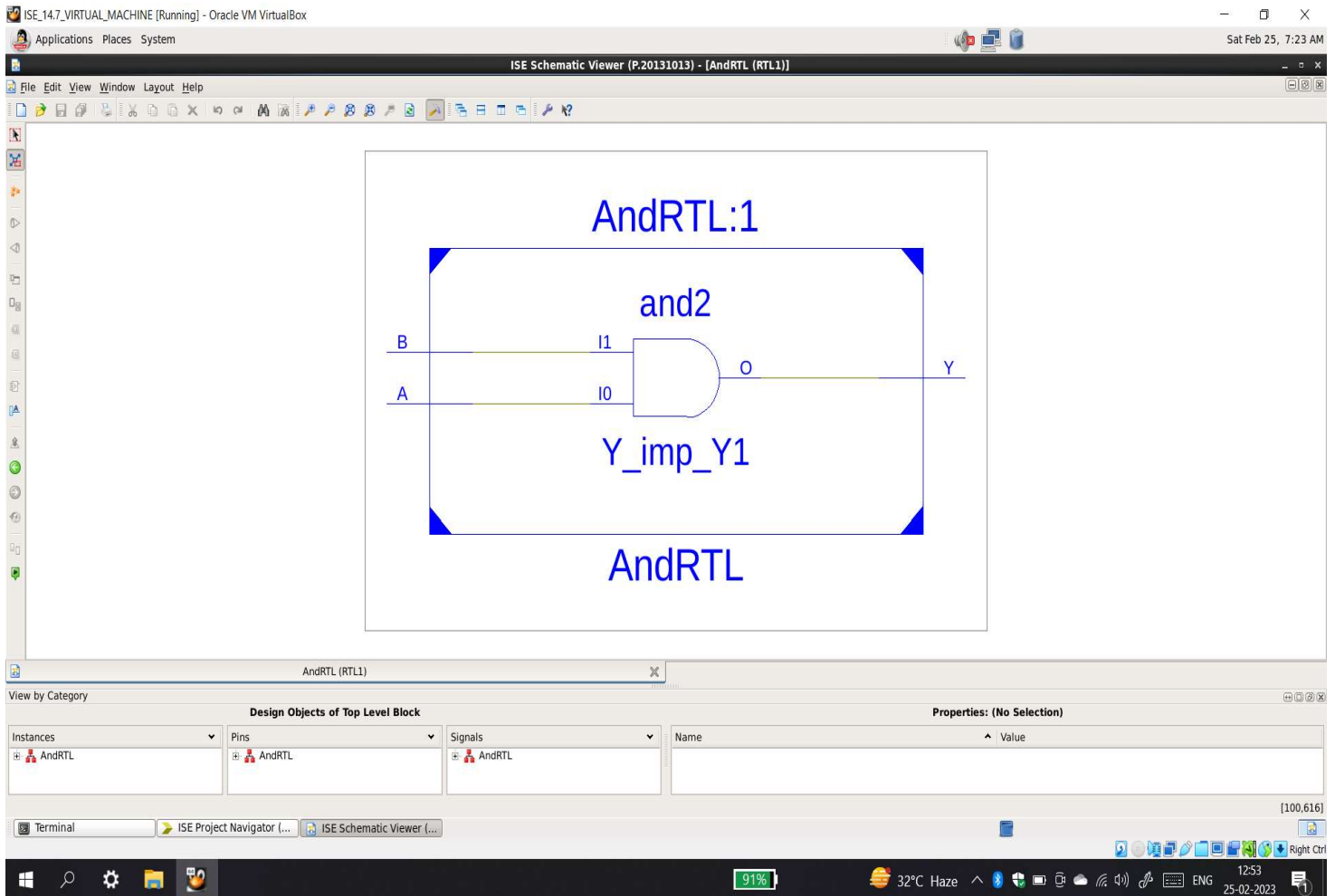
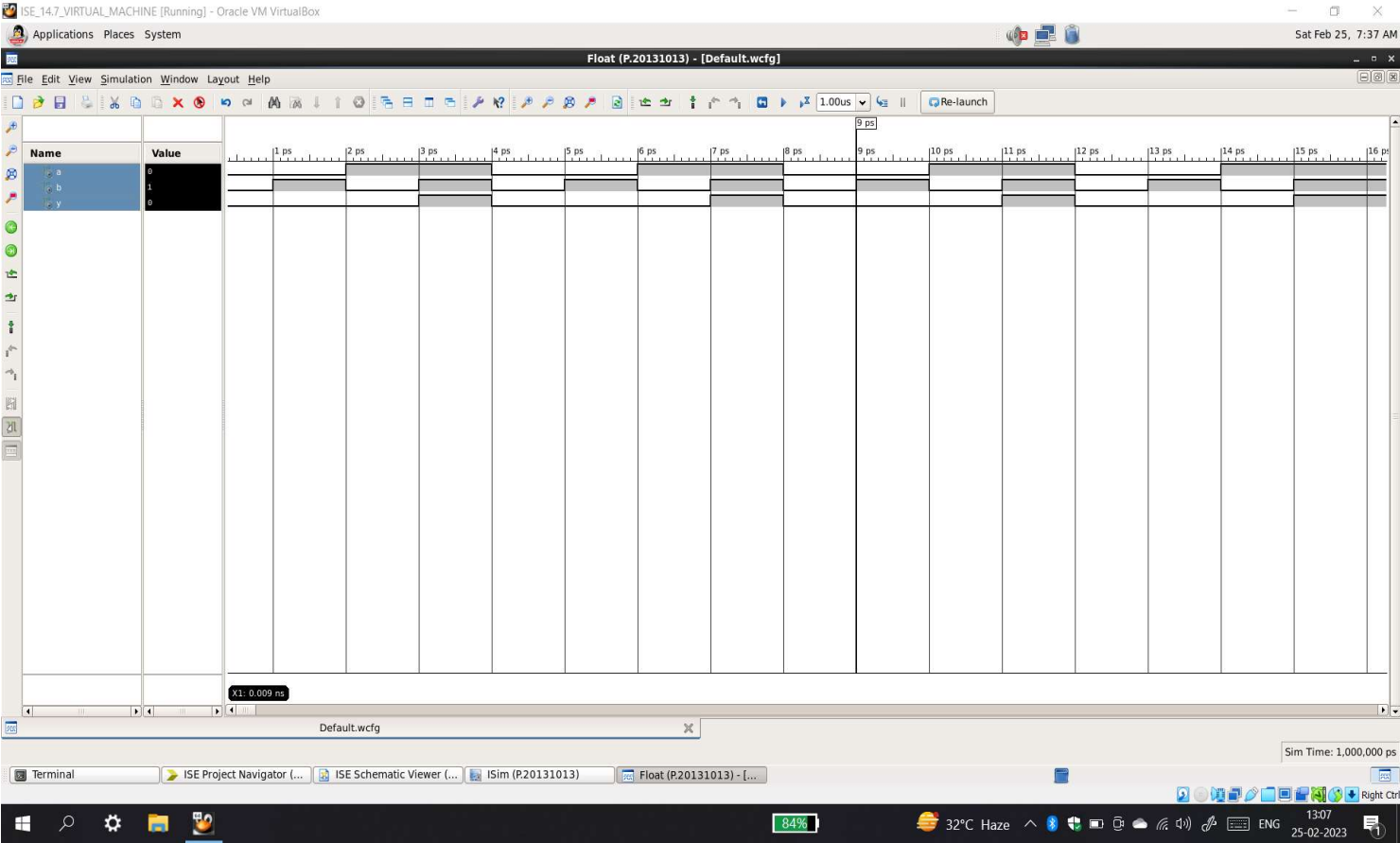


