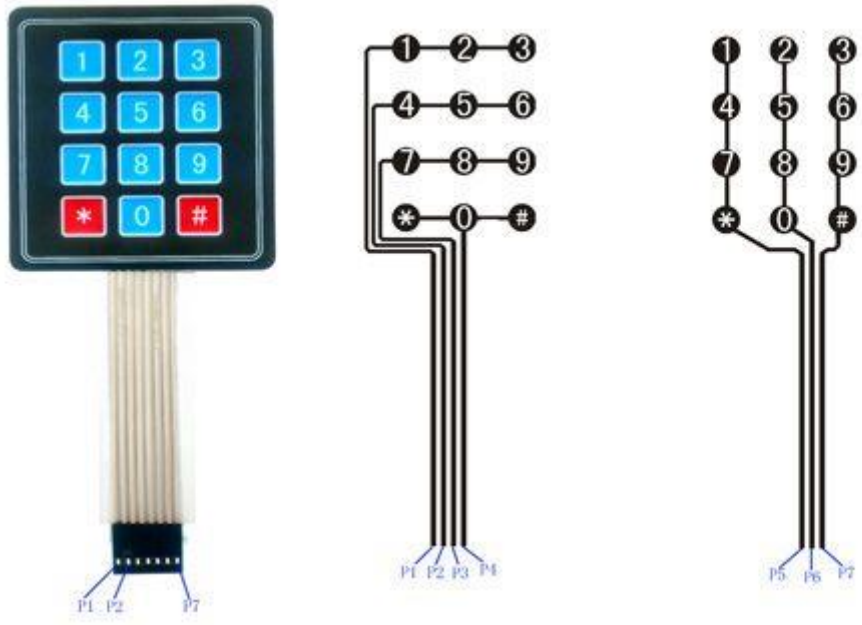
ECE2004-Microcontroller&Interfacing—~~B1 slot and B2 slot~~



Assume 7-segment display(a, b, c, d, e, f, g, h) is connected to P0.7 to P0.0 respectively.

Assume R1(P1), R2(P2), R3(P3), R4(P4) are connected to P2.6, P2.5, P2.4, P2.3 respectively.

Assume C1(P5), C2(P6), C3(P7) are connected to P2.2, P2.1, P2.0 respectively.

Assume pressing "*" button in keypad will be display only "."

