นาย ณัฐนันท์ ภู่กาญจน์ 61070507206 Sec. AC

Lab 2: AVR I/O Ports Programming

1. Write a C code to configure the I/O pin based on the following questions. Do NOT change the state of the other I/O pins in the same port group

   1.1. Set PB5 to output high (logic 1)

   ```
   DDRB |= (1<< PORTB5);
   PORTB |= (1<< PORTB5);
   ```

   1.2. Set PB4 to output low (logic 0)

   ```
   DDRB |= (1<< PORTB4);
   PORTB &=~(1<< PORTB4);
   ```

   1.3. Set PA5 to input without internal pull up resistor

   ```
   DDRA &=~(1<< PORTA5);
   PORTA |= (1<< PORTA5);
   ```

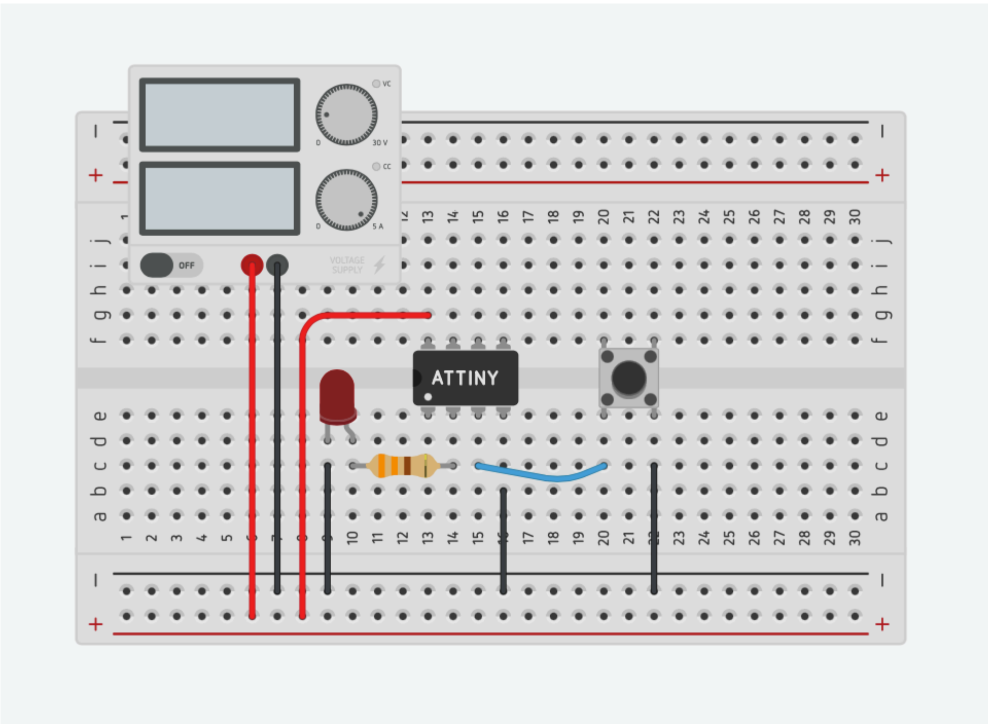
   1.4. Set PC2 to input with internal pullup resistor enable

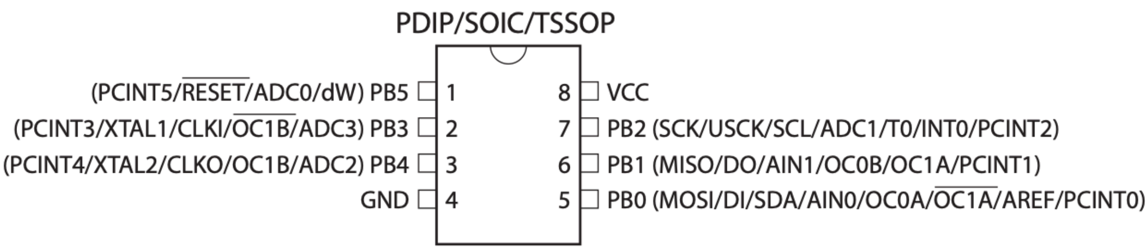
   ```
   DDRC &=~(1<< PORTC2);
   PORTC &=~(1<< PORTC2);
   ```

