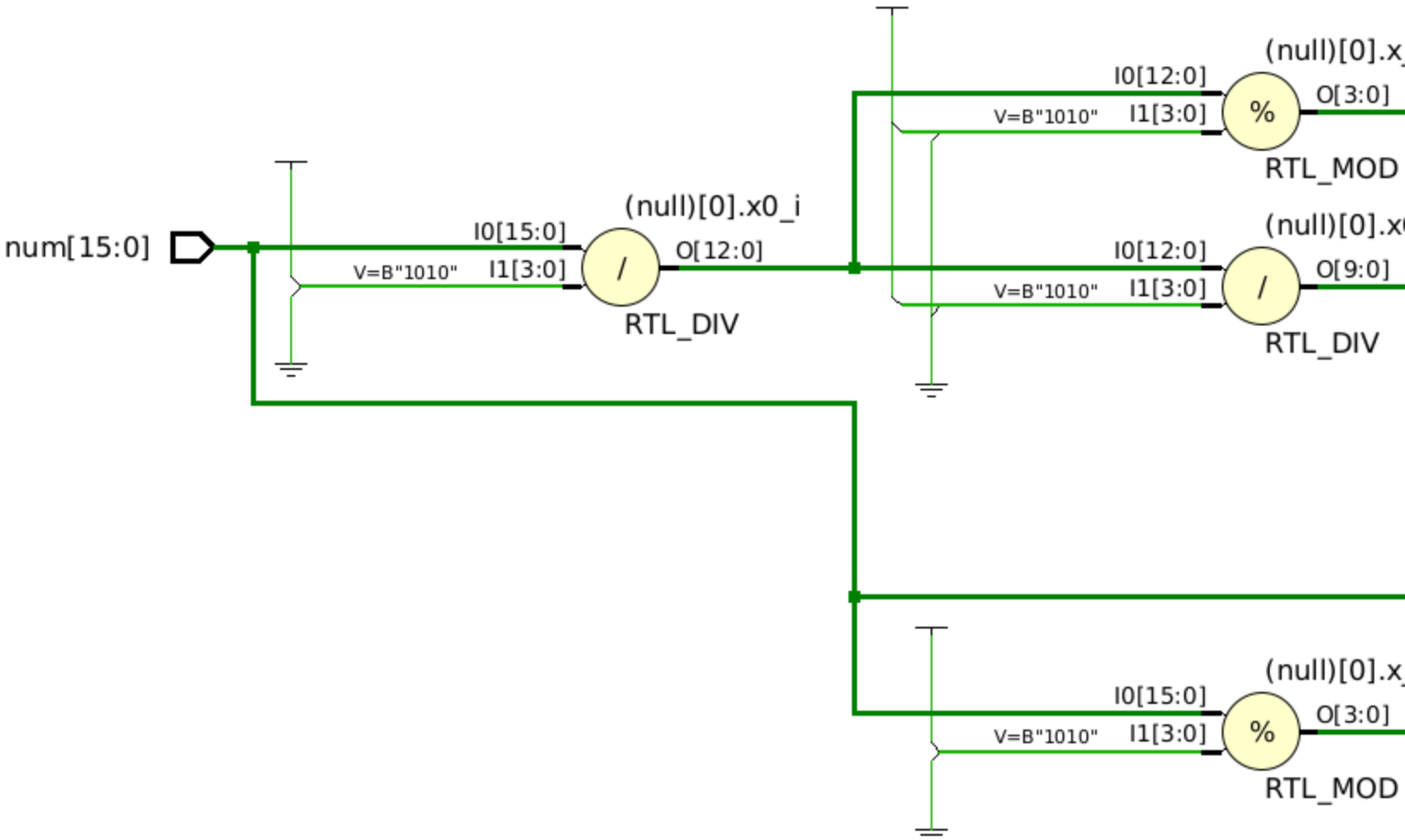
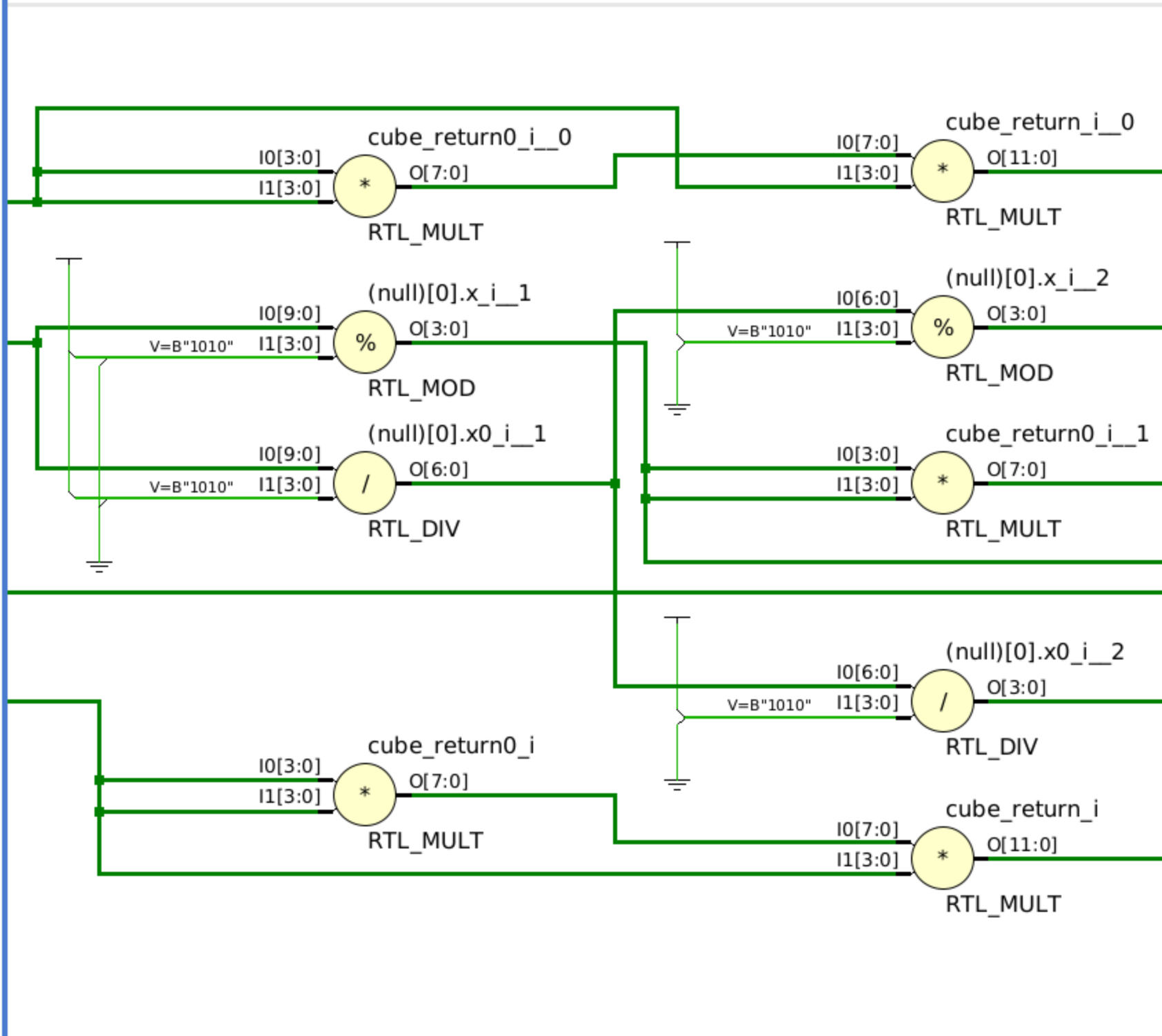
Project Summary | Armstrong_Checker.v | tb_Armstrong_Checker.v | Schematic

