

# Lecture (07)

## 16F84A

### 7 segments direct interface 7 segments interface using decoder

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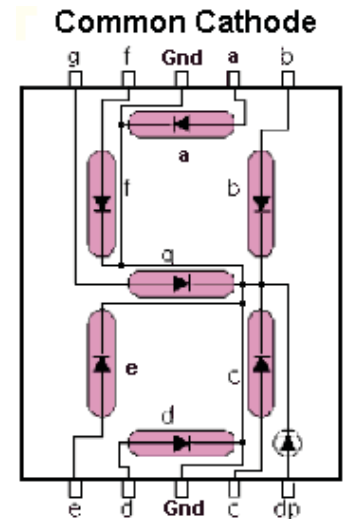
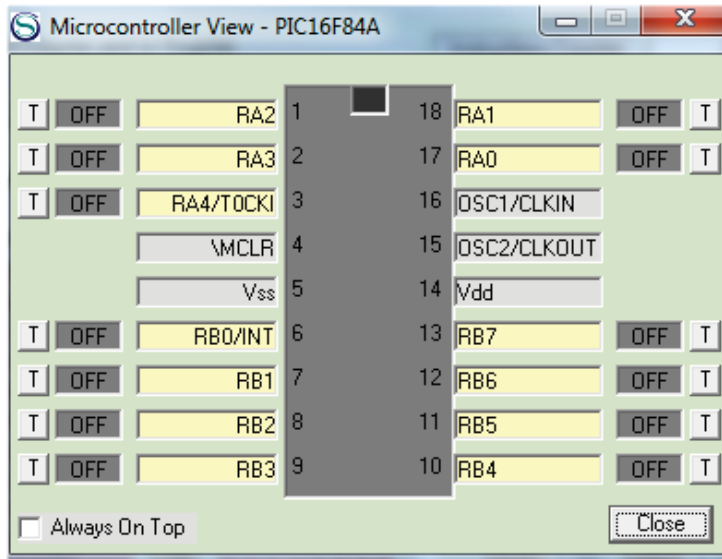
## Agenda

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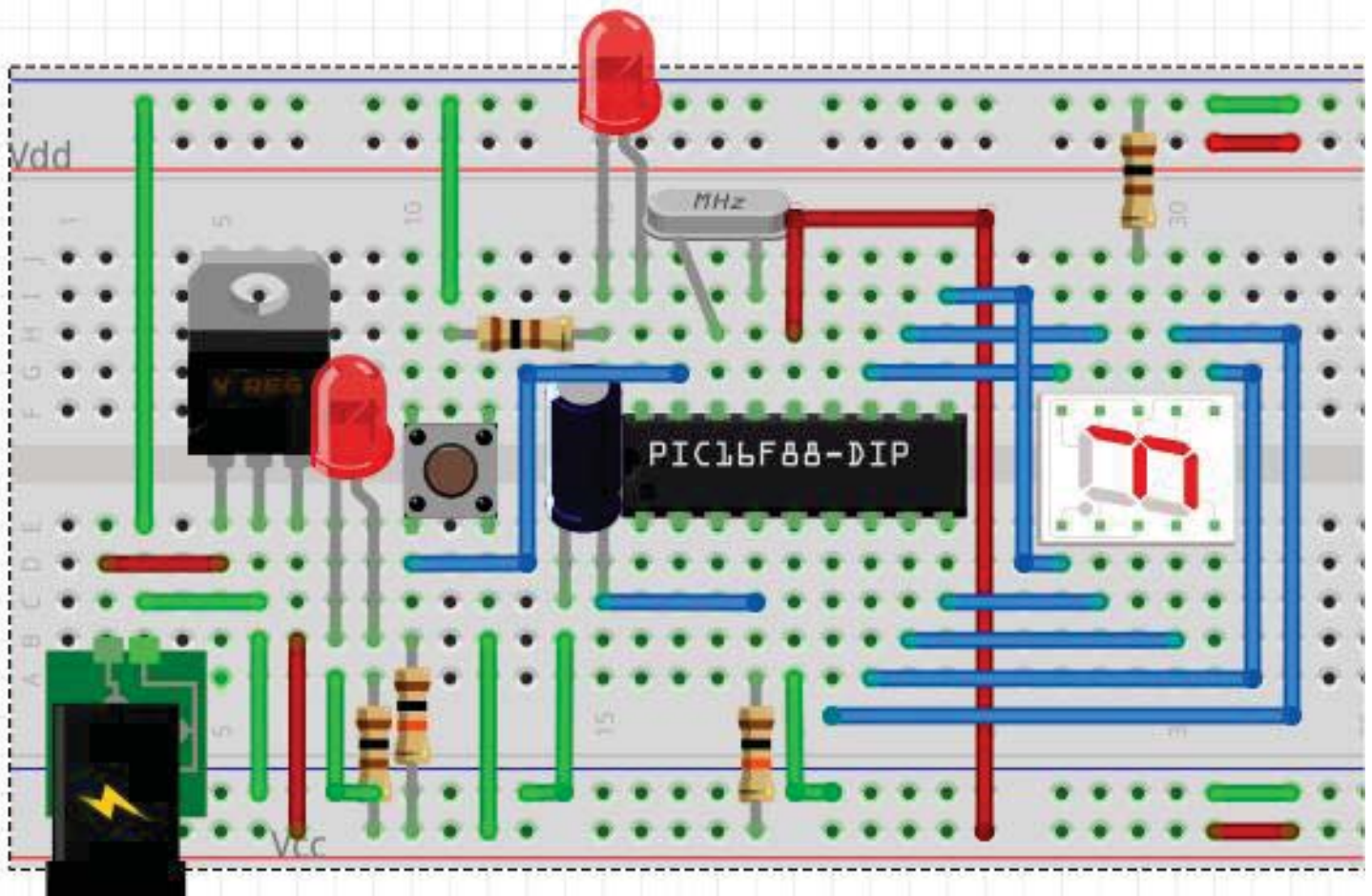
- Single 7 segment display direct interface to 16F84A
- PressControlledUpDown1X7SegmentDecodedCounter
- PressControlledUpDown2X7SegmentDecodedCounter
- Assignment,  
PressControlledUpDown1X7SegmentBinaryCounter