   1.5. Toggle state of pin PD3 (Assume set as output)

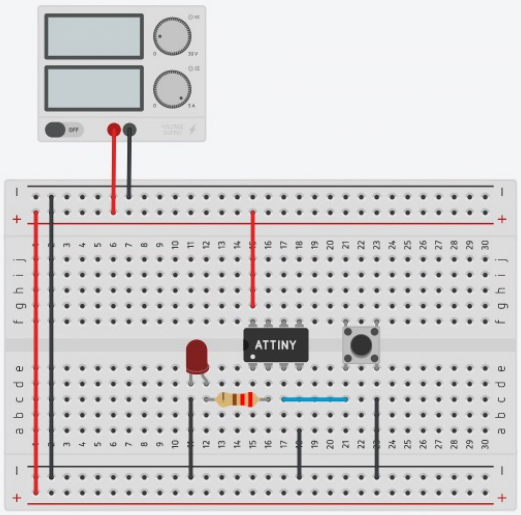
   ```
   DDRD |= (1<< PORTD3);
   PORTD ^= (1<< PORTD3);
   ```

2. Connect the following circuit in Tinkercad and write a program to toggle a LED when the button is pressed





Cricuit from exercise 2



Text 1 (ATtiny)

```
void setup()
{
  // setup
  DDRB |= (1 << PORTB3); // Set PB3 as Output

  DDRB &= ~(1 << PORTB4); // Set PB4 as Input
  PORTB |= (1 << PORTB4); // Internal Pull up PB4

  while(1){

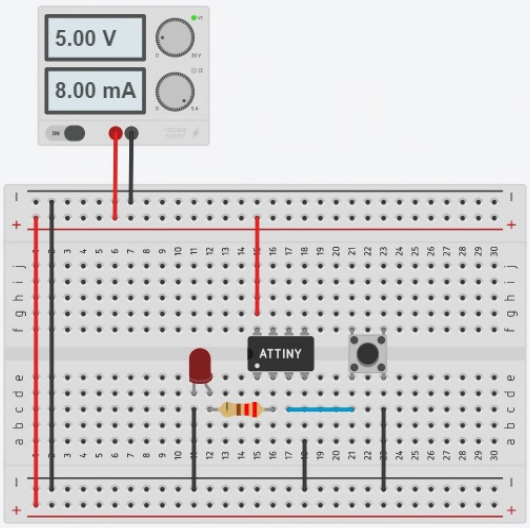
    if(!(PINB & (1 << PORTB4))){ // if logic high
      PORTB ^= (1 << PORTB3);
      while(!(PINB & (1 << PORTB4)));
      _delay_ms(30);
    }

  }
}

void loop()
{
}
```

Serial Monitor

When not press button



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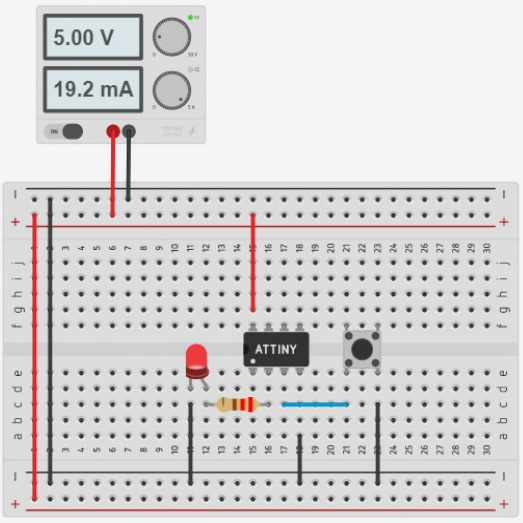
      _delay_ms(30);
    }

  }
}

void loop()
{
}
```

Serial Monitor

When press button



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Serial Monitor