

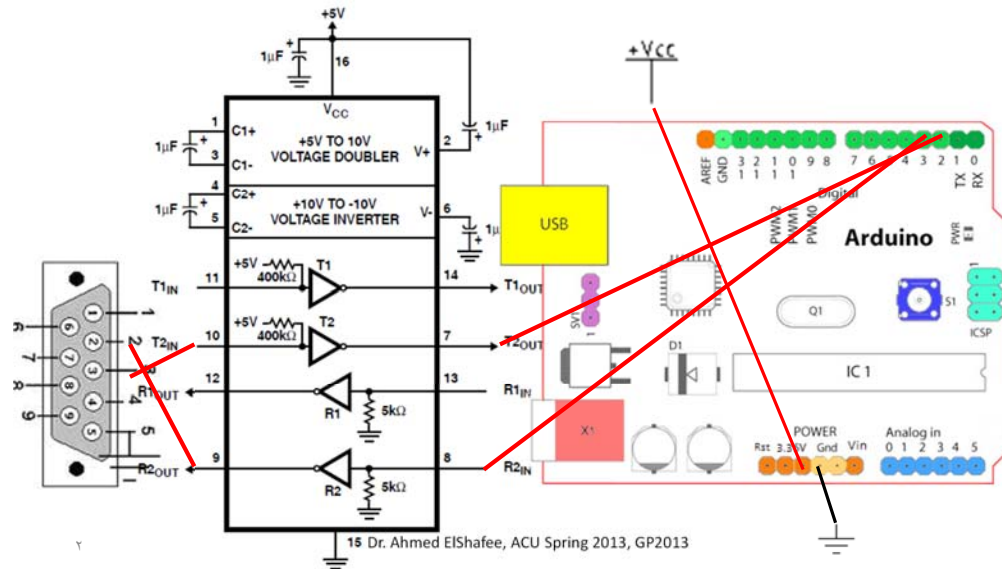
Lecture (05)

Practical Applications on Arduino Uno Board - 5

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

Serial Interface

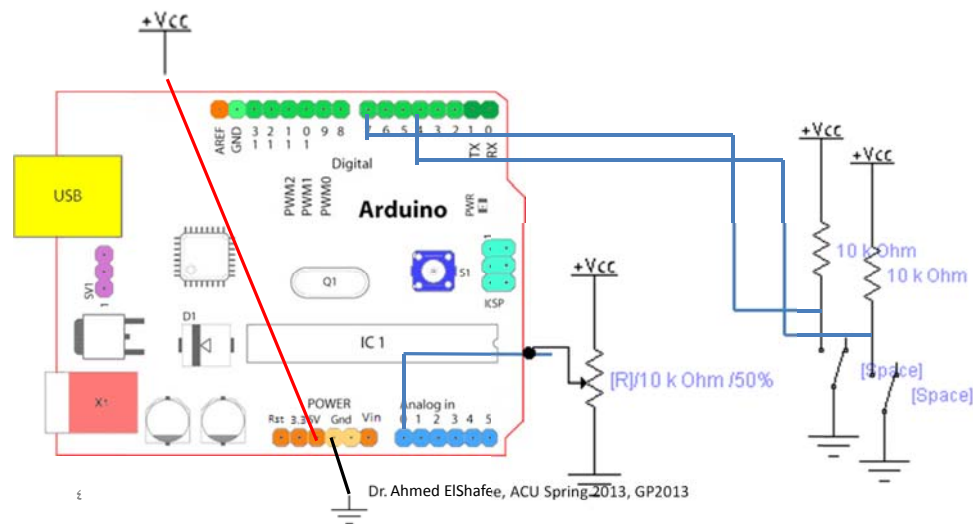


SerialEcho

```
#include <SoftwareSerial.h>
SoftwareSerial mySerial(2, 3);
void setup()
{
  // set the data rate for the
  SoftwareSerial port
  mySerial.begin(9600);
  mySerial.println("welcome to Serial
  Echo,..");
}
```

```
void loop() // run over and over
{
  if (mySerial.available() > 0)
  {
    int inByte = mySerial.read();
    mySerial.print("you Pressed ");
    mySerial.write(inByte);
    mySerial.println();
  }
}
```

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SerialEventLogger

```
#include <SoftwareSerial.h>
SoftwareSerial mySerial(2, 3);
#define up 7
#define down 4
#define Potentiometer A0
int up_status=1;
int down_status=1;
byte val=0;
void setup()
{
  // set the data rate for the
  SoftwareSerial port
  mySerial.begin(9600);
  mySerial.println("Welcome to
  Serial Input Logger,..");
}
```

```
void loop() // run over and over
{
  if(digitalRead(up)!=up_status)
  {
    delay(100);
    if(digitalRead(up)!=up_status)
    {
      up_status=digitalRead(up);
      if(up_status==0)
        mySerial.println("UP is
        pressed.");
      else
        mySerial.println("UP is
        released.");
    }
  }
}
```

