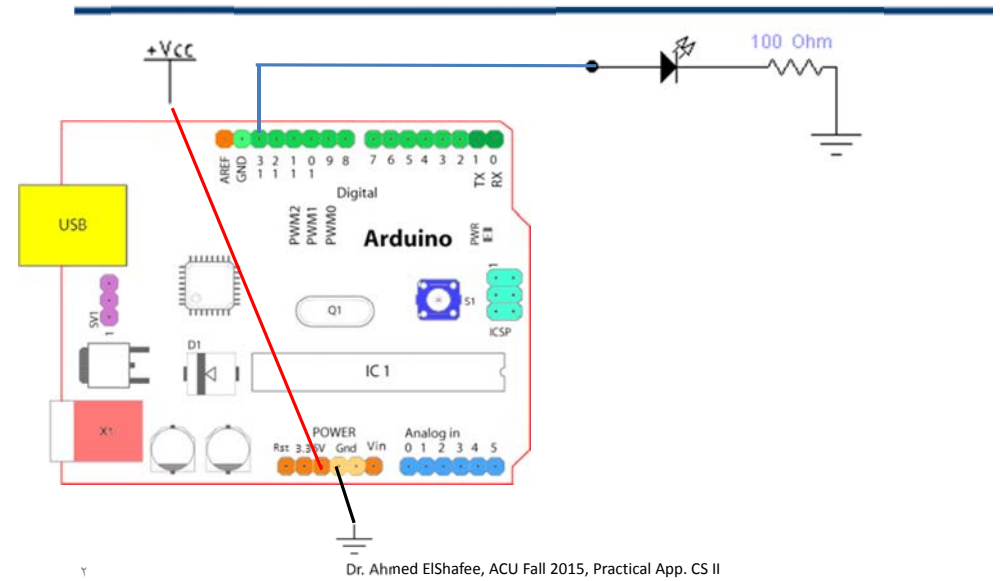


# Lecture (01)

## Practical Applications on Arduino Uno Board - I

Dr. Ahmed ElShafee

### Led Flasher

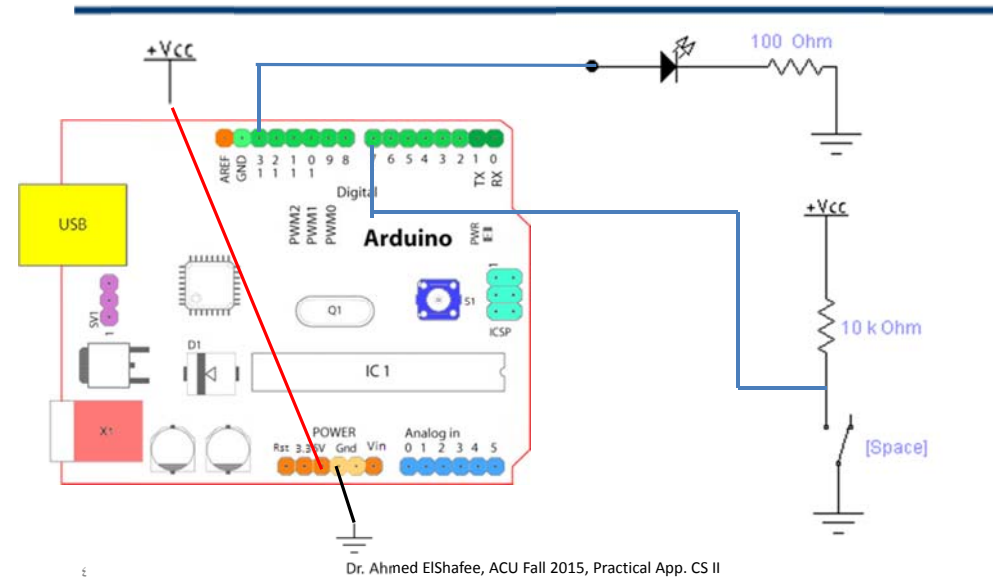


```
#define LED 13

void setup()
{
  pinMode(LED,OUTPUT);
}

void loop()
{
  digitalWrite(LED,HIGH);
  delay(100);
  digitalWrite(LED, LOW);
  delay(100);
}
```