# PressControlledUpDown1X7Segment ntCounter

7 Segment	a	b	c	d	e	f	g
PIC16F84A	RB0	RB1	RB2	RB3	RB4	RB5	RB6



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# 7Segments configuration (0-2)

symbol	h	g	f	e	d	c	b	a	binary	7segment
0										
1										
2										

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# 7Segments configuration (0-2)

symbol	h	g	f	e	d	c	b	a	binary	7segment
0									0b00111111	
1									0b00000110	
2									0b01011011	

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# 7Segments configuration (3-5)

symbol	h	g	f	e	d	c	b	a	binary	7segment
3										
4										
5										

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# 7Segments configuration (3-5)

symbol	h	g	f	e	d	c	b	a	binary	7segment
3									0b01001111	
4									0b01100110	
5									0b01101101	

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# 7Segments configuration (6-8)

symbol	h	g	f	e	d	c	b	a	binary	7segment
6										
7										
8										

9

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# 7Segments configuration (6-8)

symbol	h	g	f	e	d	c	b	a	binary	7segment
6									0b01111100	
7									0b00000111	
8									0b01111111	

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# 7Segments configuration (9)

symbol	h	g	f	e	d	c	b	a	binary	7segment
9										

# 7Segments configuration (9)

symbol	h	g	f	e	d	c	b	a	binary	7segment
9									0b01100111	

```

#include <xc.h>
#include <pic16f84a.h>
#include "config.h"
void delay_ms(int x);
void
SevenSegmentDecoder(int
number);
void main(void) {
    TRISB=0x00;
    int x;
    while(1)
    {
        if(RA0==0)
        {
            if(x<9)
                x++;
            else
                x=0;
        }
    }

```

```

else
    {
        if(x>0)
            {x=x-1;}
        else
            {x=9;}
    }
SevenSegmentDecoder(x);
delay_ms(500); }}

void
SevenSegmentDecoder(int
number)
{
switch (number)
{
case 0:
    PORTB=0b00111111;
break;

```

```

case 1:
    PORTB=0b00000110;
break;
case 2:
    PORTB=0b01011011;
break;
case 3:
    PORTB=0b01001111;
break;
case 4:
    PORTB=0b01100110;
break;
case 5:
    PORTB=0b01101101;
break;
case 6:
    PORTB=0b01111100;
break;

```

```

case 7:
    PORTB=0b00000111;
break;
case 8:
    PORTB=0b01111111;
break;
case 9:
    PORTB=0b01100111;
break;
default:
    PORTB=0b01111111;
break;
}
}

