

`timescale 1ns / 1ps

//

// Company:

// Engineer:

//

// Create Date: 27.07.2024 18:33:29

// Design Name:

// Module Name: car_park

// Project Name:

// Target Devices:

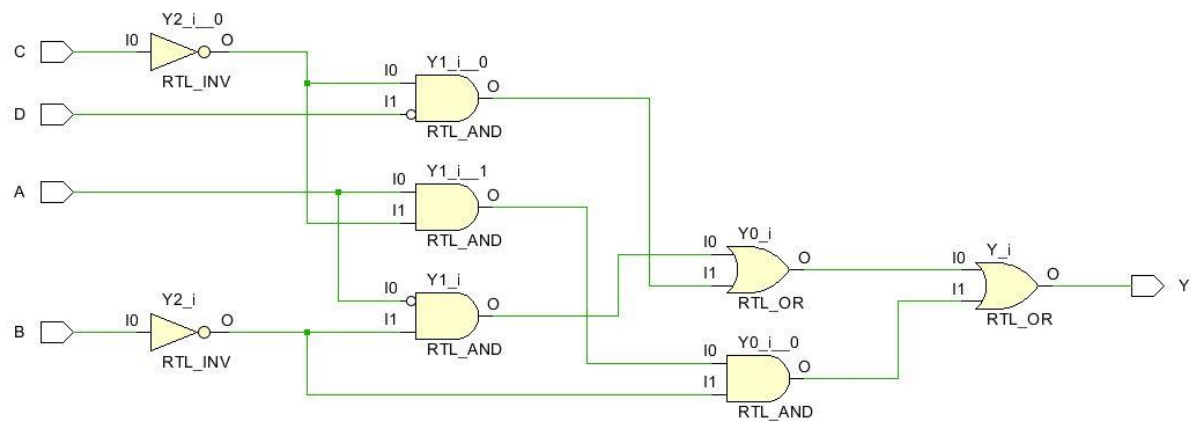
// Tool Versions:

// Description:

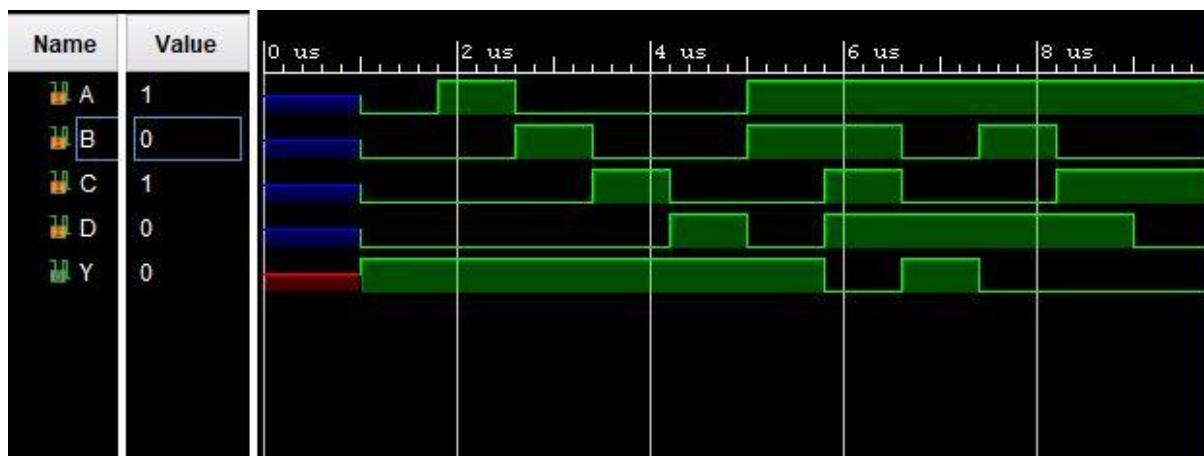
```
//  
// Dependencies:  
//  
// Revision:  
// Revision 0.01 - File Created  
// Additional Comments:  
//  
////////////////////////////////////  
//problem statement - Output Y should be 1 when there are two adjacent parking slots available in a  
4 parking slot area Occupancy of parking slots is indicated by 4 sensors A, B , C, D
```

```
module car_park(  
    input A,  
    input B,  
    input C,  
    input D,  
    output Y  
);  
assign Y = (~A)&(~B) | (~C) & (~D) | A & (~C) & (~B);  
endmodule
```

RTL



OUTPUT / Waveforms



Method 2) Using Case

```

module carpark_usincas(
input A,
input B,
input C,
input D,
output reg Y
);

always@(A or B or C or D)
begin

```

```
case({A,B,C,D})
4'b0000:begin Y=1;end
4'b1000:begin Y=1;end
4'b0100:begin Y=1;end
4'b0010:begin Y=1;end
4'b0001:begin Y=1;end
4'b1100:begin Y=1;end
4'b0011:begin Y=1;end
4'b1001:begin Y=1;end
endcase
case({A,B,C,D})
4'b0110:begin Y=0;end
4'b0101:begin Y=0;end
4'b1010:begin Y=0;end
4'b1111:begin Y=0;end
endcase
end
endmodule
```

RTL

