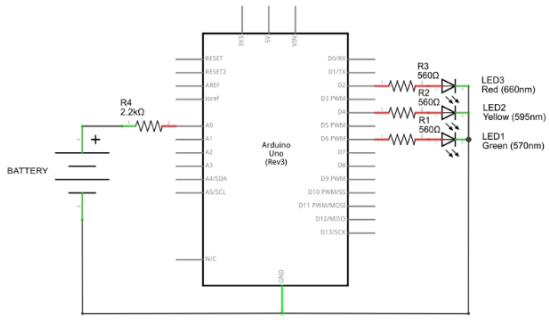
Battery Lab
Voltage Testing

1. Assemble the circuit shown in Fig. 1



2. Create, assemble, make appropriate comments and save the following program:

```
#define newLED 2                  //green LED 'new'
#define okLED 4                   //yellow LED 'ok'
#define oldLED 6                  //red LED 'old'

int analogValue=0;                //Start analog
value of 0
float voltage=0;
int ledDelay=1000;                //Delay to see LED
change

void setup()
{
 pinMode(newLED, OUTPUT);
 pinMode(okLED, OUTPUT);
 pinMode(oldLED, OUTPUT);

}

void loop()                       //Checking battery life
loop
{
 analogValue=analogRead(0);
 voltage=0.0048*analogValue;


  if(voltage>=1.0)
   {
    digitalWrite(newLED,HIGH);
    delay(ledDelay);              //Checks for new
batterys
    digitalWrite(newLED,LOW);
   }

  else if(voltage<0.6&&voltage>1.0)
   {
    digitalWrite(okLED, HIGH);
    delay(ledDelay);              //Checks for ok
batterys
    digitalWrite(okLED, LOW);
   }
  else if(voltage<=0.6)
   {
    digitalWrite(oldLED, HIGH);
    delay(ledDelay);              //Checks for old
batterys
    digitalWrite(oldLED, LOW);
   }
}
```

3. Record the results of each battery you tested.

4. Modify the program so that you can test voltages 5V for green, between 3V to 5V for yellow, and anything below 3V to be red using the voltage generator.

5. Write a report and attach the *.lst file.