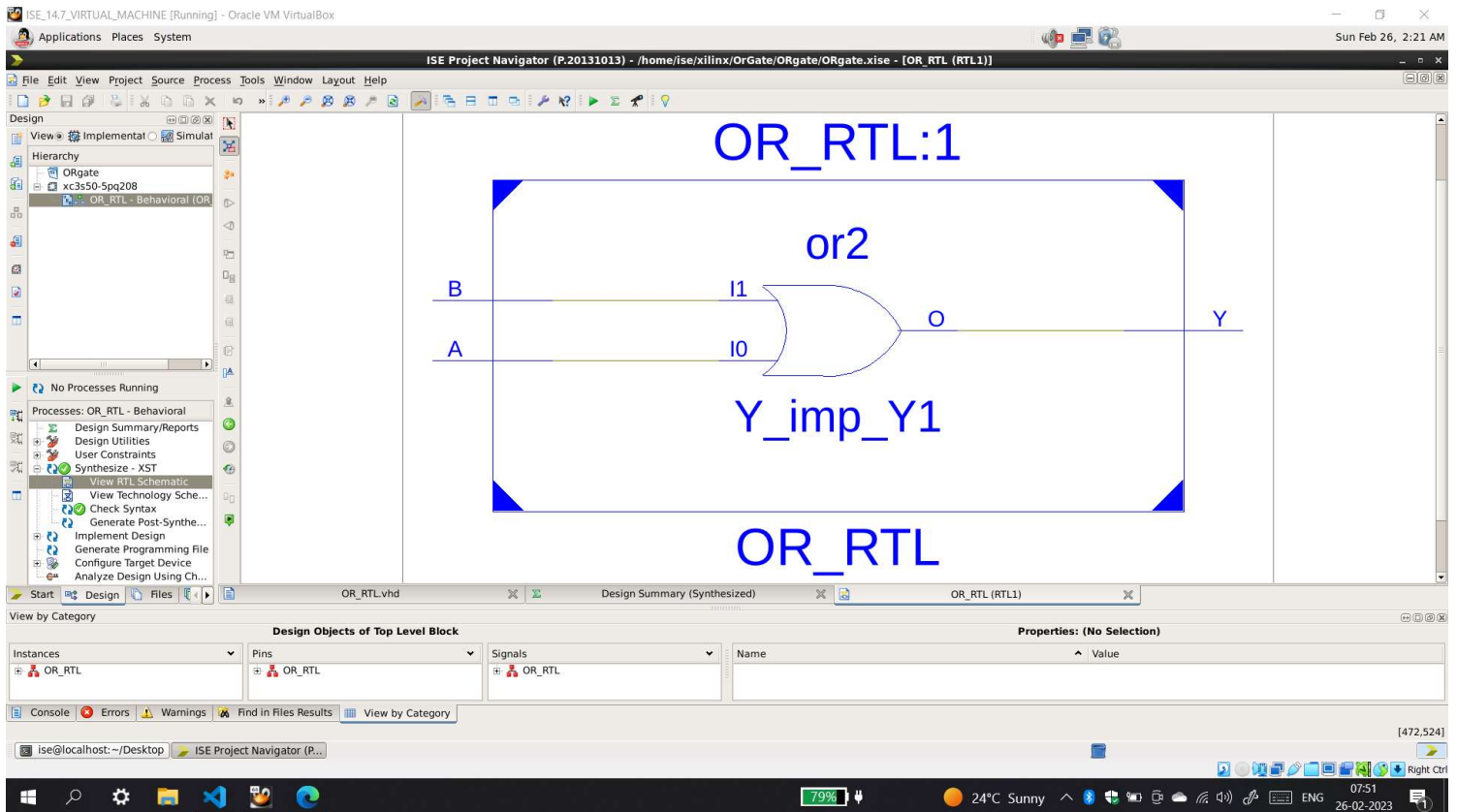
SCHEMATIC OUTPUT



TEST OUTPUT

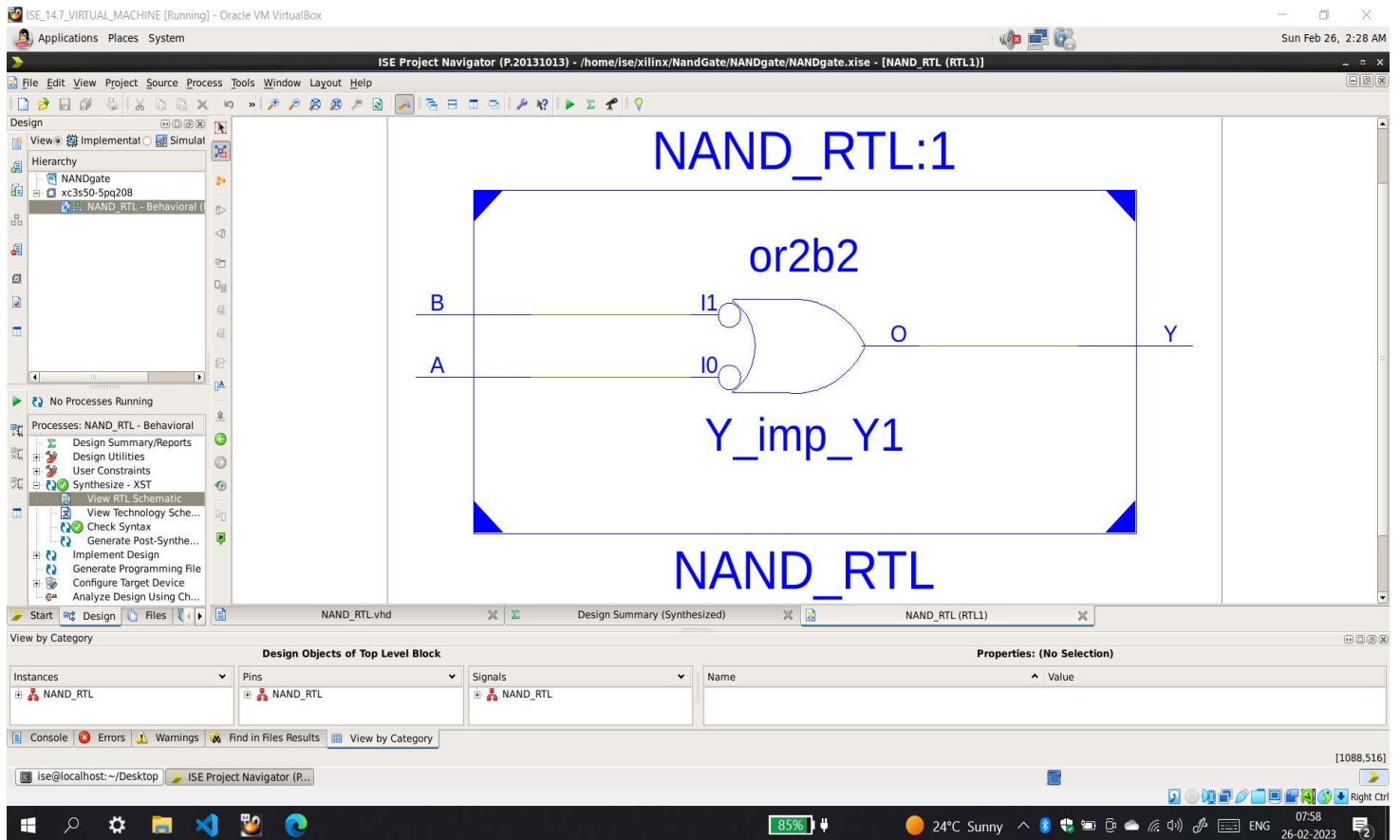


SCHEMATIC OUTPUT

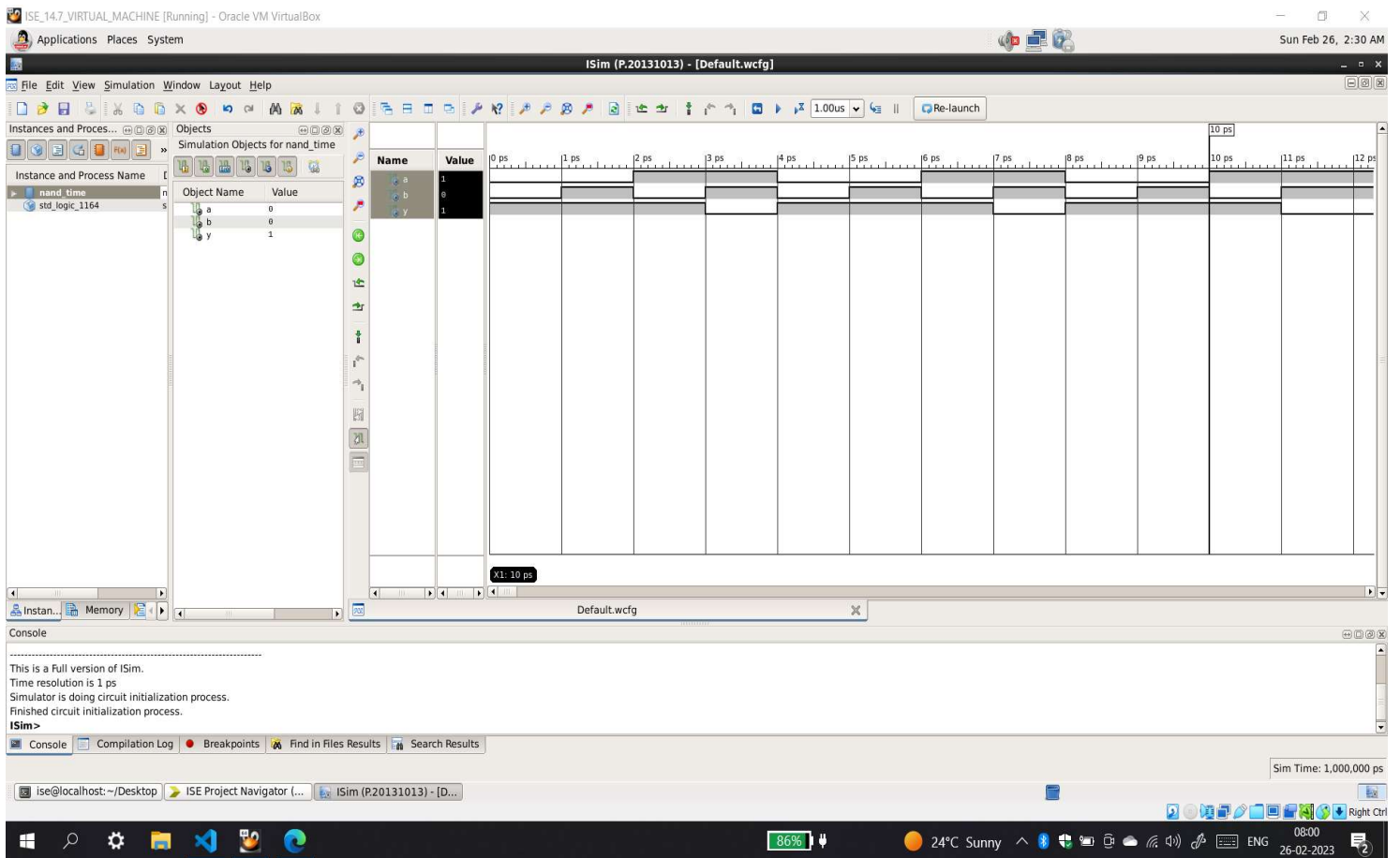


The screenshot displays the ISE 14.7 Virtual Machine interface. The main window is titled "ISim (P.20131013) - [Default.wcfg]". It features a menu bar (File, Edit, View, Simulation, Window, Layout, Help) and a toolbar. The left sidebar contains the "Instances and Process..." panel, showing the "std_logic_1164" instance. The main area is a timing diagram with a time axis from 0 ps to 12 ps. Three signals are plotted: 'a' (a square wave), 'b' (a square wave), and 'y' (a square wave). The console window at the bottom shows the ISim initialization process, including the message "This is a Full version of ISim." and "Simulator is doing circuit initialization process." The status bar at the bottom indicates the simulation time is 1,000,000 ps.

