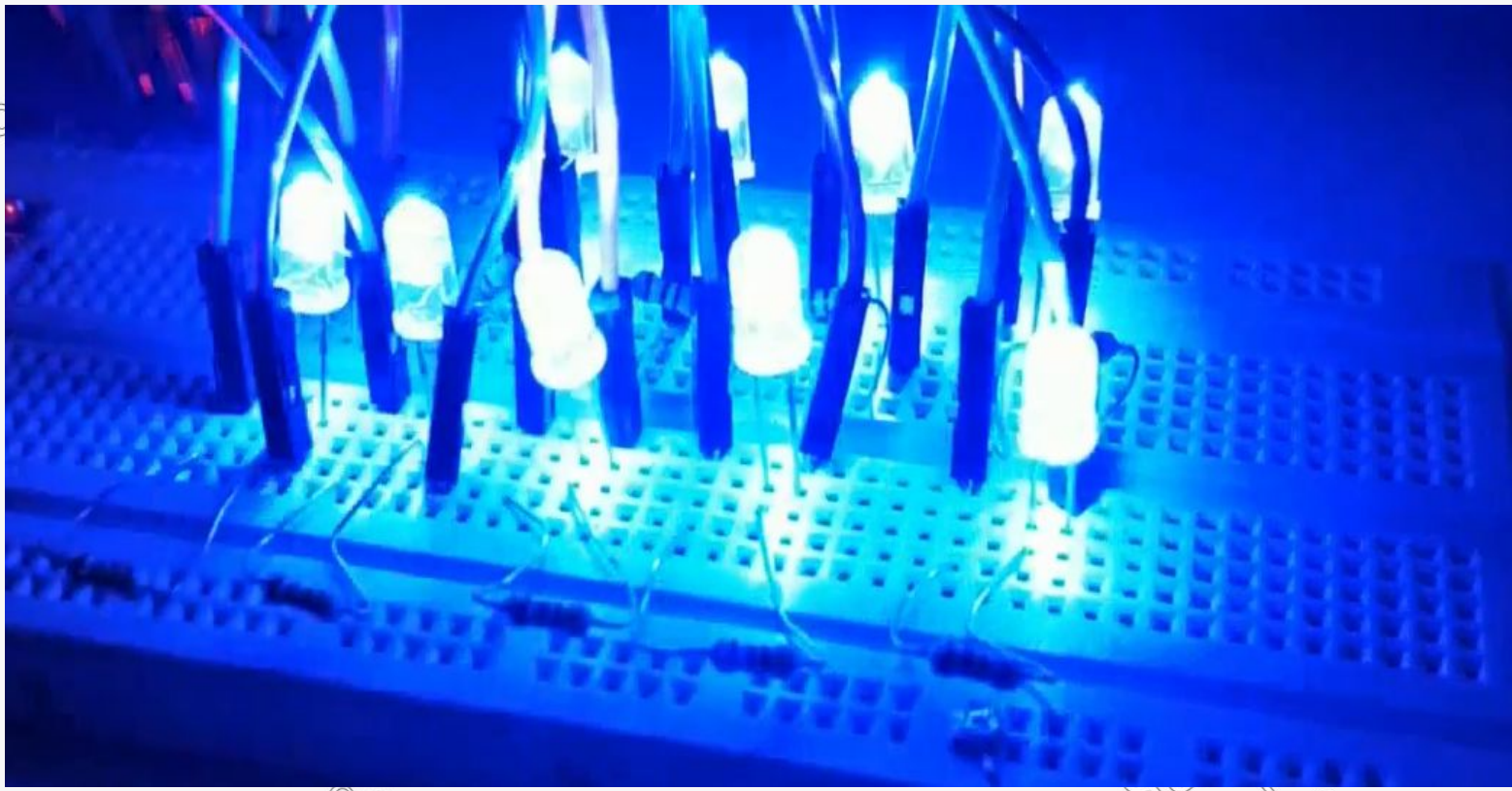
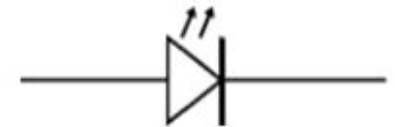
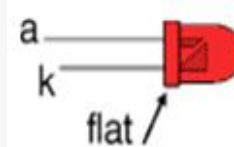
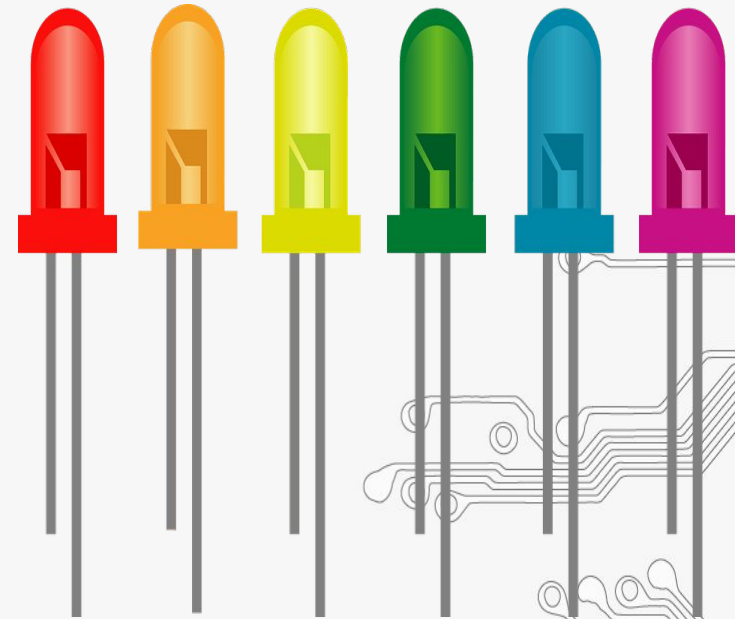


