```
/*made by darsh
code for implementation of usart. connect lcd to your microcontroller. open hyperterminal and set baud rate
2400 and com1 and flow none.

*/

#include<avr/io.h>
#include<delay.h>
#include<interrupt.h>
#include "lcd.h"
void InitUART( unsigned int BaudRate );
unsigned char ReceiveByte( void );
void TransmitByte( unsigned char data );


int main(void)

{     unsigned char a;
      unsigned int i,j;



          DDRD=0X0F; // txd and rxd pins are present

          DDRC=0xFF;// leds for debugging

   InitUART( 25 ); // 2400 bps @ 1MHz hence value of UBBR=25 . refer datasheet
   lcd_init(LCD_DISP_ON);                                             /* initialize display, cursor off */

   for (;;)                                                                     /* loop forever */
{
   for(i=0;i<2;i++)                 // 2 lines of lcd
     {
          for(j=0;j<16;j++)      //  16 characters in each line
            {
                    a=ReceiveByte();  // recieves data from hyperterminal
                    _delay_ms(10);
                    lcd_gotoxy(j,i);    // goes to specified position
                    lcd_putc(a);   // display the character
                    _delay_ms(50);// delay imp so that value can be displayed on lcd

                    PORTC=0xff; // led on after display
                    TransmitByte(a);  // transit it back to hyperterminal
                    _delay_ms(10);
                    PORTC=0x00;

                    }
            }


   }
}
// -----------------INITIALIZE USART--------------------------------------
 void InitUART( unsigned int BaudRate)
```

```
  {
    UBRRH=0x00;
    UBRRL = (unsigned char)BaudRate;                    /*  Set the baud rate */
    UCSRB = 0b00011000; // enable transmitter and reciever
    UCSRC = 0b10000110;  // 8 bit data, no parity bit, 1 stop bit.
  }

//------------FUNCTIONS TO READ USART------------------------------

  unsigned char ReceiveByte( void )
  {unsigned char data;
   while ( (UCSRA &  0x80) == 0x00 )
 {;}     /*  Wait for incomming data   */
   data=UDR;
   return data;/* Return the   data */
  }


//------------FUNCTIONS TO WRITE USART-----

  void TransmitByte( unsigned char data )
  {
   while ( (UCSRA & 0x20) == 0x00)
{;}        /* Wait for   empty transmit buffer */
   UDR =  data;  /* Start transmittion   */
  }
```