```

```

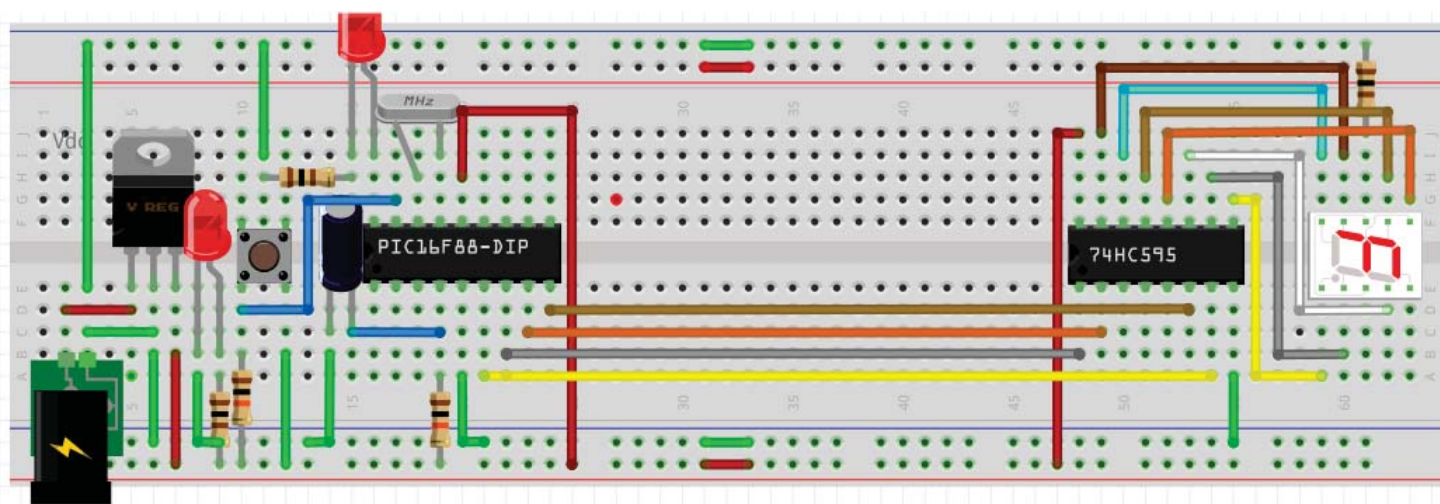
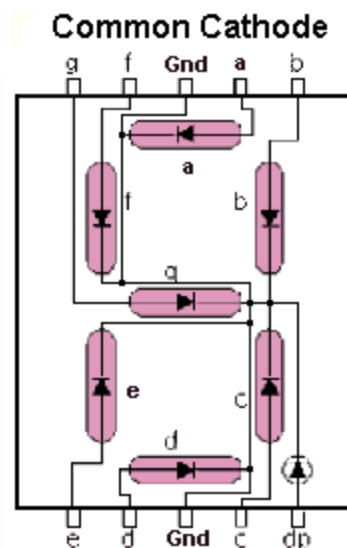
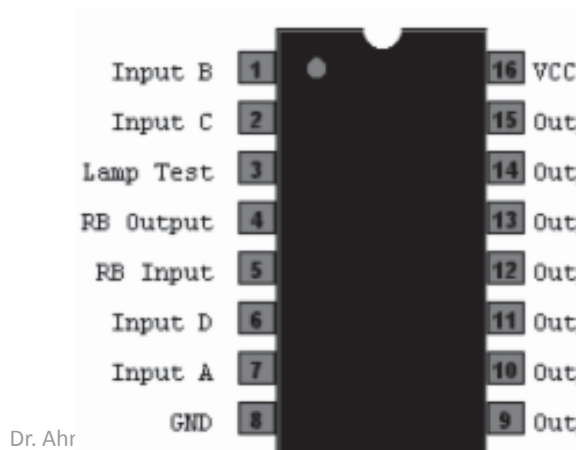
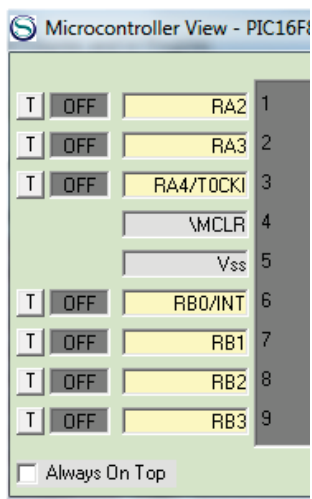
void delay_ms(int x)
{
for(int n=0;n<x;n++)
{
    _delay(1000);
}
}

