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;1DT301, Computer Technology I
:Date: 2019-10-11
:Author:
 Student name 1:
Student name 2:
                    Einar van de Velde
                    Abdulla Mehdi
;Lab number:
                    4.
                    Task 5.
:Title:
                    STK600, CPU ATmega2560.
;Hardware:
:Function:
                    Serial communication using interrupt based UART
;Input ports:
                    None.
                    PORTB & LEDs.
;Output ports:
:Subroutines:
                    None.
;Included files:
                    m2560def.inc
;Other information:
Changes in program:
     File Created (2019-10-11)
          Program is runnable (2019-10-12)
.include"m2560def.inc"
.CSEG
.org 0x00
rjmp START
.org URXC1ADDR
rjmp GET CHAR
.org 0x72
START:
      ldi r20, high(RAMEND) ; Load Immediate
      out SPH, r20
      Idi r20, low(RAMEND)
      out SPL, r20
      ldi r17, 0xFF
```

out DDRB, r17

ldi r17, 0x55 out PORTB, r17

ldi r17, 12

sts UBRR1L, r17 ; Store Direct To SRAM

ldi r17, 0b10011000 sts UCSR1B, r17

sei ; Enable Global Interrupts

MAIN:

nop ; No Operation

rjmp MAIN

GET_CHAR:

lds r20, UCSR1A ; Load Direct from SRAM

lds r16, UDR1

PORT_OUTPUT:

com r16 ; Ones Compliment

out portb, r16 com r16

PUT CHAR:

lds r20, UCSR1A

sts UDR1, r16

reti ; Interrupt Return