Array LED Project



LED (Light Emitting Diode)

- An **LED** is an electronic device that emits **light** when an electrical current is passed through it.
- LEDs are commonly used for **indicator lights** (such as power on/off lights) on electronic devices.
- It is a very important electronic device because it is used in a lot of electrical and electronic devices now a days.



symbol:

Arrays

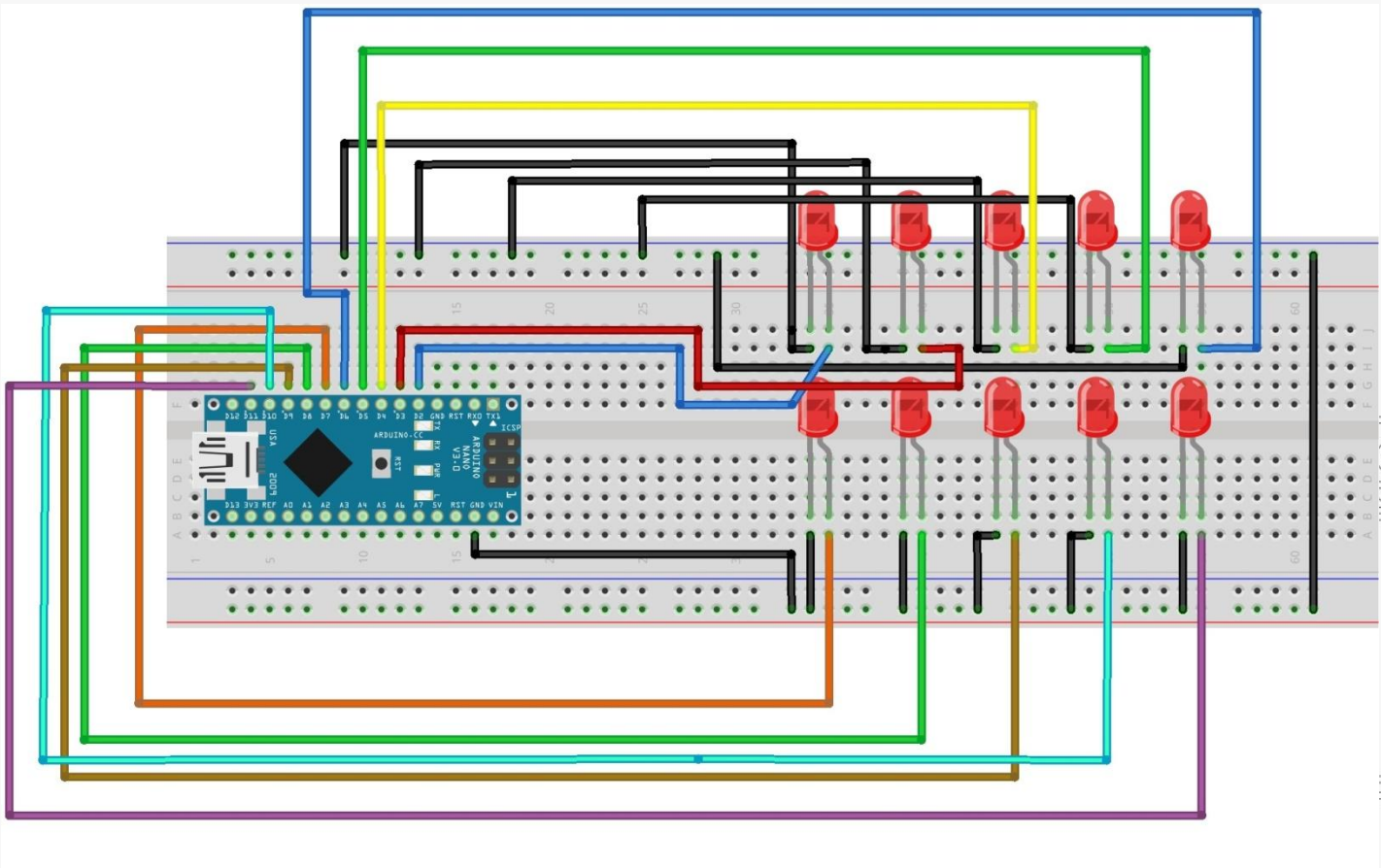
- An array is a variable with multiple parts. If you think of a variable as a cup that holds values, you might think of an array as an ice cube tray. It's like a series of linked cups, all of which can hold the same maximum value.
- The For Loop Iteration example shows you how to light up a series of LEDs attached to pins 2 through 11 of the Arduino Nano board, with certain limitations (the pins have to be numbered contiguously, and the LEDs have to be turned on in sequence).