### PressControlledLed



```

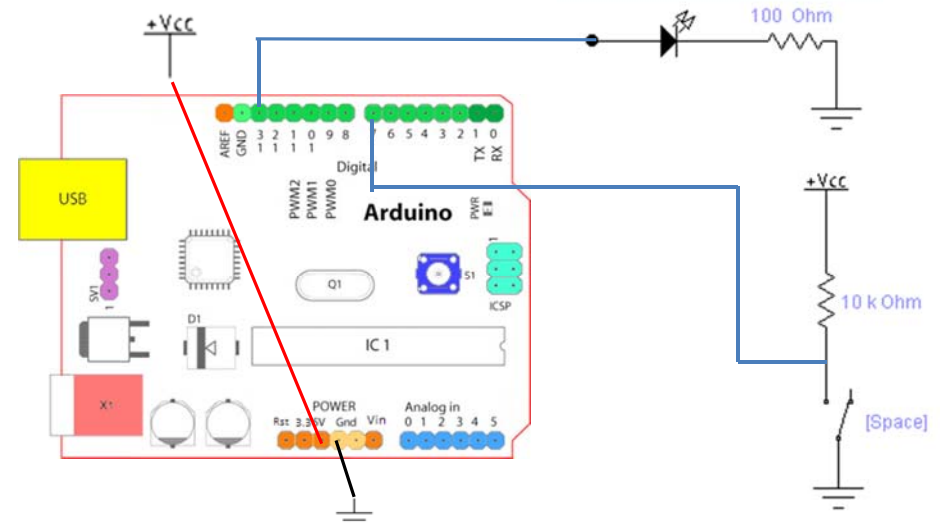
#define LED 13
#define BUTTON 7
int Button_status=0;

void setup()
{
  pinMode(LED, OUTPUT);
  pinMode(BUTTON,INPUT);
}

void loop()
{
  Button_status=digitalRead(BUTTON);
  if(Button_status==HIGH)
    digitalWrite(LED,LOW);
  else
    digitalWrite(LED,HIGH);
}

```

## PressControlledFlasher



## PressControlledToggler

```

#define LED 13
#define BUTTON 7
int Button_status=0;
int LED_status=0;

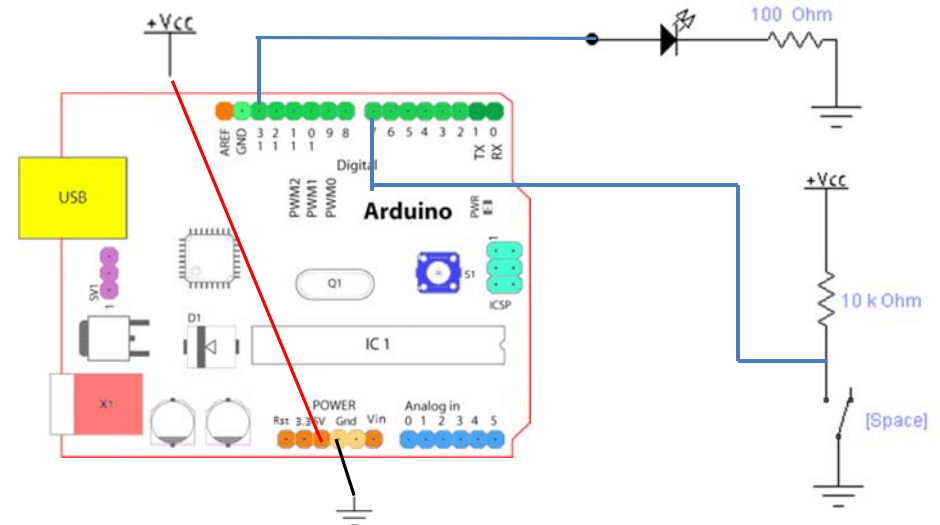
void setup()
{
  pinMode(LED, OUTPUT);
  pinMode(BUTTON,INPUT);
}

```

```

void loop()
{
  Button_status=digitalRead(BUTTON)
  ;
  if(Button_status==LOW)
  {
    delay(1000);
    if(LED_status==LOW)
      LED_status=HIGH;
    else
      LED_status=LOW;
  }
  else
    LED_status=LOW;
  digitalWrite(LED,LED_status);
}

