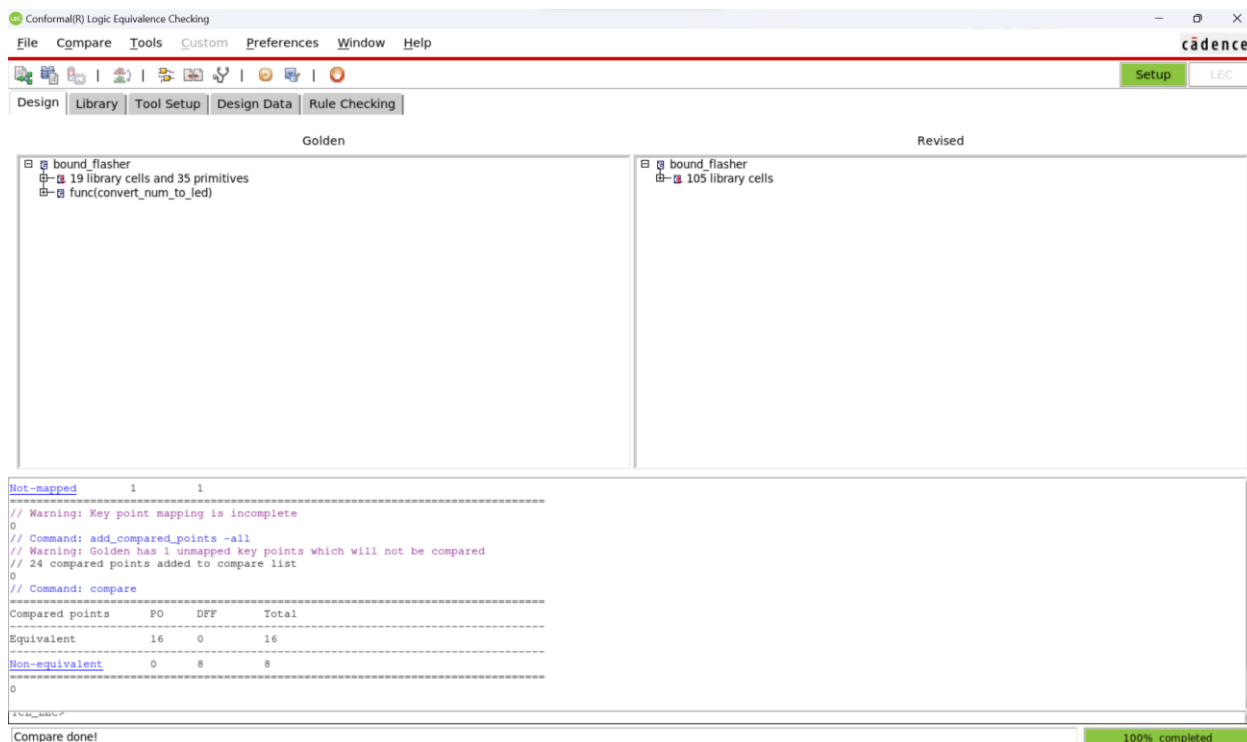


LOGIC EQUAIVALENCE CHECK

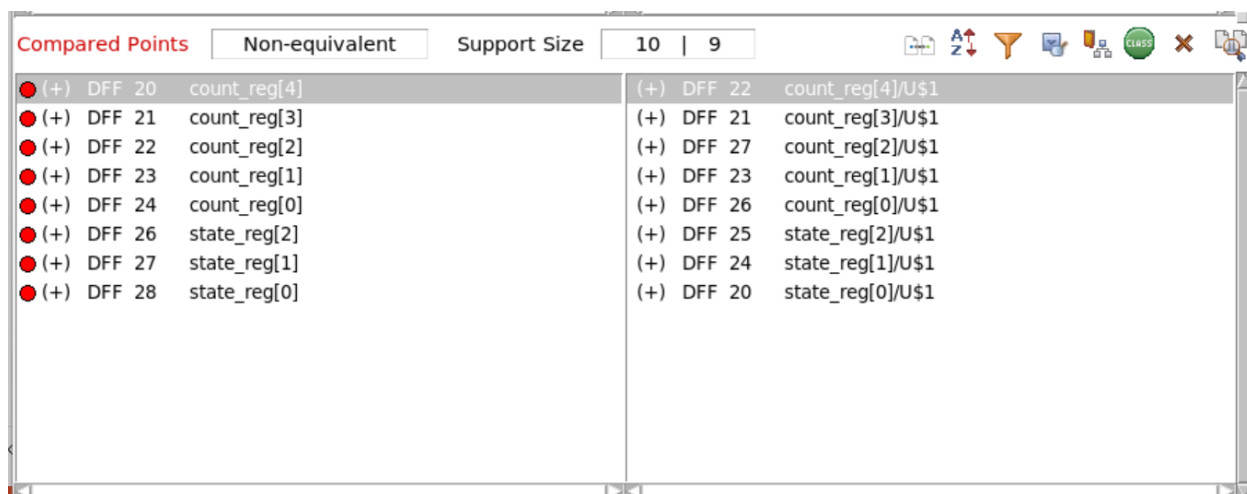
Author	<ul style="list-style-type: none">- Ung Ngô Minh Lăng- Tăng Văn Minh- Lê Minh Phúc- Đặng Đình Thông
Date	2023/03/30
Version	1.1