- You can turn on a sequence of pins whose numbers are neither contiguous nor necessarily sequential. To do this, you can put the pin numbers in an array and then use for loops to iterate over the array.
- This technique of putting the pins in an array is very handy. You don't have to have the pins sequential to one another, or even in the same order. You can rearrange them in any order you want.

Component Required

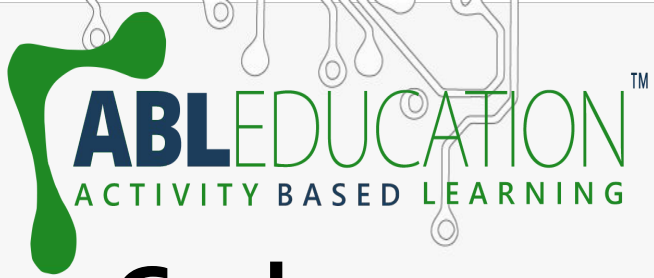
- Arduino Nano
- LEDs
- Resistors (220ohms)
- Breadboard
- Jumper wires

Connection Diagram



Connections

1. Connect all LED's positive terminal with digital pins (D2-D11 pins have chosen in above diagram) of Arduino Nano.
2. Connect all LED's ground terminal with 220ohms resistors.
3. Connect 2nd end of all resistor's with GND pin of Arduino Nano through breadboard as shown in above connection diagram.



Code

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Array_LED_project

```
// First Patern
int j=6;
int k=11;
int i;
void fun1()
{
  for( int i=2;i<=11;i++)
  {
    digitalWrite(i,1);
    delay(50);
    digitalWrite(i,0);
    delay(50);
  }
  for( int i=11;i>=2;i--)
  {
    digitalWrite(i,1);
    delay(50);
    digitalWrite(i,0);
    delay(50);
  }
}
// Second patern
void fun2()
{
  for( int i=2;i<=11;i++)
  {
    digitalWrite(i,1);
    delay(50);
```




Array_LED_project

```
for( int i=2;i<=11;i++)
{
digitalWrite(i,1);
delay(50);

}

for( int i=2;i<=11;i++)
{
digitalWrite(i,0);
delay(50);
}

}

// doble for loop
void fun3()
{
for( int i=6;i>=2;i--)
{
digitalWrite(i,1);
delay(50);
}

for( int i=2;i<=6;i++)
{
digitalWrite(i,0);
delay(50);
}
}

for(int i=7;i<=11;i++)
{
```

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Array_LED_project

```
delay(50);
}
for(int i=7;i<=11;i++)
{
  digitalWrite(i,1);
  delay(50);

}

for(int i=11;i>=7;i--)
{
  digitalWrite(i,0);
  delay(50);

}
}
void fun7()
{
  for (i=7;i<=11;i++)
  {
    digitalWrite(i,1);
    digitalWrite(j,1);
    delay(50);

    j--;
  }
  for (i=11;i>=7;i--)
  {
```

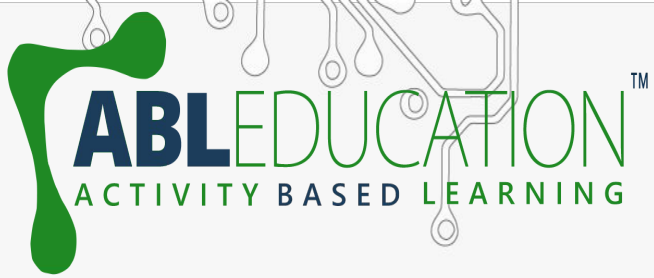
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Array_LED_project

```
    j--;  
  }  
  for (i=11;i>=7;i--)  
  {  
    digitalWrite(i,0);  
    digitalWrite(i,0);  
    delay(50);  
  
    j++;  
  }  
}  
  
void fun6()  
{  
  for (i=2;i<=6;i++)  
  {  
    digitalWrite(i,1);  
    digitalWrite(k,1);  
    delay(50);  
  
    k--;  
  
    for (i=6;i>=2;i--)  
    {  
      digitalWrite(i,0);  
      digitalWrite(k,0);  
      delay(50);  
    }  
  }  
}
```



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Array_LED_project

```
    k--;
}
    for (i=6;i>=2;i--)
    {
digitalWrite(i,0);
digitalWrite(k,0);
delay(50);

    k++;
    }
}
void setup() {
// put your setup code here, to run once:
for( int i=2;i<=11;i++)
{
pinMode(i, OUTPUT);
}
}
void loop() {
fun1();
fun2();

fun3();
fun7();
fun6();
}
```

Project Link: https://youtu.be/o39n_HlRxic