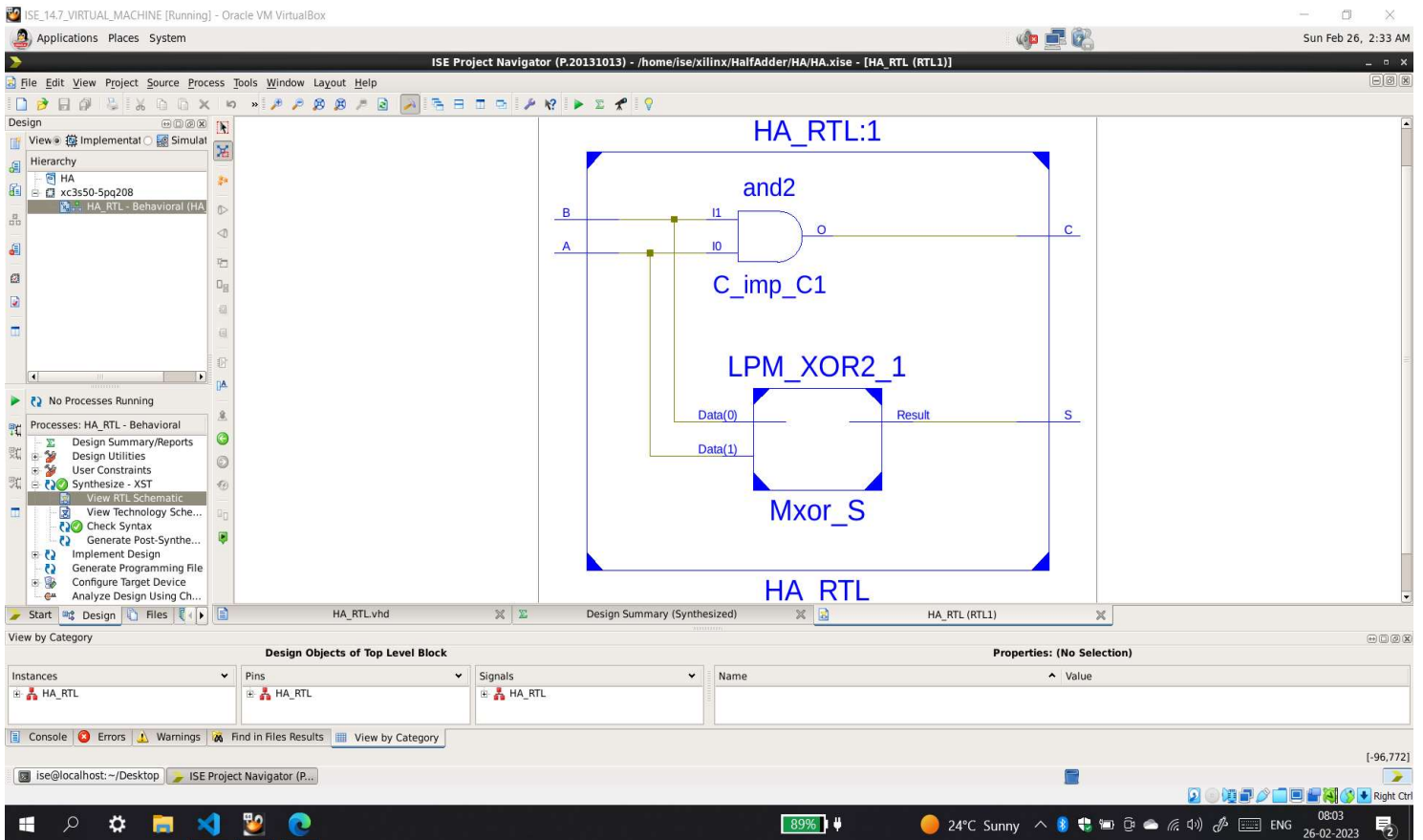
SCHEMATIC OUTPUT



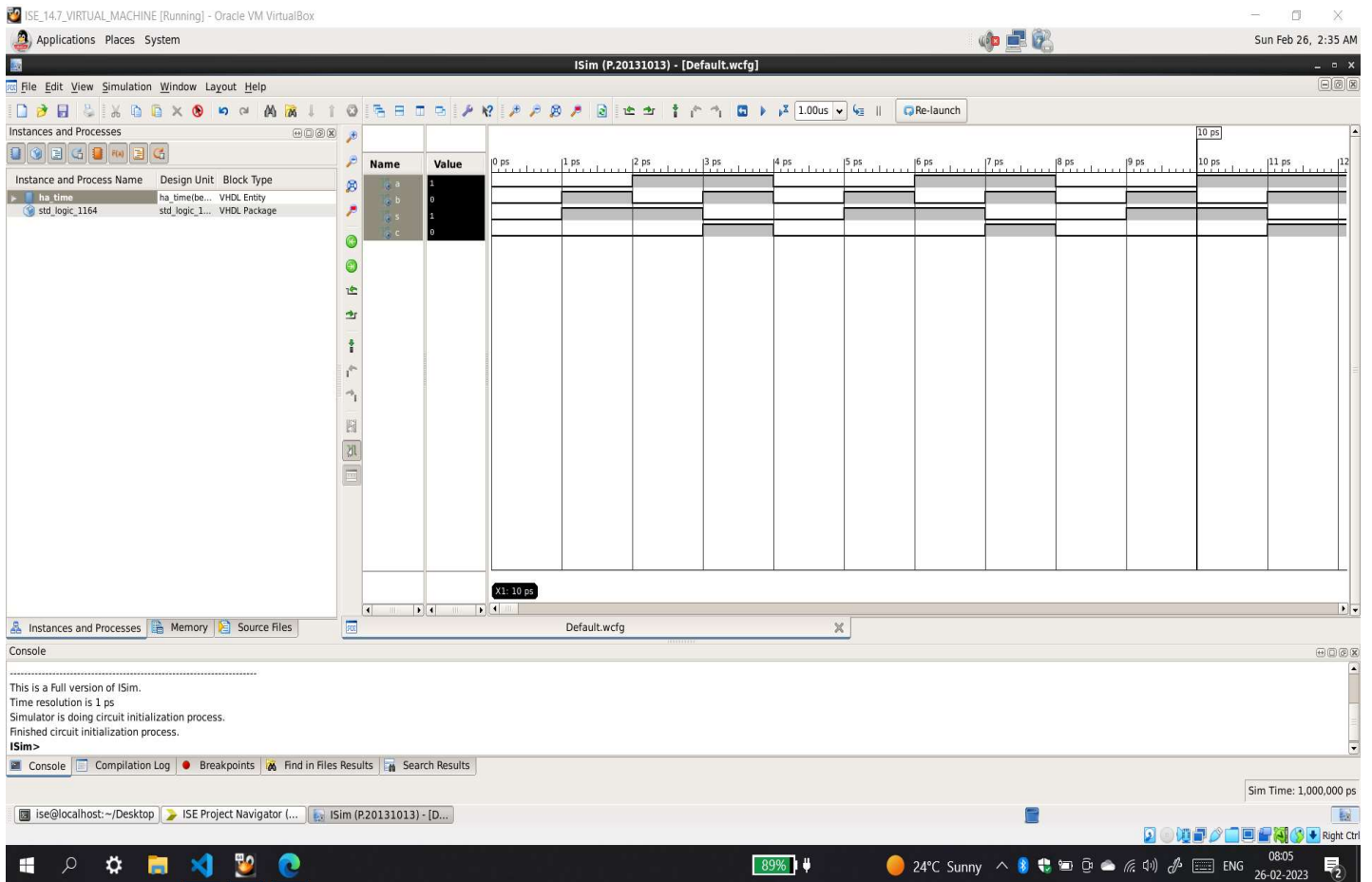
TEST OUTPUT



SCHEMATIC OUTPUT



TEST OUTPUT



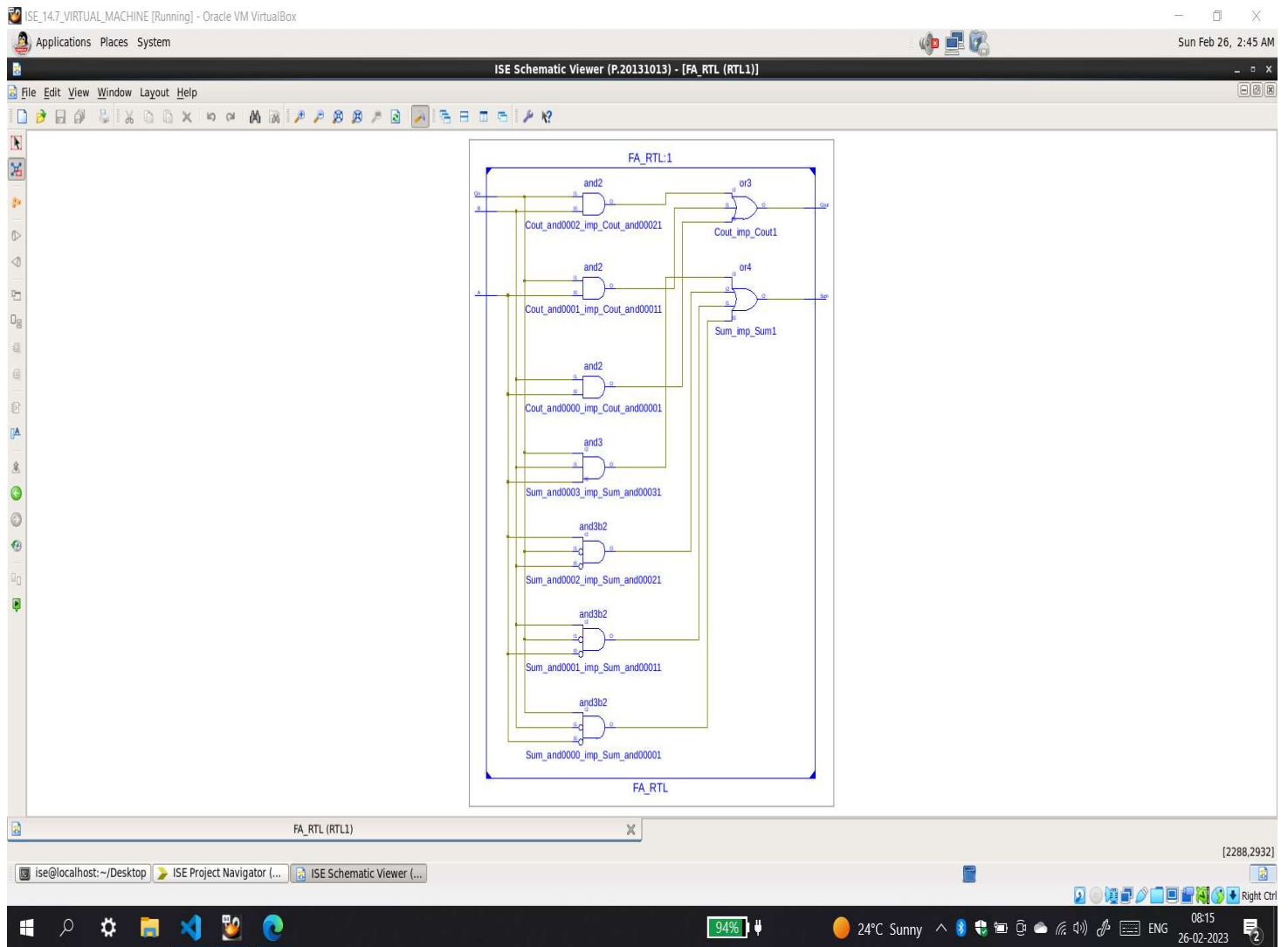
OUTPUT

```
student@c05-60: ~/Desktop/arka
student@c05-60:~/Desktop/arka$ gcc Q1.c
student@c05-60:~/Desktop/arka$ ./a.out
Enter the number of elements:
4
Enter the element 1: 12
Enter the element 2: 23
Enter the element 3: 34
Enter the element 4: 67
The array of elements is:
12 23 34 67 Enter the element to be searched for: 23
Element found at position 1
student@c05-60:~/Desktop/arka$ ./a.out
Enter the number of elements:
5
Enter the element 1: 34
Enter the element 2: 45
Enter the element 3: 56
Enter the element 4: 67
Enter the element 5: 100
The array of elements is:
34 45 56 67 100 Enter the element to be searched for: 100
Element found at position 4
student@c05-60:~/Desktop/arka$ ./a.out
Enter the number of elements:
3
Enter the element 1: 12
Enter the element 2: 23
Enter the element 3: 44
The array of elements is:
12 23 44 Enter the element to be searched for: 12
Element found at position 0
student@c05-60:~/Desktop/arka$
```