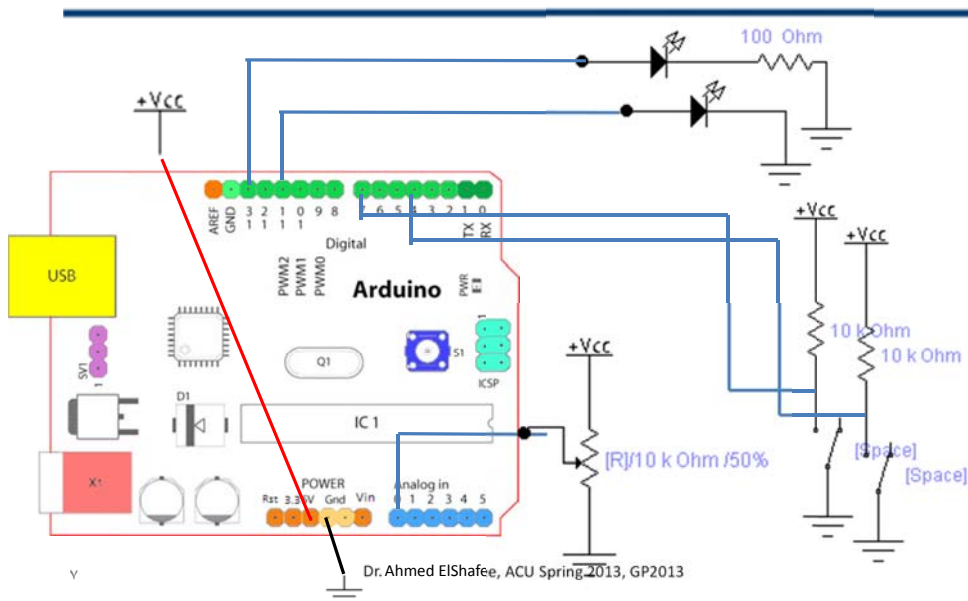
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```
if(down_status!=digitalRead(down))
{
  delay(100);

  if(down_status!=digitalRead(down))
  {
    down_status=digitalRead(down);
    if(down_status==0)
      mySerial.println("Down is
      pressed.");
    else
      mySerial.println("Down is
      released.");
  }
}
```

```
if((abs(byte(analogRead(Potentiometer)
)-val))>50)
{
  val=analogRead(Potentiometer);
  mySerial.print("Analog Input = ");
  mySerial.print(val);
  mySerial.println();
  delay(100);
}
```

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SerialControlledOutputInputLogger

```
#include <SoftwareSerial.h>
SoftwareSerial mySerial(2, 3);
#define up 7
#define down 4
#define Potentiometer A0
#define LED 13
#define Lamp 11
int up_status=1;
int down_status=1;
byte val=0;
int LED_status=0;
int i=0;
void setup()
{
  mySerial.begin(9600);
  Serial.begin(9600);
  mySerial.println("Welcome to Serial
  Input Logger,..");
}
```

```
void loop() // run over and over
{
  if(digitalRead(up)!=up_status)
  {
    delay(100);
    if(digitalRead(up)!=up_status)
    {
      up_status=digitalRead(up);
      if(up_status==0)
        mySerial.println("UP is
        pressed.");
      else
        mySerial.println("UP is
        released.");
    }
  }
  if(down_status!=digitalRead(down))
  {
    delay(100);
  }
}
```

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```

f(down_status!=digitalRead(down))
{
  down_status=digitalRead(down);
  if(down_status==0)
    mySerial.println("Down is pressed.");
  else
    mySerial.println("Down is released.");
}
}
if((abs(byte(analogRead(Potentiometer))-
val))>50)
{
  val=analogRead(Potentiometer);
  mySerial.print("Analog Input = ");
  mySerial.print(val);
  mySerial.println();
  delay(100);
}

```

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```

if (mySerial.available() > 0)
{
  int inByte = mySerial.read();
  switch(inByte)
  {
    case 'a':
      if(LED_status==LOW)
        LED_status=HIGH;
      else
        LED_status=LOW;
      digitalWrite(LED,LED_status);
      mySerial.print("Led now is = ");
      mySerial.write(i);
      mySerial.println();
      break;
    case 'b':
      if(i<255)
        i++;
      analogWrite(Lamp,i);

```

```

mySerial.print("Lamp value now is = ");
mySerial.write(i);
mySerial.println();
break;
case 'c':
  if(i>0)
    i--;
  analogWrite(Lamp,i);
  mySerial.print("Lamp value now is = ");
  mySerial.write(i);
  mySerial.println();
  break;
}
}
}

```

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Thanks.