LOGIC EQUIVALENCE CHECK

Bước 1: Chạy ./go_lec -> có 8 non-equivalent points

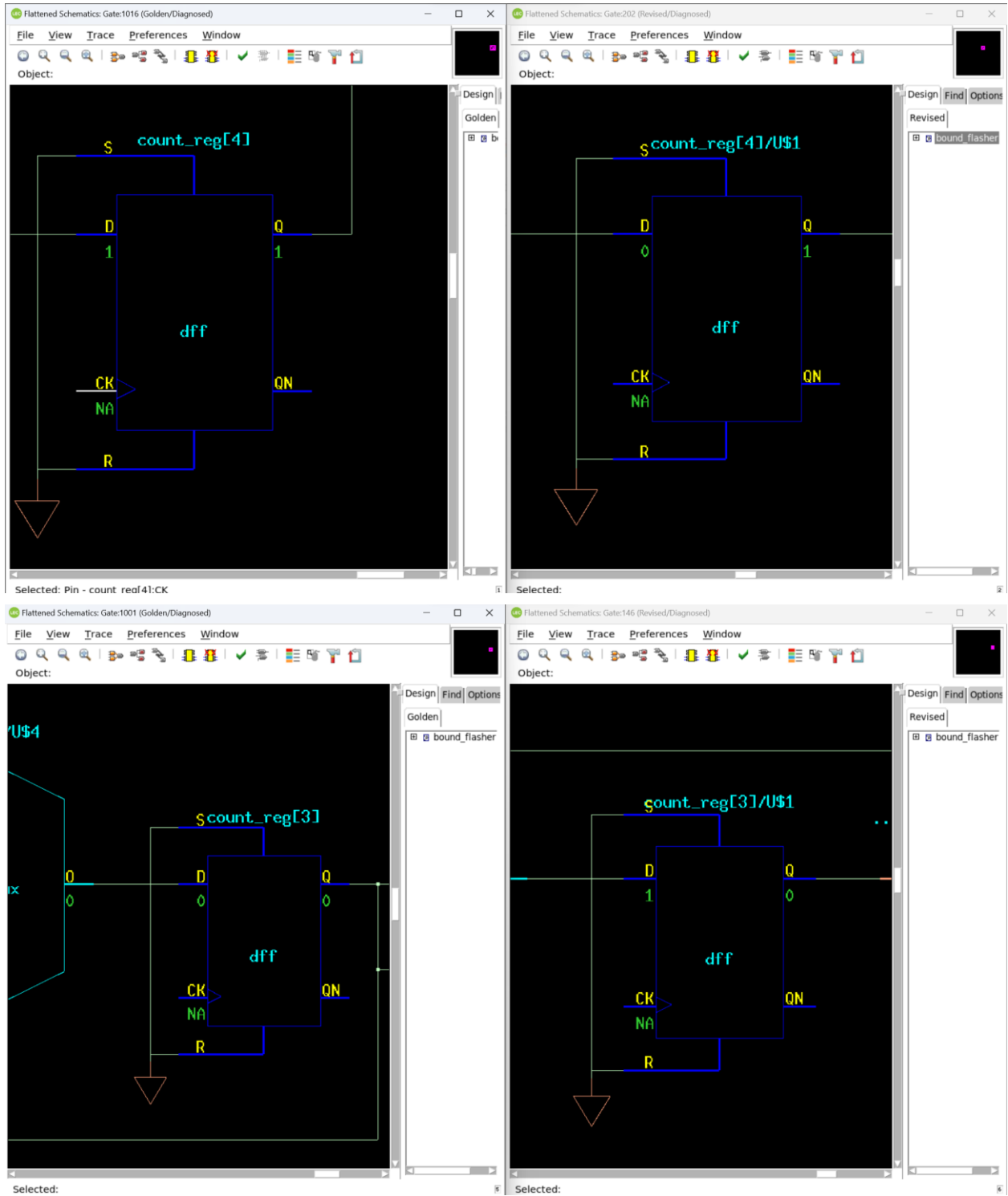