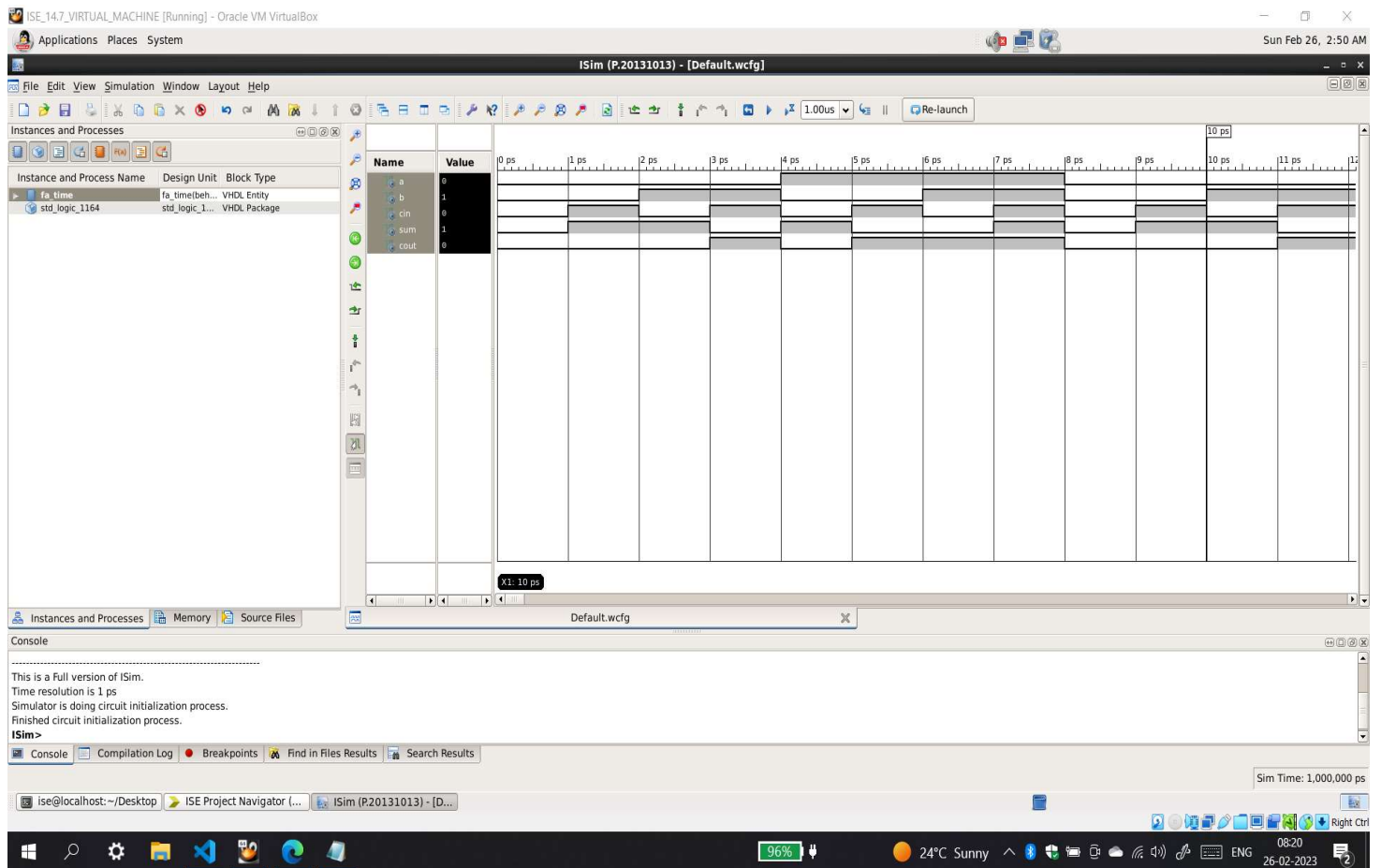
OUTPUT

```
student@c05-60: ~/Desktop/arka
student@c05-60:~/Desktop/arka$ gcc Q2.c
student@c05-60:~/Desktop/arka$ ./a.out
Enter the number of elements: 4
Enter the element 1:12
Enter the element 2:23
Enter the element 3:3
Enter the element 4:8
The Array is: 12 23 3 8
Enter the choice 1->mergesort 2->quick sort 3->heap sort
1
The sorted array is: 3 8 12 23 student@c05-60:~/Desktop/arka$ ./a.out
Enter the number of elements: 3
Enter the element 1:12
Enter the element 2:23
Enter the element 3:2
The Array is: 12 23 2
Enter the choice 1->mergesort 2->quick sort 3->heap sort
2
The sorted array is: 2 12 23 student@c05-60:~/Desktop/arka$ ./a.out
Enter the number of elements: 2
Enter the element 1:34
Enter the element 2:3
The Array is: 34 3
Enter the choice 1->mergesort 2->quick sort 3->heap sort
3
The sorted array is: 3 34 student@c05-60:~/Desktop/arka$
```