Assume pressing "#" button in keypad will be display only "8."

```
#include "LPC17XX.H"
Void Delay(unsigned int x);
int main()
{
int seg[10]= { , , , ……}// array of 7-segment Hex values(0 to 9).
LPC_GPIO0→FIODIR| = 0x000000FF;
LPC_GPIO2→FIODIR| = (1<<2)|(1<<1)|(1<<0);
LPC_GPIO2→FIODIR& = ~ ((1<<6)|(1<<5)|(1<<4)|(1<<3));
while(1)
{
```

```
LPC_GPIO2→FIOPIN& = ~ ((1<<2)|(1<<1)|(1<<0));//C1=C2=C3=0
        if(!((LPC_GPIO2→FIOPIN)&(1<<6)))//if(R1=0)
        {
        LPC_GPIO2→FIOPIN& = ~(1<<2);//C1=0;
        LPC_GPIO2→FIOPIN| = (1<<1)|(1<<0);// C2=C3=1;

        if(!((LPC_GPIO2→FIOPIN)&(1<<6)))//if(R1=0)
        {
        LPC_GPIO0→FIOPIN|=seg[1];//Display 1 on 7-segment display
        }
        else
        {
        LPC_GPIO2→FIOPIN& = ~(1<<1);//C2=0;
        LPC_GPIO2→FIOPIN| = (1<<2)|(1<<0);// C1=C3=1;

        if(!((LPC_GPIO2→FIOPIN)&(1<<6)))//if(R1=0)
        {
        LPC_GPIO0→FIOPIN|=seg[2]; //Display 2 on 7-segment display
        }
        else
        {
        LPC_GPIO2→FIOPIN& = ~(1<<2);//C3=0;
        LPC_GPIO2→FIOPIN| = (1<<1)|(1<<0);// C2=C1=1;
        if(!((LPC_GPIO2→FIOPIN)&(1<<6)))//if(R1=0)
        {
        LPC_GPIO0→FIOPIN|=seg[3]; //Display 3 on 7-segment display
        }
        }
        }
        } // this ends for R1
```

```
if(!((LPC_GPIO2→FIOPIN)&(1<<5)))//if(R2=0)
{
LPC_GPIO2→FIOPIN& = ~(1<<2);//C1=0;
LPC_GPIO2→FIOPIN| = (1<<1)|(1<<0);// C2=C3=1;

if(!((LPC_GPIO2→FIOPIN)&(1<<5)))//if(R2=0)
{
LPC_GPIO0→FIOPIN|=seg[4]; //Display 4 on 7-segment display
}
else
{
LPC_GPIO2→FIOPIN& = ~(1<<1);//C2=0;
LPC_GPIO2→FIOPIN| = (1<<2)|(1<<0);// C1=C3=1;

if(!((LPC_GPIO2→FIOPIN)&(1<<5)))//if(R2=0)
{
LPC_GPIO0→FIOPIN|=seg[5]; //Display 5 on 7-segment display
}
else
{
LPC_GPIO2→FIOPIN& = ~(1<<2);//C3=0;
LPC_GPIO2→FIOPIN| = (1<<1)|(1<<0);// C2=C1=1;
if(!((LPC_GPIO2→FIOPIN)&(1<<5)))//if(R2=0)
{
LPC_GPIO0→FIOPIN|=seg[6]; //Display 6 on 7-segment display
}
}
}
} // this ends for R2
```

```
if(!((LPC_GPIO2→FIOPIN)&(1<<4)))//if(R3=0)
{
LPC_GPIO2→FIOPIN& = ~(1<<2);//C1=0;
LPC_GPIO2→FIOPIN| = (1<<1)|(1<<0);// C2=C3=1;

if(!((LPC_GPIO2→FIOPIN)&(1<<4)))//if(R3=0)
{
LPC_GPIO0→FIOPIN|=seg[7]; //Display 7 on 7-segment display
}
else
{
LPC_GPIO2→FIOPIN& = ~(1<<1);//C2=0;
LPC_GPIO2→FIOPIN| = (1<<2)|(1<<0);// C1=C3=1;

if(!((LPC_GPIO2→FIOPIN)&(1<<4)))//if(R3=0)
{
LPC_GPIO0→FIOPIN|=seg[8]; //Display 8 on 7-segment display
}
else
{
LPC_GPIO2→FIOPIN& = ~(1<<2);//C3=0;
LPC_GPIO2→FIOPIN| = (1<<1)|(1<<0);// C2=C1=1;
if(!((LPC_GPIO2→FIOPIN)&(1<<4)))//if(R3=0)
{
LPC_GPIO0→FIOPIN|=seg[9]; //Display 9 on 7-segment display
}
}
}
} // this ends for R3
```

```
        if(!((LPC_GPIO2→FIOPIN)&(1<<3)))//if(R4=0)
        {
        LPC_GPIO2→FIOPIN& = ~(1<<2);//C1=0;
        LPC_GPIO2→FIOPIN| = (1<<1)|(1<<0);// C2=C3=1;

        if(!((LPC_GPIO2→FIOPIN)&(1<<3)))//if(R4=0)
        {
        LPC_GPIO0→FIOPIN|=0x00000001; //Display "."on 7-segment display
        }
        else
        {
        LPC_GPIO2→FIOPIN& = ~(1<<1);//C2=0;
        LPC_GPIO2→FIOPIN| = (1<<2)|(1<<0);// C1=C3=1;

        if(!((LPC_GPIO2→FIOPIN)&(1<<3)))//if(R4=0)
        {
        LPC_GPIO0→FIOPIN|=seg[0]; //Display 0 on 7-segment display
        }
        else
        {
        LPC_GPIO2→FIOPIN& = ~(1<<2);//C3=0;
        LPC_GPIO2→FIOPIN| = (1<<1)|(1<<0);// C2=C1=1;
        if(!((LPC_GPIO2→FIOPIN)&(1<<3)))//if(R4=0)
        {
        LPC_GPIO0→FIOPIN|=0x000000FF; //Display "8." on 7-segment display
        }
        }
        }
        } // this ends for R4
}// end for while loop
```

```
}// end for main loop


Void delay(unsigned int x)
{
Int i,j;
for(i=0;i<x;i++)
for(j=0;j<20000;j++);
}
```