24 Cells 17 I/O Ports 231 Nets



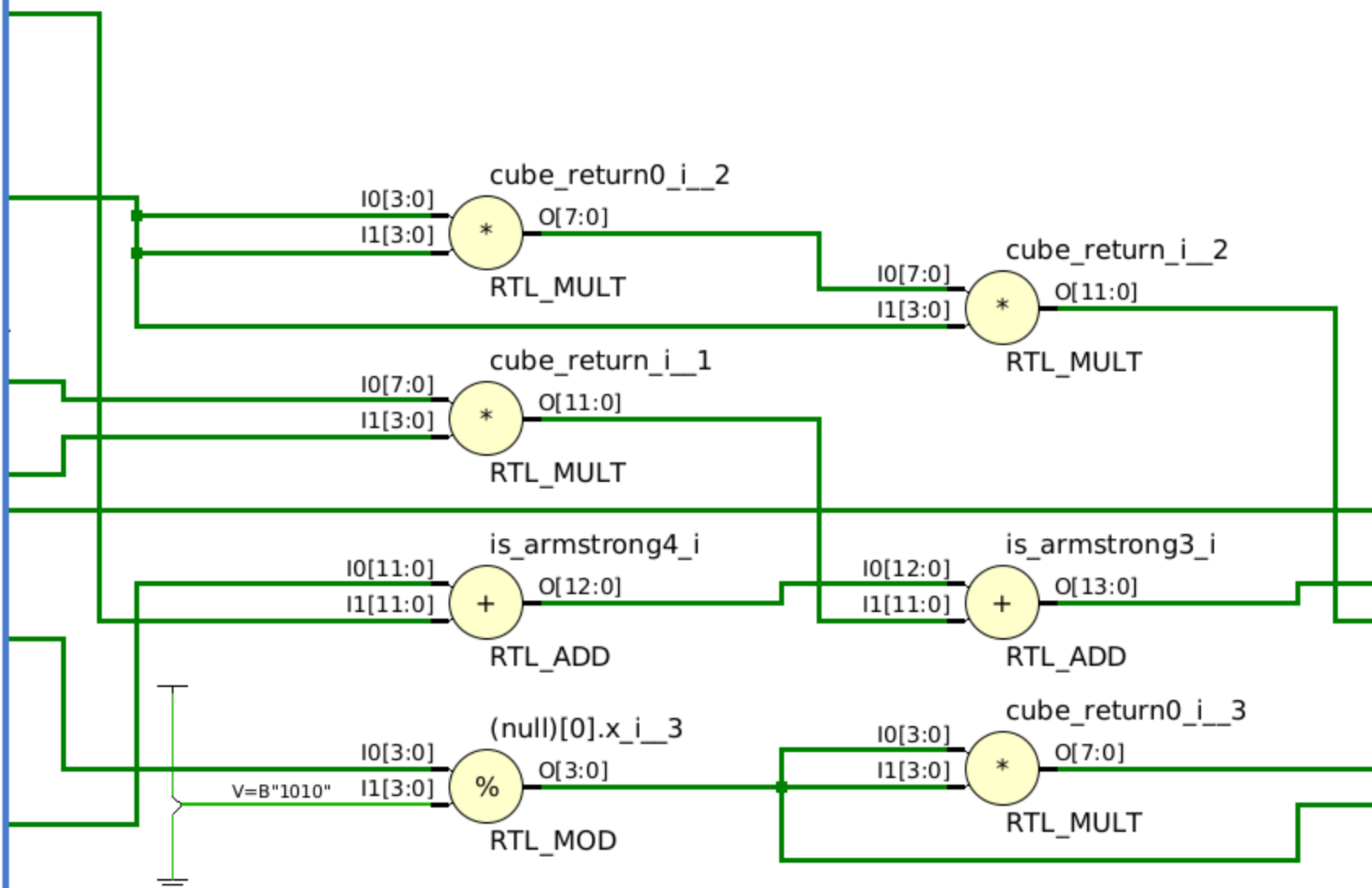
Tcl Console | Messages | Log | Reports | Design Runs

