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| **Course Code: CT2364** | **Course Name: Lab: Internet of Things** |

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**Practical No 2**

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| Aim: Design a sketch for blinking of LED’s to generate different patterns. **Requirement (Hardware/Software):** Arduino Uno, LED’s, Resistor, jumper wires, USB A to B cable, Breadboard etc. |
| **Theory**:  **Steps for designing a sketch for blinking of LED:**   1. Insert the short leg of the LED into the GND pin on your Arduino (use the GND pin closest to pin 13). 2. Connect the 220 Ohm resistor to pin 13 on the Arduino. It doesn’t matter which way you connect the resistor. 3. Use the alligator clip to connect the long leg of the LED to the other leg of the resistor. If you do not have an alligator clip, twist the two leads together as best you can to get a steady electrical connection. 4. Plug the Arduino board into your computer with a USB cable. 5. Open up the Arduino IDE. 6. Open the sketch for this section. 7. Click the Verify button on the top left. It should turn orange and then back to blue. 8. Click the Upload button. It will also turn orange and then blue once the sketch has finished uploading to your Arduino board. 9. Now monitor the Arduino board – the LED should be blinking.   [Blink and LED schematic](https://programmingelectronics.com/wp-content/uploads/2012/08/02-Blink.Schematic1.jpeg)  **Steps for designing a sketch for blinking of LED with the help of tinkercad software:** Step 1: LED Resistor Circuit: Construct a circuit using Arduino Uno and and a resistor of 1 ohm with a LED connected with it. Step 2: Simple code with block or text or both: In Tinkercad Circuits, you can easily code up your projects using blocks/text. Let’s go through the simple code controlling the blink by opening the code editor (button labeled "Code"). You can resize the code editor by clicking and dragging the left edge.  Step 3: Start Stimulation |
| **Screenshots:**  **Different Patterns of Blinking of LED’s** |
| **Conclusion:** In this way, I have successfully created sketch for blinking of LED’s to generate different patterns. |