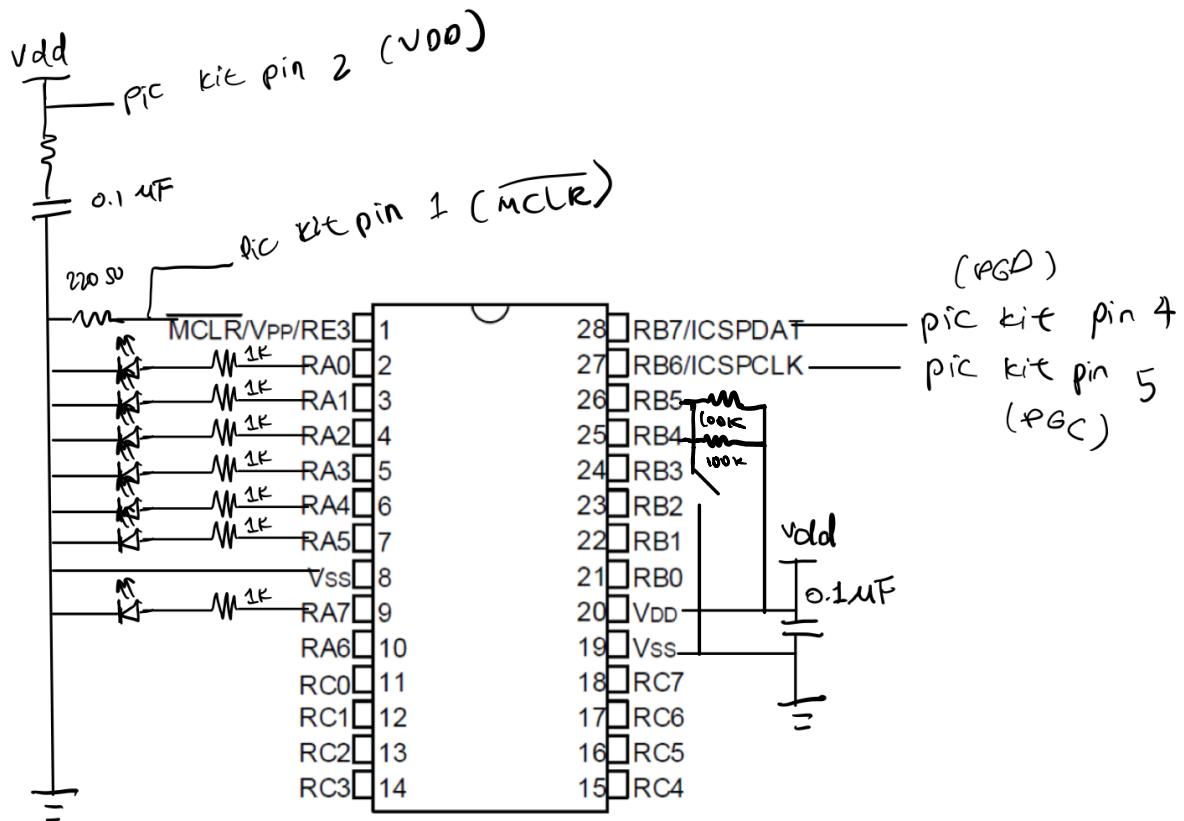
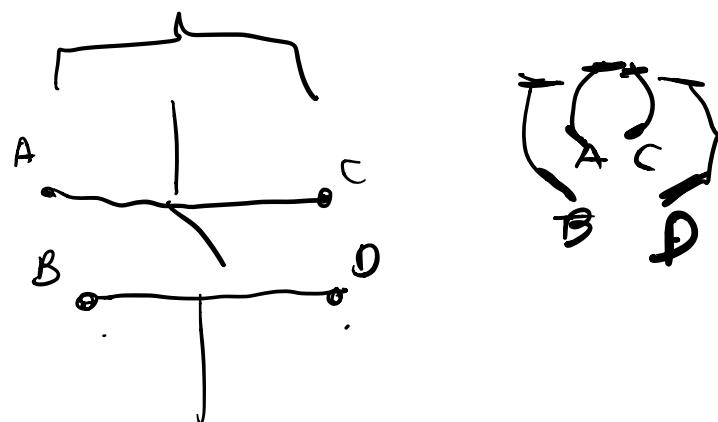


## Circuit Diagram

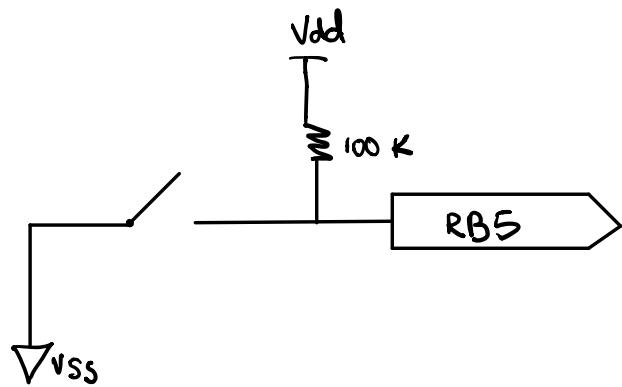


(power supply circuit is not shown)

solved



## Button part of the circuit design



input: RB5

$$TRISB = 0010\ 0000 = 00x20$$

1. What register and what value must you write to this register to make RB5 an input?
2. What bitmask value will you use to access bit RB5?
3. What bitwise logical operation will you use with your bitmask value and the input register to test if RB5 is set? You have to think like a microcontroller, which means that

1. Register TRISB . value is 0x20 .

2 . 0x20

3 . PORTB & 0x20

32 bit variable for counter even though  
only displaying 6

If button pressed :

$$\text{LATA} = \text{LATA} + 0x01$$

0000 0000

0010 0000

---

```

88  */
89  void GpioSetup(void)
90  {
91      PORTA = 0x00;           // CLEAR PORTA
92      LATB = 0x80;           // Turn on only RA7
93      ANSELB = 0x00;         // Enable digital drivers
94      TRISB = 0x00;          // Set RA[0:8] as outputs
95
96      PORTB = 0x00; → state of port B
97      LATB = 0x00;
98      ANSELB = 0x00;
99      TRISB = 0x00 0x20; //

```

static variable:  
Button old

$\text{PORTB} \rightarrow$ <table border="0"> <tr><td>0001</td><td>0000</td></tr> <tr><td>0010</td><td>0000</td></tr> <tr><td colspan="2"><hr/></td></tr> <tr><td>0000</td><td>0000</td></tr> </table> $\text{0x20} \rightarrow$ <table border="0"> <tr><td>0011</td><td>0000</td></tr> <tr><td>0010</td><td>0000</td></tr> <tr><td colspan="2"><hr/></td></tr> <tr><td>0010</td><td>0000</td></tr> </table> $\text{buttonnew} \rightarrow$ <table border="0"> <tr><td>0000</td><td>0000</td></tr> <tr><td colspan="2"><hr/></td></tr> <tr><td colspan="2"> </td></tr> </table>	0001	0000	0010	0000	<hr/>		0000	0000	0011	0000	0010	0000	<hr/>		0010	0000	0000	0000	<hr/>				<p>or</p> <table border="0"> <tr><td>0011</td><td>0000</td></tr> <tr><td>0010</td><td>0000</td></tr> <tr><td colspan="2"><hr/></td></tr> <tr><td>0010</td><td>0000</td></tr> </table> <p>→ 0x30</p> <p>NOT pressed</p>	0011	0000	0010	0000	<hr/>		0010	0000
0001	0000																														
0010	0000																														
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Static : **Button\_old** = <sup>default initially</sup>  $0x00$

