Build Robot Create Science

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BRiCS Training Program 2012

By

BRiCS

Together with

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(Incubated at IIT K)

GSM

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GSM

CODE I:

```
#include <avr/io.h>
#include <avr/interrupt.h>
#include <util/delay.h>

char A[100]="      ",index=0;

ISR(USART_RXC_vect) {
       A[index] = UDR;
       if (A[index]==10)index = 0;
       else index++;
}

void main() {
       LCDinit();
       LCDclr();
       set_uartbaud(9600);
       enable_uart_rxcint();
       sei();
       LCDdisplay("****************");
       _delay_ms(1000);
       while(1){
              sendstring_uart("AT\r");
              _delay_ms(1000);
              LCDGotoXY(0,1);
              LCDstring(A,20);;
       }
}
```

This Code will send “AT” to GSM MODEM and it will print the text received from the MODEM.

CODE II:

```
#include <avr/io.h>
#include <avr/interrupt.h>
#include <util/delay.h>

char A[100]="      ",index=0;

ISR(USART_RXC_vect) {
       A[index] = UDR;
       if (A[index]==10)index = 0;
       else index++;
}
void main() {
       LCDinit();
       LCDclr();
       set_uartbaud(9600);
       enable_uart_rxcint();
```

```
	sei();
	LCDdisplay("****************");
	_delay_ms(1000);
	while(1){
		sendstring_uart("ATD*123#\r");
		_delay_ms(3000);
		_delay_ms(3000);
		_delay_ms(3000);
		LCDGotoXY(0,1);
		LCDstring(A,20);

	}
}
```

This code will call at *123# and it will print the replied message on the LCD display. You can use “LCDShiftRight(1);” to see complete message on display.

CODE III:

```
#include <avr/io.h>
#include <avr/interrupt.h>
#include <util/delay.h>
#include <uart_lib.h>
#include <stdio.h>
char A[200]="  ",index=0;

ISR(USART_RXC_vect) {
	A[index] = UDR;
	if (A[index]==10)index = 0;
	else index++;
}

int main() {
	set_uartbaud(9600);
	enable_uart_rxcint();
	sendchar_uart(0x1a);
	sei();
	while(1){
		sendstring_uart("ATD09415511117;\r\n");
		_delay_ms(1000);
		delay=0;
		while(1){
			sendstring_uart("AT+CLCC\r\n");		_delay_ms(100);
			if(strncmp(A+5,": 1,0,3,0,0,",10)==0)break;
			if(delay>100)break;
			delay++;
		}
		sendstring_uart("ATH\r\n");
		_delay_ms(2000);
	}
	return 0;
}
```

This Code will give a continuous missed call to the mobile number specified in code..

CODE IV:

```
#include <avr/io.h>
#include <avr/interrupt.h>
#include <util/delay.h>
#include <uart_lib.h>
#include <stdio.h>

static char line=0, status = 0,index = 0,mob[10] = "          ",A[20]="asdfghjk",b,c;
ISR(USART_RXC_vect){
	c = UDR;
	if(index<16)A[index]=c;
	index++;
	if (c==0x0A){status|=1;index = 0;line=0;}

	else if(index == 5){
			if((strncmp(A,"+CMTI",5) == 0)){ status|=4;line=1;}
		else if((strncmp(A,"+CLIP",5) == 0)){ status|=2;line=1;}
		else if((strncmp(A,"NO CA",5) == 0)){ status&=~2;line=1;}
	}
	else if(index>11&index<22&(status>>1))mob[index-12]=c;
}



int main(void) {
	DDRA=255;
	set_uartbaud(9600);
	enable_uart_rxcint();
	LCDinit();
	LCDclr();
	sei();
	_delay_ms(2000);
	sendstring_uart("AT\r");
	sendstring_uart("at+clip=1\r");
	_delay_ms(2000);
	while (1) {
		if(status==3){
			_delay_ms(100);
		if(status>>1&(strncmp(mob,"9750058326",10) == 0)){
			sendstring_uart("ath\r");
			PORTA=255;
			status=1;
		}
		if(status>>1&(strncmp(mob,"8754515884",10) == 0)){
			sendstring_uart("ath\r");
			PORTA=0;
			status=1;
		}}
```

```
                LCDGotoXY(0,0);
                LCDstring(A,16);
                LCDGotoXY(0,1);
                LCDsendChar(status+48);
                LCDsendChar(30);
                LCDstring(mob,10);
        }
}
```

This code will switch on/off the LEDs on Port-A when you will call on it from two numbers specified in codes.

