## Zadanie 3 (Cvičenie 5)

## Téma: Prerušenia, UART a oddelený preklad

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GitHub link: <https://github.com/xbalogm1/VRS_CV5>

Z dôvodu časovej tiesne sme bohužiaľ pripravili iba časť 1., ďalšie úlohy sme teda v praxi nemali možnosť impementovať.

Príprava na prácu na cvičení

1. Nastavenie NVIC prerušenia:

NVIC\_PriorityGroupConfig(NVIC\_PriorityGroup\_4);

NVIC\_InitTypeDef NVIC\_InitStructure;

NVIC\_InitStructure.NVIC\_IRQChannel = *ADC1\_IRQn*;//EXTI0\_IRQn;

//zoznam prerušení nájdete v súbore stm32l1xx.h

NVIC\_InitStructure.NVIC\_IRQChannelPreemptionPriority = 5;

NVIC\_InitStructure.NVIC\_IRQChannelSubPriority = 0;

NVIC\_InitStructure.NVIC\_IRQChannelCmd = *ENABLE*;

NVIC\_Init(&NVIC\_InitStructure);

1. Povolenie prerušenia EOC/OVR

ADC\_ITConfig(ADC1, ADC\_IT\_EOC, *ENABLE*);

ADC\_ITConfig(ADC1, ADC\_IT\_OVR, *ENABLE*);

1. Overenie zdroju prerušenia v prípade ADC

**char** eoc\_flag;

**char** ovr\_flag;

eoc\_flag = ADC\_GetFlagStatus(ADC1, ADC\_FLAG\_EOC);

ovr\_flag = ADC\_GetFlagStatus(ADC1, ADC\_FLAG\_OVR);

GPIO\_InitTypeDef GPIO\_init\_struct2;

GPIO\_init\_struct2.GPIO\_Pin = GPIO\_Pin\_9 | GPIO\_Pin\_10;

GPIO\_init\_struct2.GPIO\_Mode = *GPIO\_Mode\_AF*;

GPIO\_init\_struct2.GPIO\_OType = *GPIO\_OType\_PP*;

GPIO\_init\_struct2.GPIO\_PuPd = *GPIO\_PuPd\_NOPULL*;

GPIO\_init\_struct2.GPIO\_Speed = *GPIO\_Speed\_40MHz*;

GPIO\_Init(GPIOA, &GPIO\_init\_struct2);

1. Nastavenie periférie USART

GPIO\_PinAFConfig(GPIOA, GPIO\_PinSource9, GPIO\_AF\_USART1); //USART1\_TX

GPIO\_PinAFConfig(GPIOA, GPIO\_PinSource10, GPIO\_AF\_USART1); //USART1\_RX

//nastavenie preriférie USART

RCC\_APB2PeriphClockCmd(RCC\_APB2Periph\_USART1, *ENABLE*);

USART\_InitStructure.USART\_BaudRate = 9600;

USART\_InitStructure.USART\_WordLength = USART\_WordLength\_8b;

USART\_InitStructure.USART\_StopBits = USART\_StopBits\_1;

USART\_InitStructure.USART\_Parity = USART\_Parity\_No;

USART\_InitStructure.USART\_HardwareFlowControl = USART\_HardwareFlowControl\_None;

USART\_InitStructure.USART\_Mode = USART\_Mode\_Rx | USART\_Mode\_Tx;

USART\_Init(USART1, &USART\_InitStructure);

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1. Nastavenie NVIC prerušenia

NVIC\_PriorityGroupConfig(NVIC\_PriorityGroup\_4);

NVIC\_InitTypeDef NVIC\_InitStructureUsart;

NVIC\_InitStructureUsart.NVIC\_IRQChannel = *USART1\_IRQn*; //zoznam prerušení nájdete v súbore stm32l1xx.h

NVIC\_InitStructureUsart.NVIC\_IRQChannelPreemptionPriority = 6;

NVIC\_InitStructureUsart.NVIC\_IRQChannelSubPriority = 0;

NVIC\_InitStructureUsart.NVIC\_IRQChannelCmd = *ENABLE*;

NVIC\_Init(&NVIC\_InitStructureUsart);

1. Povolenie prerušenia iba pre flag RXNE

//povolenie prerušenia iba pre flag RXNE

USART\_ITConfig(USART1,USART\_IT\_RXNE,*ENABLE*);

//zapnutie periférie ussart

USART\_Cmd(USART1,*ENABLE*);