**Algorithm for Traffic Light Simulation in Pygame:**

1. **Initialize Pygame**:
   * Import the necessary libraries (pygame, time).
   * Initialize Pygame and create a window with defined width (800) and height (600).
2. **Set Up Colors and Fonts**:
   * Define colors for the traffic light (red, yellow, green, black, and white).
   * Define the font for text display.
3. **Traffic Light Drawing Function** (draw\_traffic\_light):
   * Fill the screen with a white background.
   * Draw a black rectangle to represent the traffic light box.
   * Draw three circles for the red, yellow, and green lights.
   * Use color change based on the current traffic light state.
4. **Display State Message Function** (display\_message):
   * Display "STOP" when the red light is on.
   * Display "WAIT" when the yellow light is on.
   * Display "GO" when the green light is on.
5. **Display Timer Function** (display\_timer):
   * Show a countdown timer displaying the remaining time for the current light state.
6. **Main Loop**:
   * Set the initial state to "red" and define the duration for each light (red: 5s, yellow: 2s, green: 5s).
   * Track the last time the light changed and calculate the elapsed time.
   * If the elapsed time exceeds the current light's duration, switch to the next light.
   * Update the current light's state and reset the timer.
   * Redraw the traffic light, display the message, and show the countdown timer.
7. **Quit the Program**:
   * Exit the loop when the user closes the window, and quit Pygame.