24 Cells 17 I/O Ports 231 Nets



Project Summary | Armstrong_Checker.v | tb_Armstrong_Checker.v | Schematic

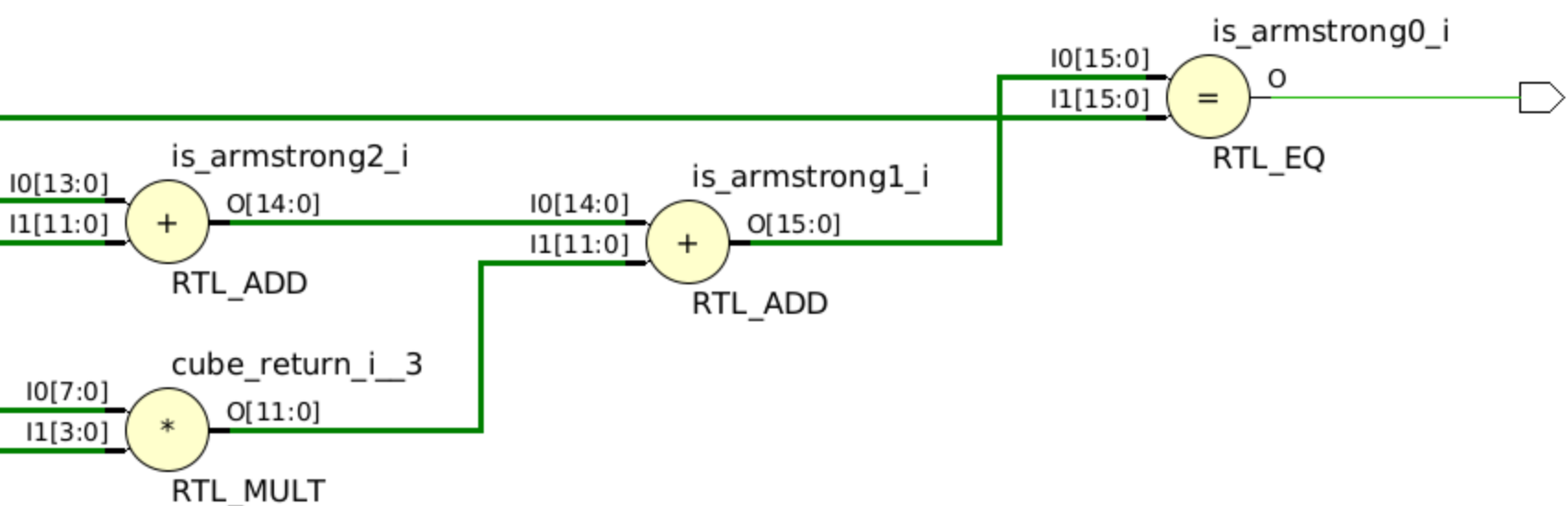
24 Cells 17 I/O Ports 231 Nets

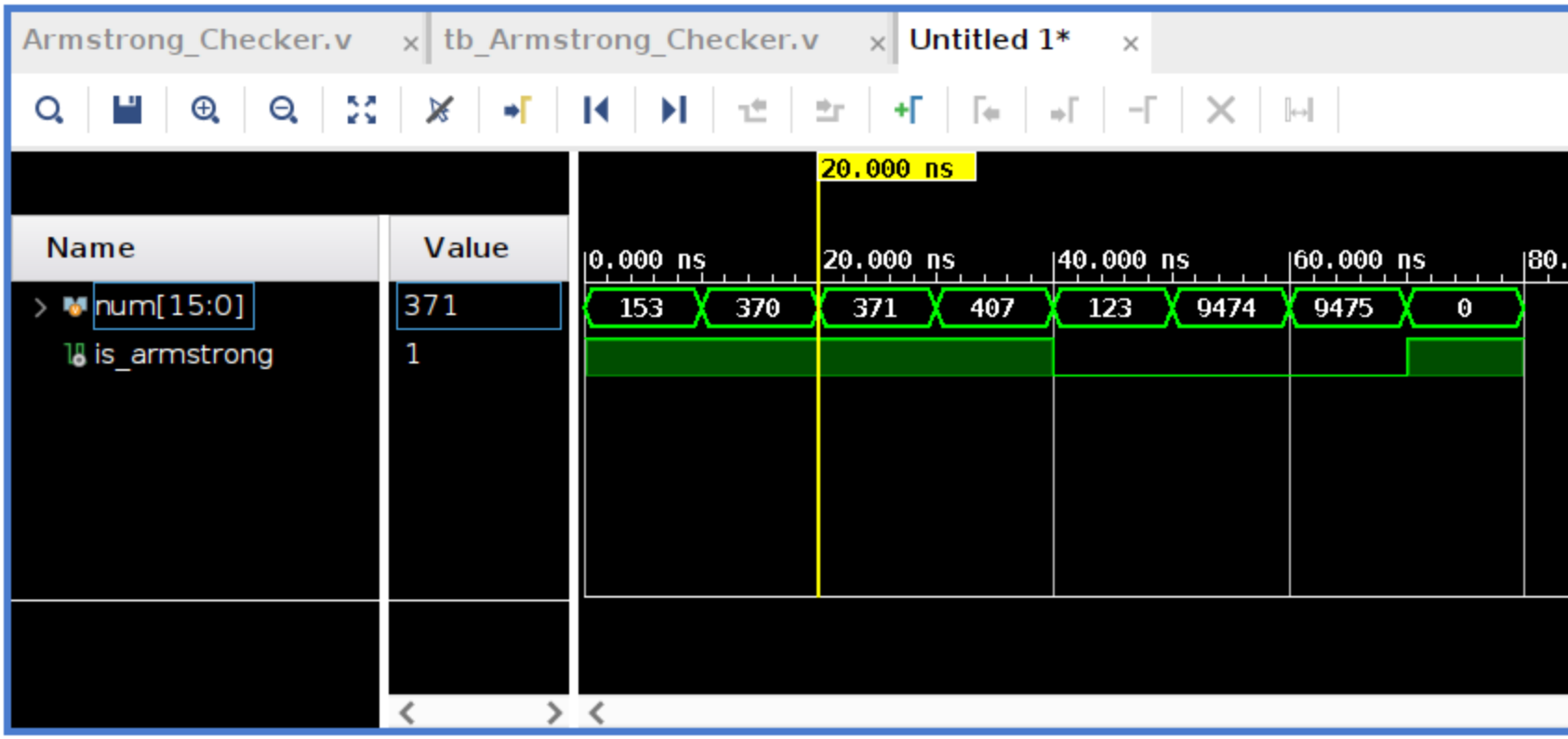


Tcl Console | Messages | Log | Reports | Design Runs

necker.v × Schematic ×

17 I/O Ports 231 Nets





Tcl Console | Messages | Log

```
#   } else {
#       send_msg_id Add_Wave-1 WARNING "No top level signals found. Simulator will start wi
#   }
# }
# run 1000ns
Time=0, num=  153, is_armstrong=1
Time=10000, num=  370, is_armstrong=1
Time=20000, num=  371, is_armstrong=1
Time=30000, num=  407, is_armstrong=1
Time=40000, num=  123, is_armstrong=0
Time=50000, num= 9474, is_armstrong=0
Time=60000, num= 9475, is_armstrong=0
Time=70000, num=    0, is_armstrong=1
$stop called at time : 80 ns : File "/home/itzzinfinity/Cozy Drive/100daysofRTL/day_080/pr
INFO: [USF-XSim-96] XSim completed. Design snapshot 'tb_Armstrong_Checker_behav' loaded.
INFO: [USF-XSim-97] XSim simulation ran for 1000ns
launch_simulation: Time (s): cpu = 00:00:08 ; elapsed = 00:00:08 . Memory (MB): peak = 809
```

Type a Tcl command here

Armstrong_Checker.v | tb_Armstrong_Checker.v | Untitled 1*

/home/itzzinfinity/Cozy Drive/100daysofRTL/day_080/project_1/project_1.srcs/sources_1/new/Armstrong_Checke

```
1  `timescale 1ns / 1ps
2  //////////////////////////////////////////////////////////////////////////////////
3  // Engineer: Anjan Prasad
4  // Create Date: 12/10/2024 05:39:03 AM
5  // Module Name: Armstrong_Checker
6  //////////////////////////////////////////////////////////////////////////////////
7
8  module Armstrong_Checker(
9      input [15:0] num,
10     output reg is_armstrong
11 );
12     reg [15:0] temp;
13     reg [3:0] digit;
14     reg [31:0] sum;
15     integer i;
16