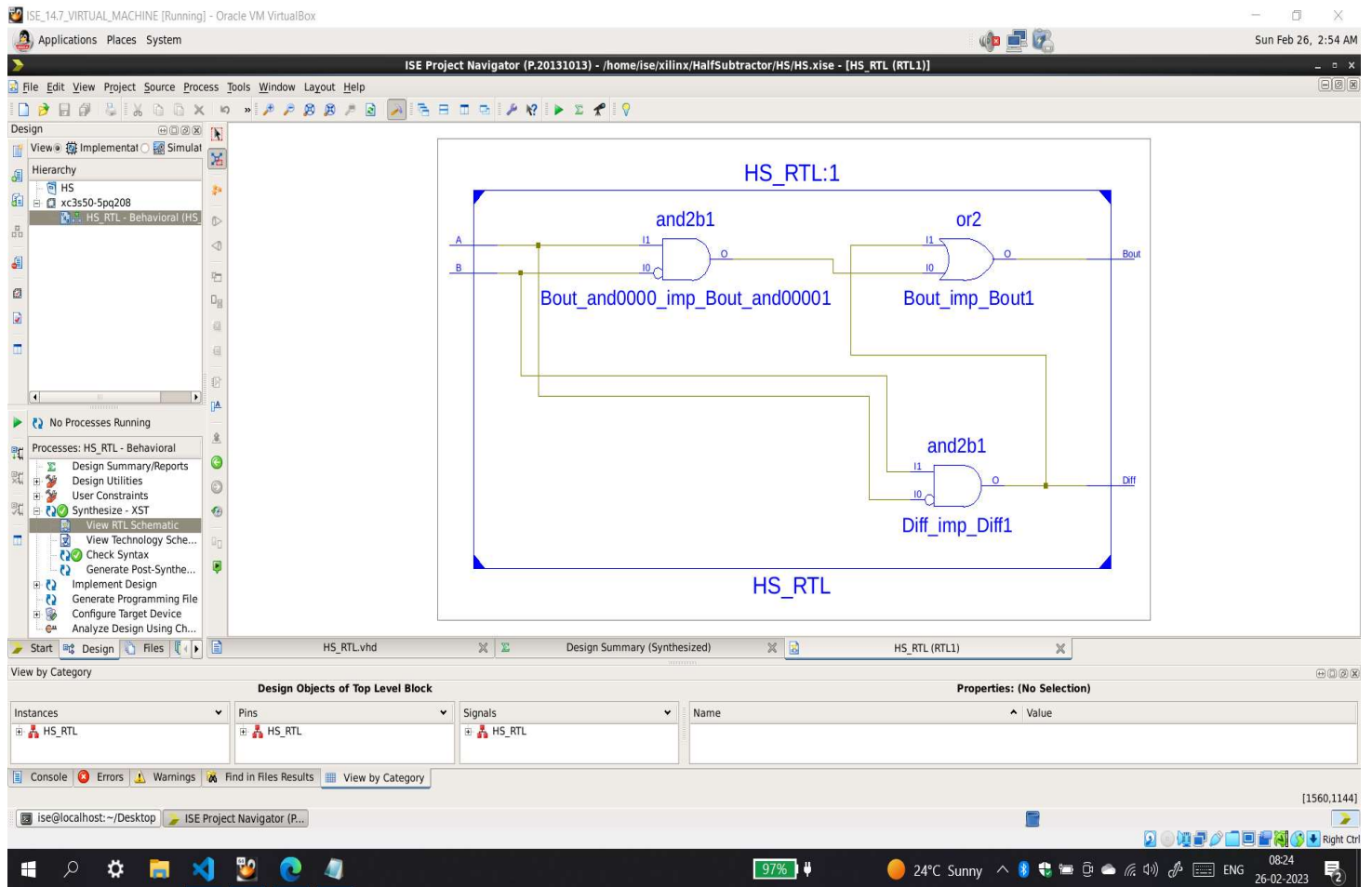
SCHEMATIC OUTPUT



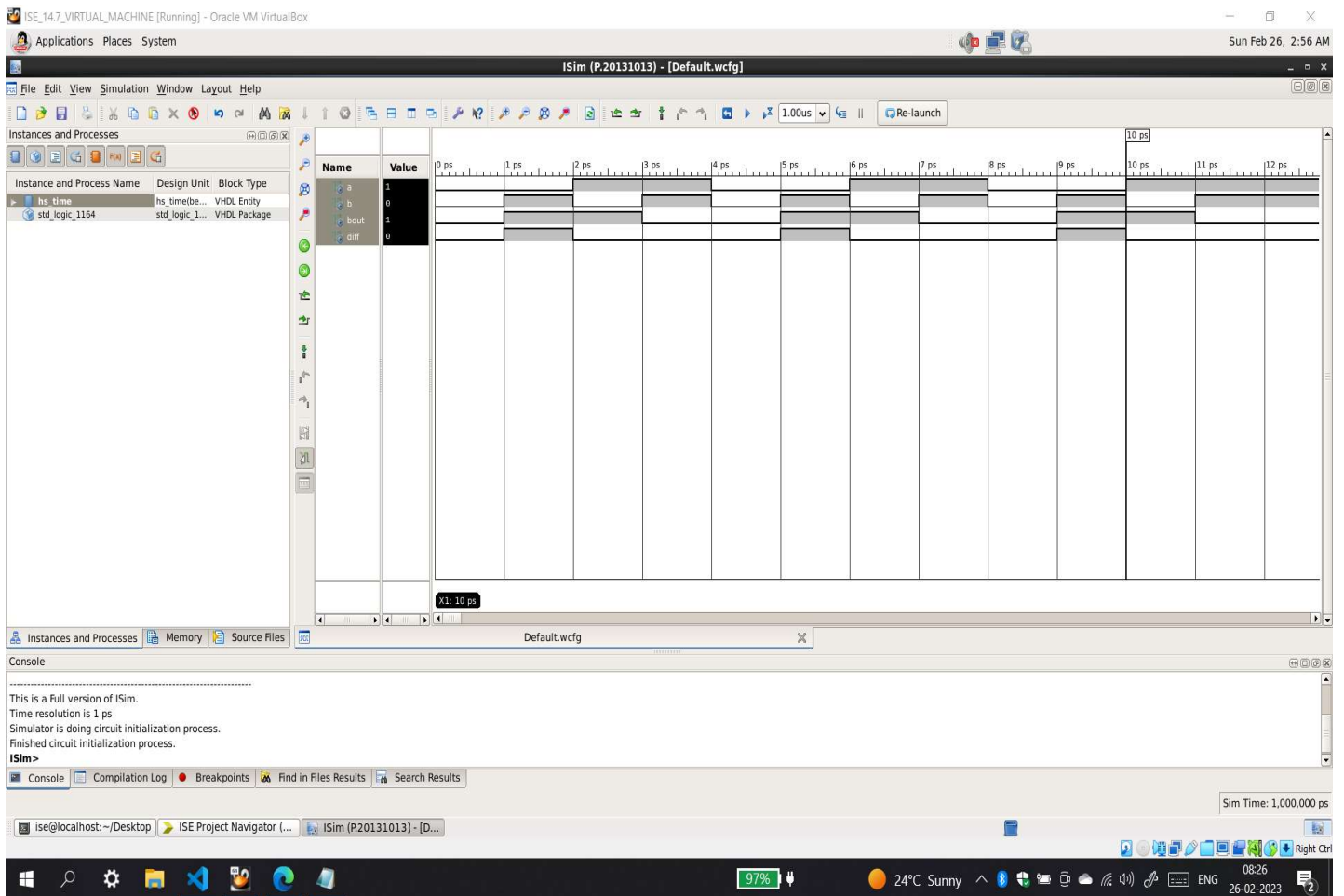
TEST OUTPUT