Bước 2: Xem các non-equivalent points

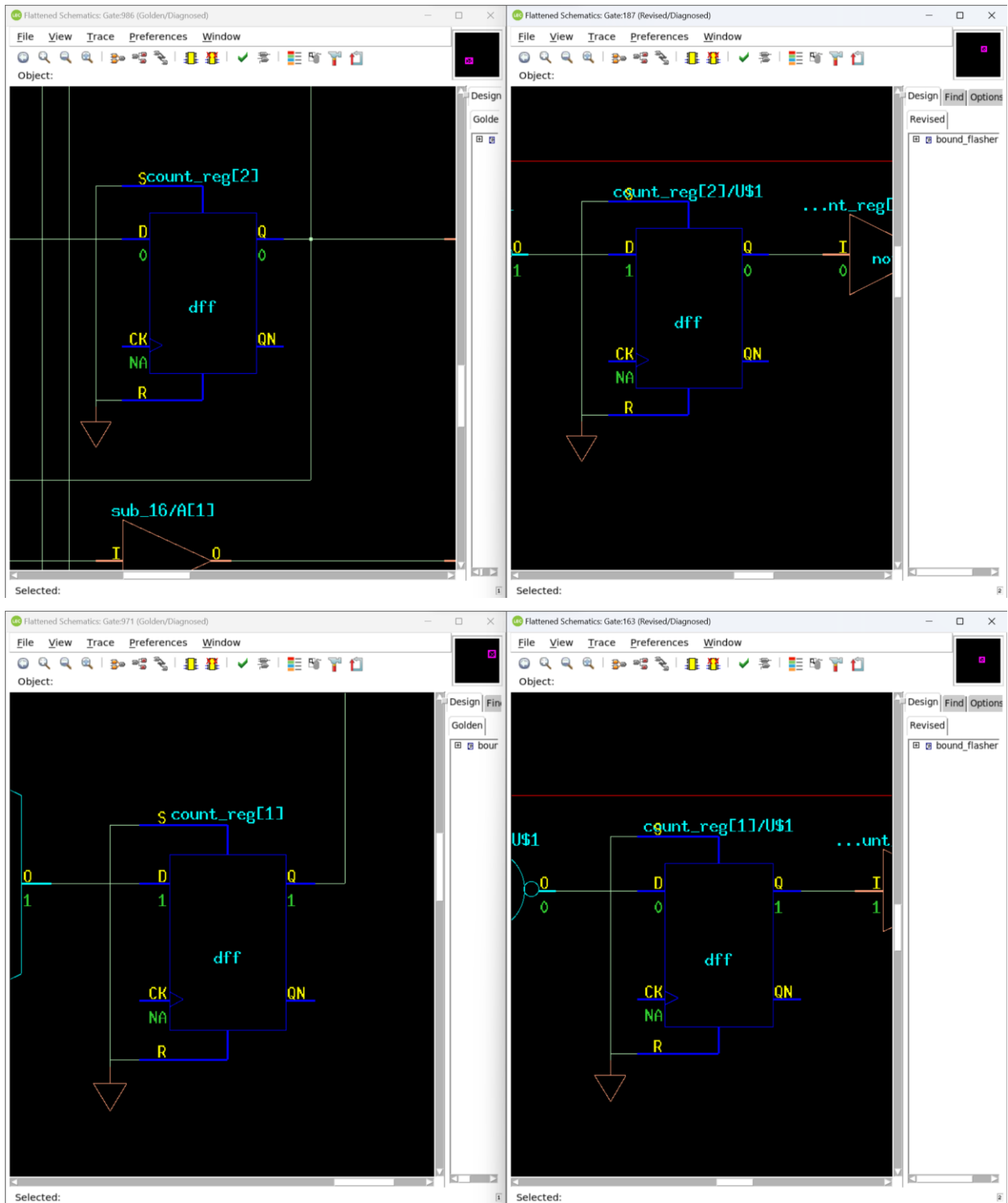


LOGIC EQUIVALENCES CHECK

