



KIIT, Deemed to be University
School of Computer Engineering
Sensors And Automation [EC28005]

EXPERIMENT -1

Aim:

Blinking of LED to illustrate the control of an LED's illumination using an Arduino microcontroller to create a blinking pattern through programmed on-off cycles.

Component/Software Used:

Component/Software	Specification
Arduino Uno	-
Bread Board, LED, Register, Cables, Connecting Wires, Laptop/Computer	-
Software(s) Used	Arduino IDE 2.2.1

Theory:

This experiment is based on the principle of controlling the illumination of an LED using an Arduino microcontroller. The LED is connected to the microcontroller through a resistor to limit the current flow and protect the LED. When the program runs, the microcontroller sends digital signals to the LED, causing it to **turn on** (light up) and **off** (go dark) in a specific pattern defined by the program. This manipulation of electrical signals by the microcontroller controls the LED's

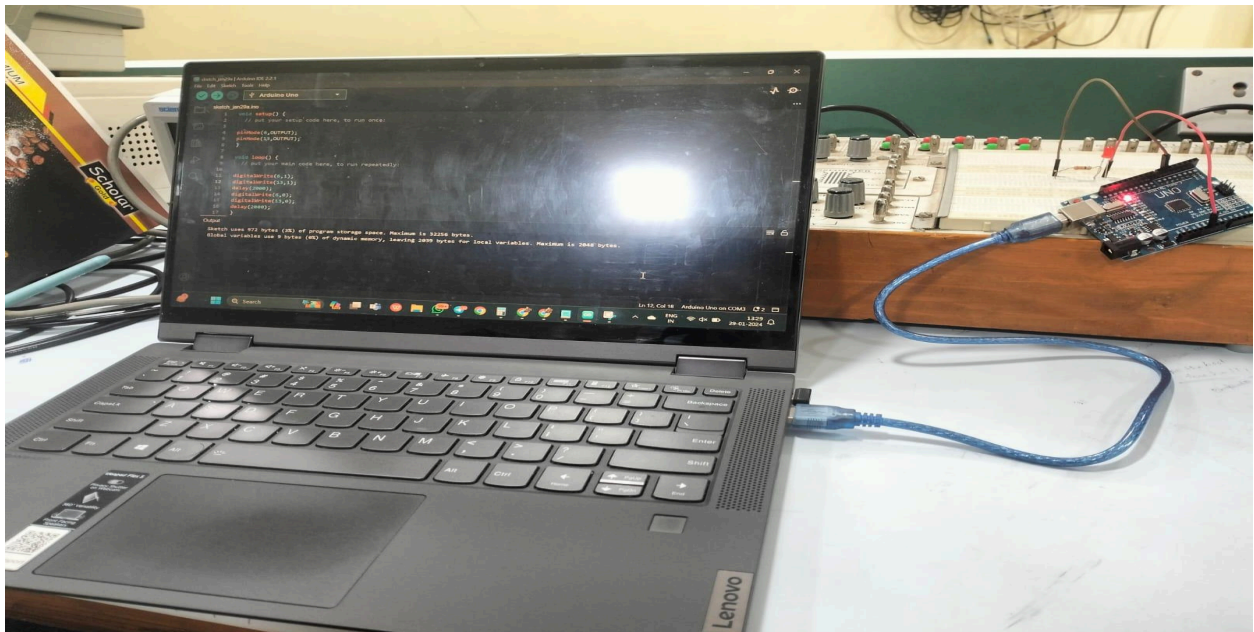
illumination, resulting in the blinking effect. Essentially, the program dictates when the LED receives power and when it does not, creating the blinking pattern.

Program:

```
void setup { // put your setup code here, to run once:
pinMode(6,OUTPUT);
pinMode(13,OUTPUT);
}

void loop { // put your main code here, to run repeatedly:
digitalWrite(6,1);
digitalWrite(13,1);
delay(2000);
digitalWrite(6,0);
digitalWrite(13,0);
delay(2000);
}
```

Result:



Conclusion:

This experiment effectively showcased the practical application of digital control using an Arduino microcontroller. By understanding the principles of current limiting and digital signal manipulation, we were able to create a blinking pattern with the LED. This experiment provided a fundamental understanding of digital outputs and their applications, laying the groundwork for more complex projects involving digital control and signal processing.

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