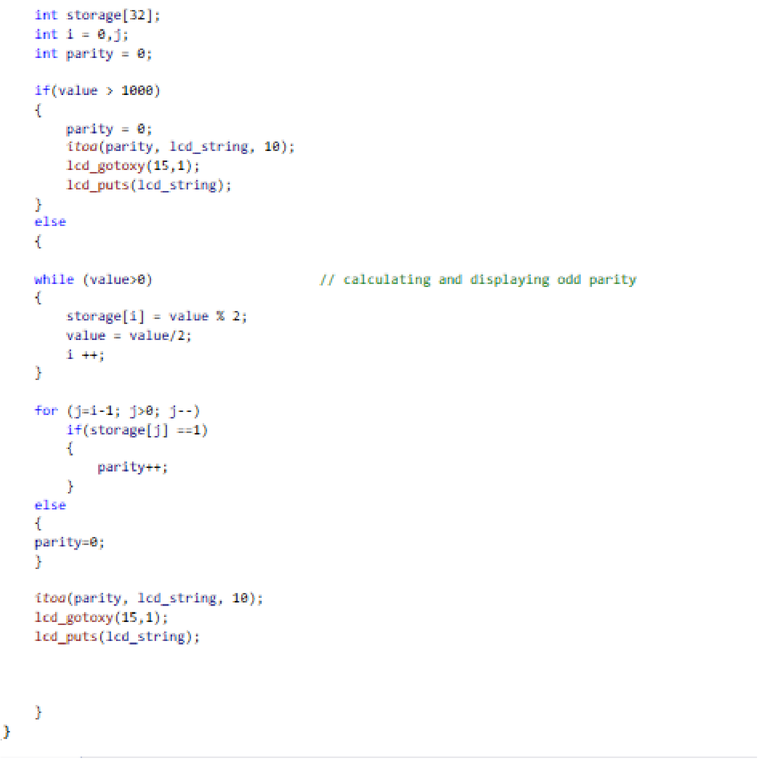
```
lcd_gotoxy(8,1);
if(value > 1018)
{
    lcd_puts("None");
}

if(value > 10 && value < 200)
{
    lcd_puts("UP");
}

if(value > 205 && value < 300)
{
    lcd_puts("DOWN");
}
if(value > 350 && value < 450)
{
    lcd_puts("LEFT");
}
if(value > 600 && value < 700)
{
    lcd_puts("SELECT");
}
if(value < 5)
{
    lcd_puts("RIGHT");
}
```



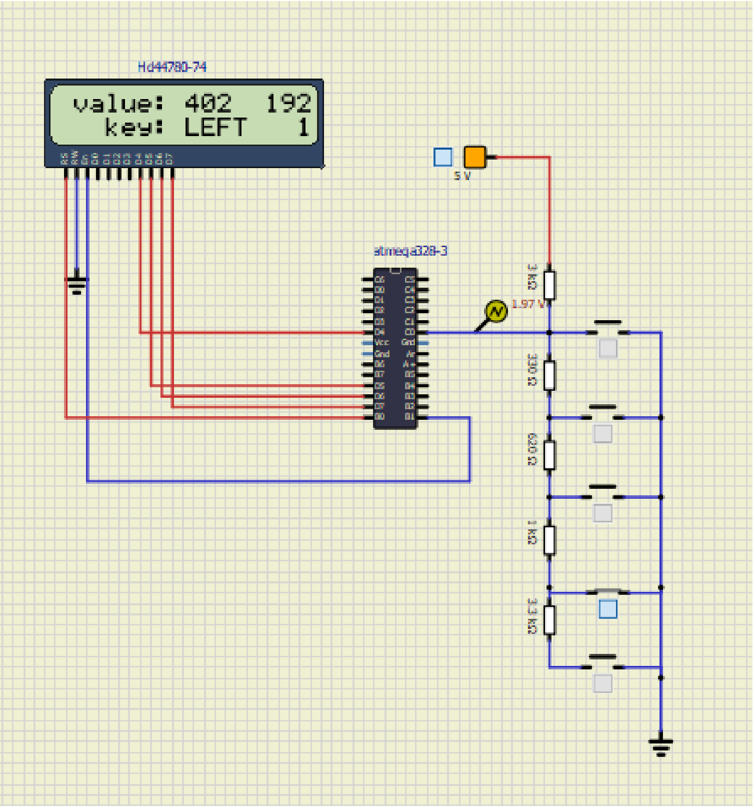
```
ADC value in decimal: 1022

ADC value in decimal: 1022
ADC value in decimal: 1022
ADC value in decimal: 1022
ADC value in decimal: 1022
ADC value in decimal: 1022
ADC value in decimal: 1022
ADC value in decimal: 1022
ADC value in decimal: 1022
```

```
 value: 1022 3fe
   key: None   0
```

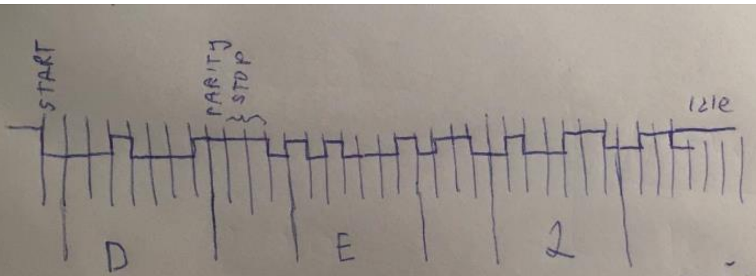
3.



```
    int storage[32];
    int i = 0,j;
    int parity = 0;

    if(value > 1000)
    {
        parity = 0;
        itoa(parity, lcd_string, 10);
        lcd_gotoxy(15,1);
        lcd_puts(lcd_string);
    }
    else
    {

    while (value>0)                    // calculating and displaying odd parity
    {
        storage[i] = value % 2;
        value = value/2;
        i ++;
    }

    for (j=i-1; j>0; j--)
        if(storage[j] ==1)
        {
            parity++;
        }
    else
    {
    parity=0;
    }

    itoa(parity, lcd_string, 10);
    lcd_gotoxy(15,1);
    lcd_puts(lcd_string);



    }
}
```



```
value: 402   192
  key: LEFT    1
```



DLŽKA 1 BIT $208 \cdot 10^{-6}$ sec