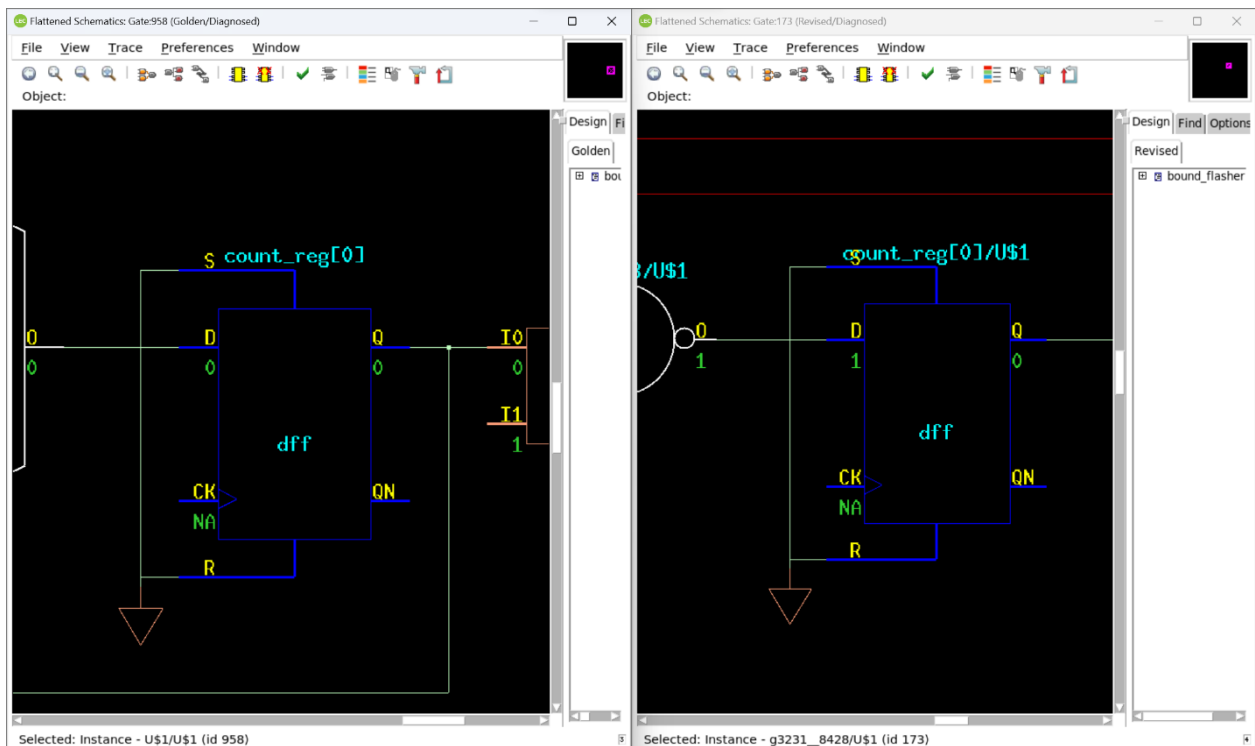
Bước 3: Kiểm tra count_reg



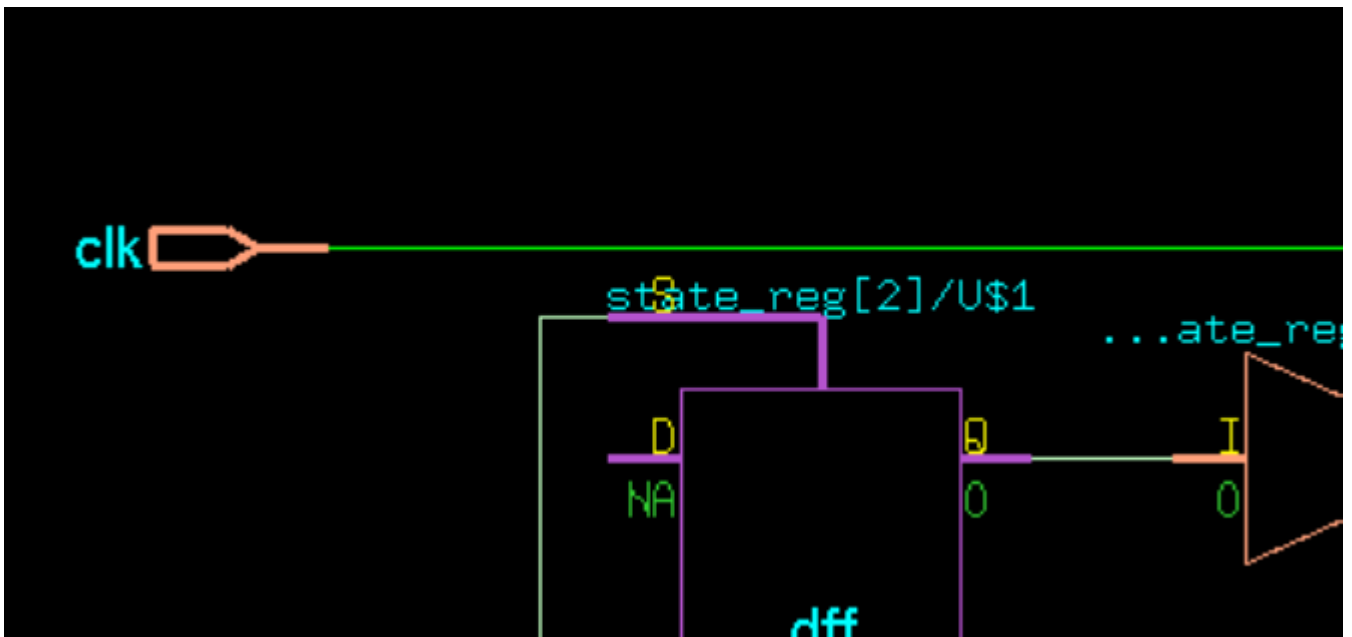
LOGIC EQUAIVALENCE CHECK