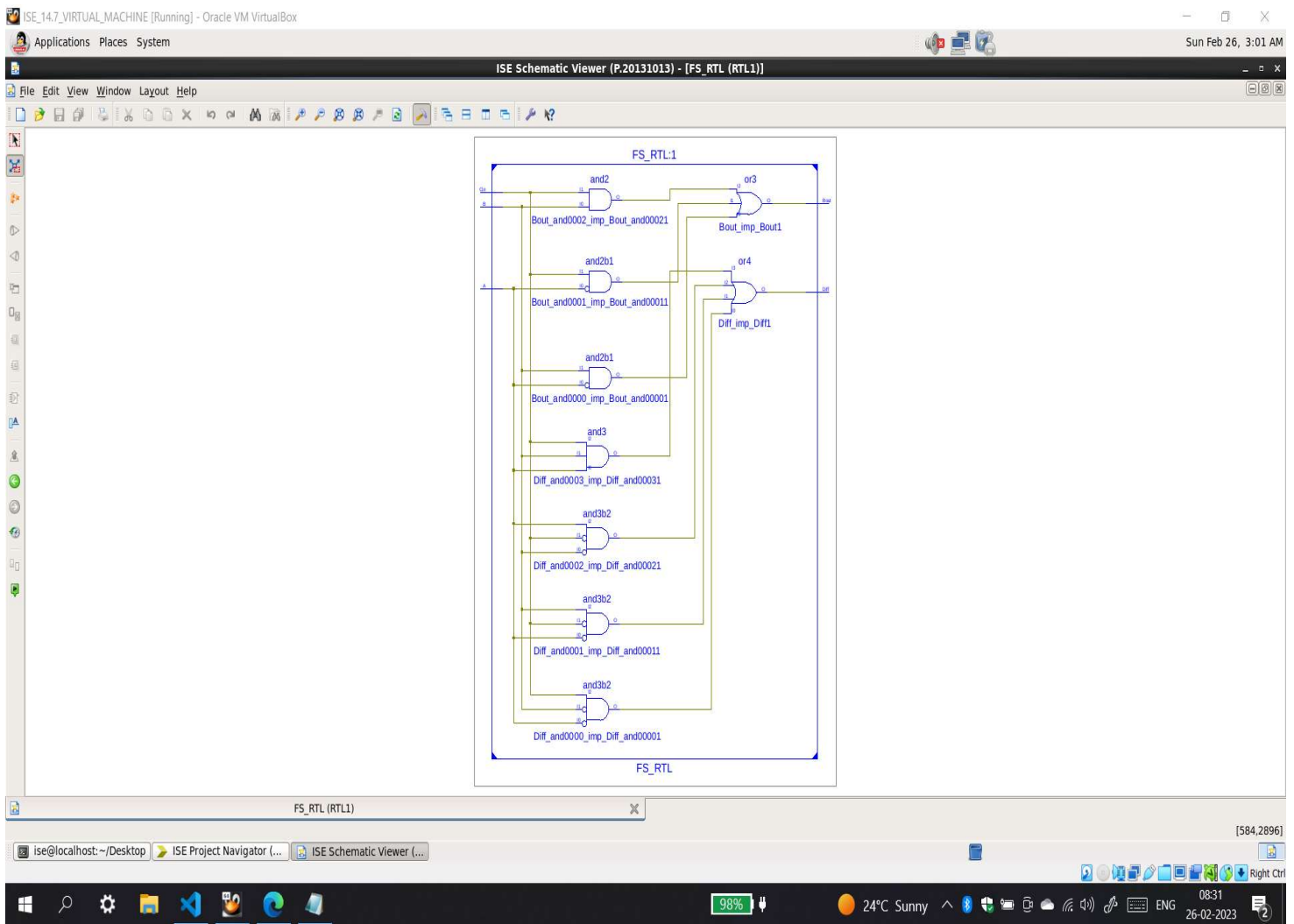
SCHEMATIC OUTPUT



TEST OUTPUT



SCHEMATIC OUTPUT



TEST OUTPUT