CODE V:

```
#include <avr/io.h>
#include <avr/interrupt.h>
#include <util/delay.h>
#include <uart_lib.h>
#include <stdio.h>



static char b,c,line=0, status = 0,index = 0,mob[10] = "          ",A[20]="asdfghjk";
ISR(USART_RXC_vect){
        c = UDR;
        if(index<16)A[index]=c;
        index++;
        if (c==0x0A){status|=1;index = 0;line=0;}

        else if(index == 5){
                        if((strncmp(A,"+CMTI",5) == 0)){ status|=4;line=1;}
                else if((strncmp(A,"+CLIP",5) == 0)){ status|=2;line=1;}
                else if((strncmp(A,"NO CA",5) == 0)){ status&=~2;line=1;}
        }
        else if(index>11&index<22&(status>>1))mob[index-12]=c;
}

int main(void) {
        DDRA=255;
        set_uartbaud(9600);
        enable_uart_rxcint();
        LCDinit();
        LCDclr();
        sei();
        _delay_ms(2000);
        sendstring_uart("AT\r");
        sendstring_uart("at+clip=1\r");
        _delay_ms(2000);
        while (1) {
                if(status==3){
                        _delay_ms(100);
                if(status>>1&(strncmp(mob,"9750058326",10) == 0)){
                        sendstring_uart("ath\r");
```

```
                        PORTA=~PORTA;
                        status=1;
                }
                }
                LCDGotoXY(0,0);
                LCDstring(A,16);
                LCDGotoXY(0,1);
                LCDsendChar(status+48);
                LCDsendChar(30);
                LCDstring(mob,10);
        }
}
```

This code will switch on/off the LEDs on Port-A when you will call on it from single number specified in codes.

CODE VI:

```
#include <avr/io.h>
#include <avr/interrupt.h>
#include <util/delay.h>
#include "lcd_lib.h"
#include <uart_lib.h>
#include <string.h>

unsigned char mob[10]="          ",sms[100]="                ";
int index=0;
char A[50]="      ",status=0,line=0,sts=0;

ISR(USART_RXC_vect) {
        char c=UDR;
        A[index]=c;
        index++;
        if (c==0x0A){
                status|=1;
                index = 0;
                if((status>>3)%2){status|=16;status&=~8;}
                else status&=~16;
        }
        else if((index == 5)&((status>>4)%2==0)){
                     if((strncmp(A,"OK",2) == 0)){ status|=1;}
                else if((strncmp(A,"+CLIP",5) == 0)){ status|=2;}
                else if((strncmp(A,"NO CA",5) == 0)){ status&=~2;}
                else if((strncmp(A,"+CMTI",5) == 0)){ status|=4;}
                else if((strncmp(A,"+CMGR",5) == 0)){ status|=8;}
        }
        else if(index>11&index<22&(status>>1))mob[index-12]=c;
        else if(index>24&index<35&((status>>3)%2))mob[index-25]=c;
        else if((status>>4)%2)sms[index-1]=A[index-1];
}
void delete_sms(){
        status&=~1;
        while ((status%2)!=1) {
```

```
                sendstring_uart("AT+CMGD=1\r");
                _delay_ms(1000);
                }
        status&=~4;
        status&=~8;
        status&=~16;

}

void read_sms(){
        if((status>>2)%2){
                sendstring_uart("AT+CMGR=1\r");
        _delay_ms(1000);
                        }
        delete_sms();
        _delay_ms(1000);
}

void check_gsm(){
        status&=~1;
        while ((status%2)!=1) {
                sendstring_uart("AT\r");
                _delay_ms(100);
                }
        sendstring_uart("AT+CLIP=1\r");
}

int main() {
        LCDinit();
        LCDclr();
        set_uartbaud(9600);
        enable_uart_rxcint();
        sei();
        check_gsm();
        delete_sms();
        LCDdisplay("****************");
        _delay_ms(1000);
        while(1){
                read_sms();
                _delay_ms(1000);
                LCDGotoXY(0,0);
                LCDstring(sms,16);
                _delay_ms(100);
                LCDGotoXY(0,1);
                LCDsendChar(status+48);
                LCDsendChar(30);
                LCDstring(mob,10);
                _delay_ms(1000);
                if(strncmp(sms,"ON",2) == 0)PORTA=255;
                if(strncmp(sms,"OF",2) == 0)PORTA=0;
```

```
        }
        return 0;
}
```

This code will switch on/off the LEDs on Port-A when you will send SMS having text “on” / “of” on it from any other code. If you want you can change the SMS text for operation.

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