LOGIC EQUAIVALENCE CHECK

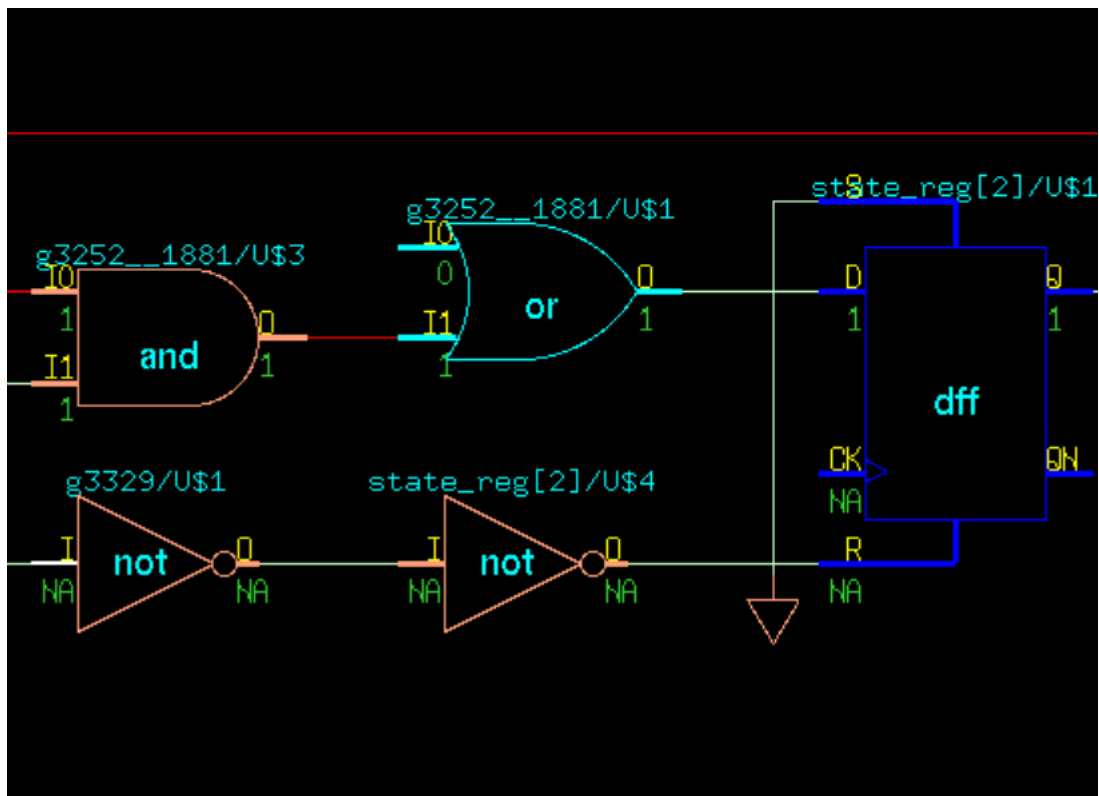
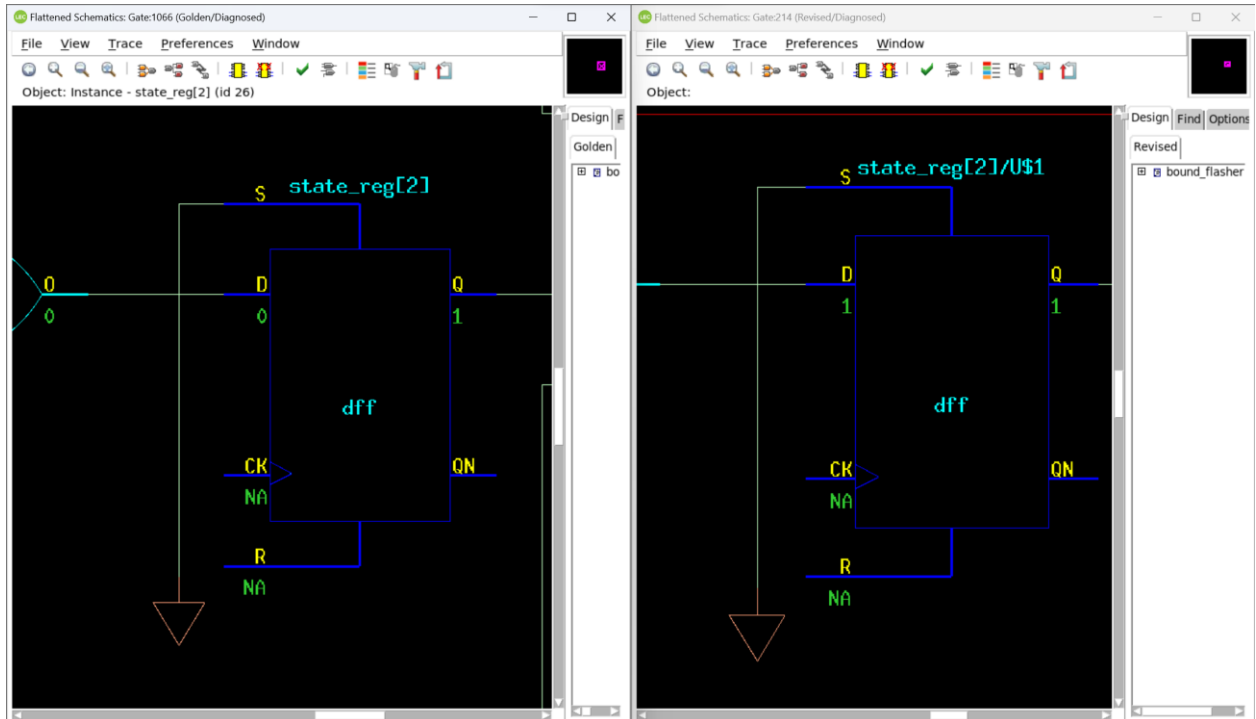


