Each bit in `datArray` represents the state of a pin (output line) on the **74HC595**, and the microcontroller uses this array to send a specific pattern to the shift register. Here's how it works:

What the Bits Represent:

- Each bit in a `byte` (e.g., `B00000011`) corresponds to one of the output pins (`Q0` to `Q7`) of the **74HC595**.
- `1` means **HIGH** (5V or current flowing, depending on your circuit).
- `0` means **LOW** (0V or no current flowing, depending on your circuit).

For example:

- `B00000011` means:
  - **Q0 = HIGH**
  - **Q1 = HIGH**
  - **Q2 to Q7 = LOW**
- `B11111111` means:
  - **All outputs (Q0-Q7) = HIGH**
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How It Works in Your Code:

1. **`shiftOut()` Function**:
   - This function sends data from the microcontroller to the **74HC595**, one bit at a time, using the `DS` pin (data) and `SHcp` pin (clock).
   - The value `datArray[num]` is sent as 8 bits (one for each pin).
2. **Updating the Latch**:
   - After shifting all 8 bits into the register, the `STcp` pin (latch) is pulsed HIGH to move the data from the shift register into the output pins (`Q0-Q7`).
3. **Interpreting `datArray`**:
   - Each element in `datArray` defines the on/off pattern for the output pins of the shift register.
   - The loop cycles through the `datArray` to update the pattern every 500 milliseconds.

Electrical Perspective:

- If an output pin is connected to an LED (with a resistor), the LED will turn on when the corresponding bit is `1` (HIGH) and turn off when the bit is `0` (LOW).
- If the pin is connected to another device, a `1` will typically supply current or act as a logic HIGH signal, while a `0` will act as a logic LOW signal or no current.

Summary:

- **The array (`datArray`) defines the data (patterns) to control the outputs of the shift register.**
- Whether a `1` or `0` results in current depends on what is connected to the output pins. For example:
    - LEDs will light up for `1` (if connected with proper polarity).
    - Devices may interpret `1` as HIGH (logic) and `0` as LOW.