```



```

#define LED 13
#define BUTTON 7
int Button_status=0;
int LED_status=0;

void setup()
{
  pinMode(LED, OUTPUT);
  pinMode(BUTTON,INPUT);
}

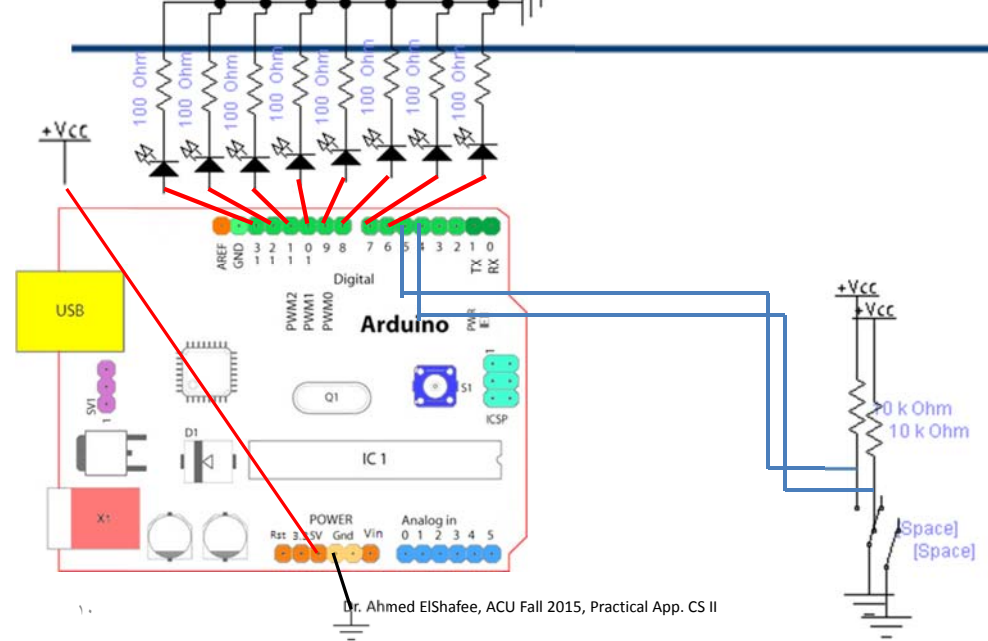
```

```

void loop()
{
  Button_status=digitalRead(BUTTON);
  if(Button_status==LOW)
  {
    delay(100);
    Button_status=digitalRead(BUTTON);
    if(Button_status==LOW)
    {
      if(LED_status==LOW)
        LED_status=HIGH;
      else
        LED_status=LOW;
    }
  }
  digitalWrite(LED,LED_status);
  delay(1000);
}

```

## PressControlledLedsLevel



```

#define Led7 13
#define Led6 12
#define Led5 11
#define Led4 10
#define Led3 9
#define Led2 8
#define Led1 7
#define Led0 6
#define up 5
#define down 4
int up_status=0;
int down_status=0;
int Led7_status=0;
int Led6_status=0;
int Led5_status=0;
int Led4_status=0;
int Led3_status=0;
int Led2_status=0;

```

```

int Led1_status=0;
int Led0_status=0;
void setup()
{
  pinMode(Led0, OUTPUT);
  pinMode(Led1, OUTPUT);
  pinMode(Led2, OUTPUT);
  pinMode(Led3, OUTPUT);
  pinMode(Led4, OUTPUT);
  pinMode(Led5, OUTPUT);
  pinMode(Led6, OUTPUT);
  pinMode(Led7, OUTPUT);
  pinMode(up,INPUT);
  pinMode(down,INPUT);
}

```

```

void loop()
{
  up_status=digitalRead(up);
  if(up_status==LOW)
  {
    delay(10);
    up_status=digitalRead(up);
    if(up_status==LOW)
    {
      if(led6_status==HIGH)
        led7_status=HIGH;
      else if(led5_status==HIGH)
        led6_status=HIGH;
      else if(led4_status==HIGH)
        led5_status=HIGH;
      else if(led3_status==HIGH)
        led4_status=HIGH;

```

```

      else if(led2_status==HIGH)
        led3_status=HIGH;
      else if(led1_status==HIGH)
        led2_status=HIGH;
      else if(led0_status==HIGH)
        led1_status=HIGH;
      else if(led0_status==LOW)
        led0_status=HIGH;
    }
  }
  down_status=digitalRead(down);
  if(down_status==LOW)
  {
    delay(10);
    down_status=digitalRead(down);
    if(down_status==LOW)
    {

```

```
if(led7_status==HIGH)
    led7_status=LOW;
else if(led6_status==HIGH)
    led6_status=LOW;
else if(led5_status==HIGH)
    led5_status=LOW;
else if(led4_status==HIGH)
    led4_status=LOW;
else if(led3_status==HIGH)
    led3_status=LOW;
else if(led2_status==HIGH)
    led2_status=LOW;
else if(led1_status==HIGH)
    led1_status=LOW;
else if(led0_status==HIGH)
    led0_status=LOW;
}
}
```

Dr. Ahmed ElShafee, ACU Fall 2015, Practical App. CS II

```
digitalWrite(Led0,Led0_status);
digitalWrite(Led1,Led1_status);
digitalWrite(Led2,Led2_status);
digitalWrite(Led3,Led3_status);
digitalWrite(Led4,Led4_status);
digitalWrite(Led5,Led5_status);
digitalWrite(Led6,Led6_status);
digitalWrite(Led7,Led7_status);
}
```

١٤

Thanks,  
See you next Week, isA

Dr. Ahmed ElShafee, ACU Fall 2015, Practical App. CS II