Hình ảnh trace back của các chân tín hiệu count_reg[0], count_reg[1], count_reg[2] và count_reg[3] là giống nhau:

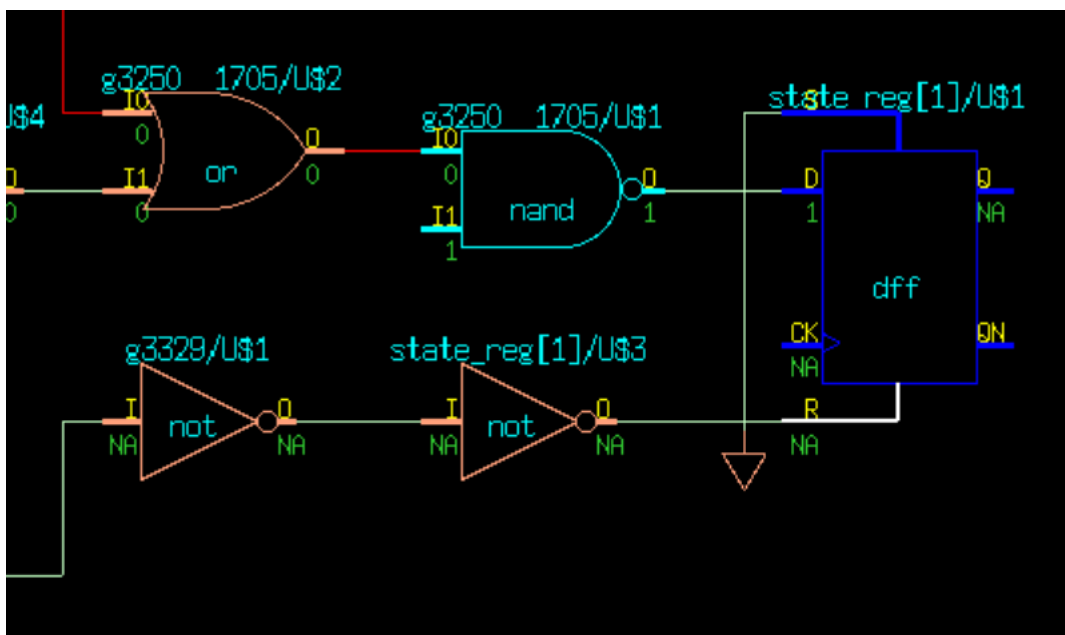
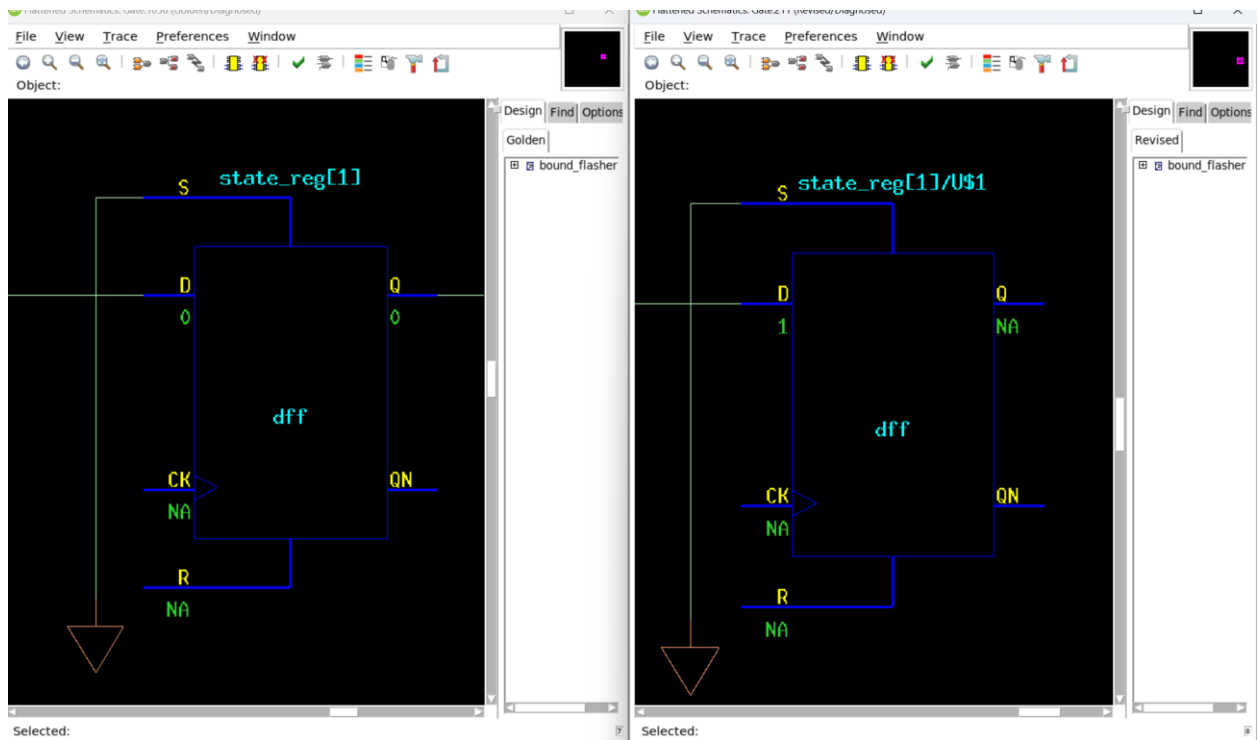


