Activity 5: Series Blinking LED:

Description:
This circuit has a multiple LED that will turn on and turn off one by one.

Materials:

1 Arduino Uno R3
1 Breadboard
6 LED
6 100 Ω Resistor
Wires

Codes:
```
void setup() {

  for (int thisPin = 8; thisPin <= 13; thisPin++) {
    pinMode(thisPin, OUTPUT);
  }
}

void loop() {
  for (int thisPin = 8; thisPin <=  13; thisPin++) {

    digitalWrite(thisPin, HIGH);
    delay(100);
    digitalWrite(thisPin, LOW);
  }


  for (int thisPin = 13; thisPin >= 8; thisPin--) {

    digitalWrite(thisPin, HIGH);
    delay(100);
    digitalWrite(thisPin, LOW);
  }
```

```
}
```

Explanation on codes:
```
void setup() {

  for (int thisPin = 8; thisPin <= 13; thisPin++) {
    pinMode(thisPin, OUTPUT);
  }
}
```

- First, we used the for loop to initialize each pin from pin 8 to pin 13 as an output and named it as "thisPin."

```
for (int thisPin = 8; thisPin <= 13; thisPin++)
```

int thisPin = 8   : initialization - happens first and exactly once.
thisPin <= 13   : condition - each time through the loop, condition is tested; if it's true, the statement block, and the increment is executed, then the condition is tested again. When the condition becomes false, the loop ends.
thisPin++   : increment - executed each time through the loop when condition is true.

- This is because inside the parentheses of for loop, the first part is the initialization, meaning we started in pin 8 and we declared it as "thisPin." From pin 8, it will increase successively (because of the third code, "thisPin++") until the condition of the 2nd code is false (if "thisPin" is higher than 13).

```
void loop() {
  for (int thisPin = 8; thisPin <=  13; thisPin++) {

    digitalWrite(thisPin, HIGH);
```

- For loop is used to loop incrementally, turning the LEDs on, one by one, from pin 8 to pin 13.

```
    delay(100);
```

```
    digitalWrite(thisPin, LOW);
  }
```

- Next, with a delay of 100 milliseconds or 0.1 second, the led will turn off, one by one.

```
 for (int thisPin = 13; thisPin >= 8; thisPin--) {

    digitalWrite(thisPin, HIGH);
    delay(100);
    digitalWrite(thisPin, LOW);
  }
}
```

- Lastly, the process will reverse with this code, starting from the highest to lowest, from pin 13 to pin 8.