```

# PressControlledUpDown1X7SegmentDecodedCounter

PIC16F84A	RB0	RB1	RB2	RB3
74LS48	Input A	Input B	Input C	Input D

74LS48	Output a	Output b	Output c	Output d	Output e	Output f	Output g
7Segment	a	b	c	d	e	f	g





```

void main(void) {
    TRISB=0x00;
    TRISA=0b00011101;
    int x=0;
    while(1)
    {
        if(RA0==1)
        {
            if(x<9)
                x++;
            else
                x=0;
        }
        else
        {
            if(x>0)
                {x=x-1;}
        }
    }
}

```

```

else
    {x=9;}
    }
PORTB=x;
RA1=~RA1;
delay_ms(500);
}
}

```

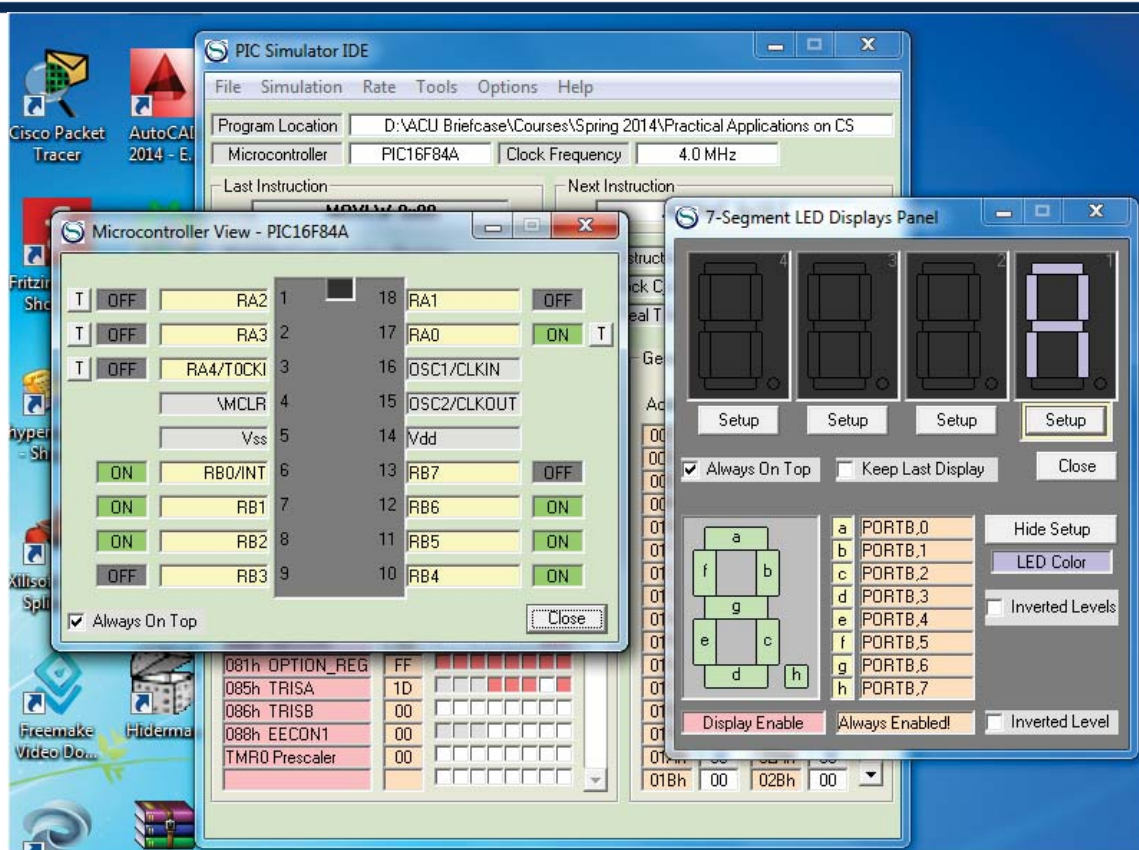
```

void delay_ms(int x)
{
    for(int n=0;n<x;n++)
    {
        _delay(1000);
    }
}

```

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## Assignment, PressControlledUpDown1X7SegmentBinaryCounter



# 7Segments configuration (A, b, c)

symbol	h	g	f	e	d	c	b	a	binary	7segment
A										
b										
c										

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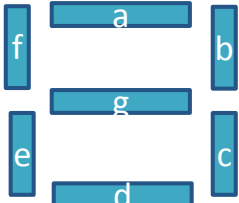
# 7Segments configuration (d, e, f)

symbol	h	g	f	e	d	c	b	a	binary	7segment
d										
e										
f										

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# 7Segments configuration (6)

symbol	h	g	f	e	d	c	b	a	binary	7segment
6										

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Thanks,..  
See you next week (ISA),...