LOGIC EQUAIVALENCE CHECK

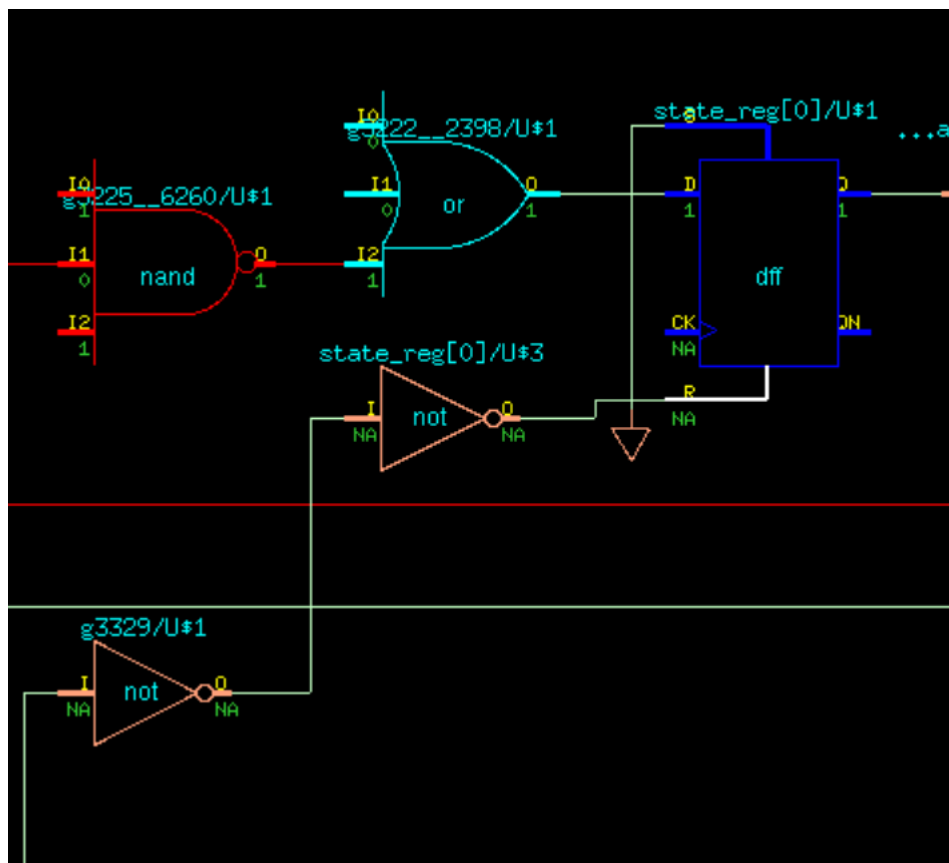
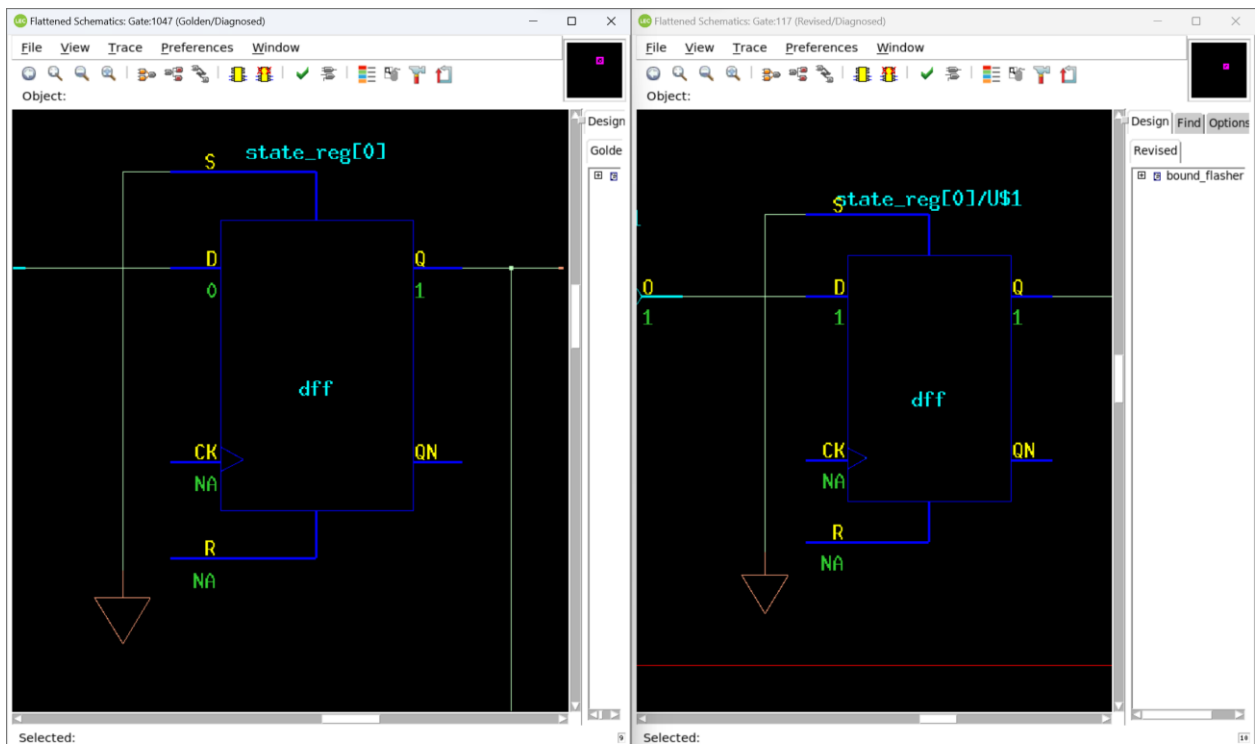
Bước 4: Kiểm tra state_reg



LOGIC EQUAIVALENCE CHECK



LOGIC EQUIVALENCY CHECK



LOGIC EQUAIVALENCE CHECK

Nhóm kiểm tra lại code và nhận ra một số lỗi: dư parameter S6 và bit thứ 4 của state không cần thiết

```
module bound_flasher(clk, reset, flick, out);
    parameter S0=0, S1=1, S2=2, S3=3, S4=4, S5=5, S6=6;
    input clk, reset, flick;
    output wire [15:0] out;
    reg [3:0] state;
    reg [4:0] count = 0;

    convert_num_to_led func(.num (count), .led (out));
```

Đoạn code bị lỗi

```
module bound_flasher(clk, reset, flick, out);
    parameter S0=0, S1=1, S2=2, S3=3, S4=4, S5=5;
    input clk, reset, flick;
    output wire [15:0] out;
    reg [2:0] state;
    reg [4:0] count = 0;

    convert_num_to_led func(.num (count), .led (out));
```

Đoạn code đã chỉnh sửa

The screenshot shows the Conformal(R) Logic Equivalence Checking tool interface. The top menu bar includes File, Compare, Tools, Custom, Preferences, Window, and Help. The main window is divided into two panes: Golden and Revised. The Golden pane shows the original code with 19 library cells and 33 primitives. The Revised pane shows the modified code with 98 library cells. Below the panes, a table displays the comparison results:

Mapped points	FI	PO	DFF	Total
Golden	3	16	8	27
Revised	3	16	8	27

The table indicates that the comparison is successful, with 24 compared points added to the compare list and 24 equivalent points found. The status bar at the bottom shows "Compare done!" and "100% completed".

Chạy lại lệnh ./go_lec và không còn non-equivalent points