module random(clk, reset, out);
    input clk, reset;
    output y3, y4;
    reg y1, y2, y3, y4;

    always @(posedge clk)
    begin
        if (reset)
            begin
                y1 = 1; y2 = 0; y3 = 0; y4 = 1; end
        else
            begin
                y2 = y1 ^ y4;
                y3 = y2 & y1;
                y4 = y3;
            end
    end

    assign o = {y2, y3, y4}';
endmodule
module ( )

reg [7:0] o;
always @ (posedge clk)
begin
    $a = 0;
    else
    begin
        $a = 1;
        o = 0 @ 2;
    end
end

pushbutton

16x16 lookuptable

logiccell

slice

FF

user constraint
module Acc (out, In, clk, reset)

input [15:0] In;
input clk, reset;
output 31:0] out;

always @ (posedge clk)
if (!reset)
out <= 0;
else
out <= out + In;
endmodule

assign w = out + In;
always @ (posedge clk)
out <= w;

assign begin

if (!reset)
out <= 0;
else
out <= out + In;
end
always @ (posedge clk)
begin
    reg $1, $2;
    $1 <= In;
    $2 <= $1;
end
assign out $3 = $2 ;

### NUMBERS

- For the addition operation, the algorithm is used to find the sum: $23 + a = h + \text{output}$.
- The input is a string, the output is also a string, resulting in a sum of 32.
- The output is $w = \text{output} + \text{In}$.
- $w = 32 \times 16 = 512$.

Example solving:

- Consider the number $8^3.6$.
- Convert it to binary: 1000.11.
- The result is $0.11$.

`wire [7:0] w; wire [15:0] a; output [15:0] q; assign Q = a + [8'h6, w];`
module Counter(out, clk);
  output [3:0] out;
  input clk;
  reg [3:0] out;
  always @(posedge clk)
    out <= out + 1;
end module
module mux2 (In1, In2, C, out);
  input In1, In2, C;
  output out;

  procedural continuous assignment
  assign out = (C == 1) ? In1 : In2;

endmodule

mul 4 (c = 0) ? In1 : In2 : (c = 1) ? In2 : In3;

module mux2 (out, In1, In2, C);
  output out;
  input In1, In2, C;
  reg out;

  always @ (In1 or In2 or C) begin
    if (C) out <= In1;
    else if (C ^ In2)
      out <= In2;
    else out <= In2;
  end

endmodule
توضیحات و مدل‌سازی در مورد مسئله مذکور ۸


c_{8} \beta_{8} \quad \alpha_{8} \quad \gamma_{8}


\text{assign } w = (c) \quad ?

\text{(b) } \quad \varphi_{b} \quad \theta_{b} \quad \varphi_{b} \quad \theta_{b}

\text{زیرماشیت نشان میدارد.}

\text{Impedance}