17     function [31:0] cube;
18         input [15:0] x;
19         begin
20             cube = x * x * x;
21         end
22     endfunction
23
24     always @(*) begin
25         temp = num;
26         sum = 0;
27
28         for (i = 0; i < 5; i = i + 1) begin
29             digit = temp % 10;
30             sum = sum + cube(digit);
31             temp = temp / 10;
32         end
33
34         is_armstrong = (sum == num);
35     end
36 endmodule
37
38
```

Tcl Console | Messages | Log

Armstrong_Checker.v | tb_Armstrong_Checker.v | Untitled 1*

/home/itzzinfinity/Cozy Drive/100daysofRTL/day_080/project_1/project_1.srcs/sim_1/new/tb_Armstrong_Checker.

```
1  `timescale 1ns / 1ps
2  //////////////////////////////////////////////////////////////////////////////////
3  // Engineer: Anjan Prasad
4  // Create Date: 12/10/2024 05:46:32 AM
5  // Module Name: tb_Armstrong_Checker
6  //////////////////////////////////////////////////////////////////////////////////
7
8  module tb_Armstrong_Checker;
9      reg [15:0] num;
10     wire is_armstrong;
11
12
13     Armstrong_Checker DUT (
14         .num(num),
15         .is_armstrong(is_armstrong)
16     );
17
18     initial begin
19         $monitor("Time=%0t, num=%d, is_armstrong=%b", $time, num, is_armstrong);
20
21
22         num = 16'd153; #10;   // (1^3 + 5^3 + 3^3 = 153)
23         num = 16'd370; #10;   // (3^3 + 7^3 + 0^3 = 370)
24         num = 16'd371; #10;   // (3^3 + 7^3 + 1^3 = 371)
25         num = 16'd407; #10;   // (4^3 + 0^3 + 7^3 = 407)
26         num = 16'd123; #10;   // Not an Armstrong number
27         num = 16'd9474; #10;  // (9^3 + 4^3 + 7^3 + 4^3 = 9474)
28         num = 16'd9475; #10;  // Not an Armstrong number
29         num = 16'd0;    #10;
30         $stop;
31     end
32 endmodule
33
```

Tcl Console | Messages | Log