[Lemmings2](https://hdlbits.01xz.net/wiki/Lemmings2)

|  |
| --- |
| module top\_module(  input clk,  input areset, // Freshly brainwashed Lemmings walk left.  input bump\_left,  input bump\_right,  input ground,  output walk\_left,  output walk\_right,  output aaah );    parameter LEFT = 0, RIGHT = 1, LEFT\_aah = 2, RIGHT\_aah = 3;  reg [2:0] state, next\_state;   always @(posedge clk or posedge areset) begin  if (areset) begin  state <= LEFT;  end  else begin  state <= next\_state;  end  end   always @(\*) begin  case (state)  LEFT: begin  if (ground) begin  next\_state <= bump\_left ? RIGHT : LEFT;  end  else begin  next\_state <= LEFT\_aah;  end  end  RIGHT: begin  if (ground) begin  next\_state <= bump\_right ? LEFT : RIGHT;  end  else begin  next\_state <= RIGHT\_aah;  end  end  LEFT\_aah: begin  if (ground) begin  next\_state <= LEFT;  end  else begin  next\_state <= LEFT\_aah;  end  end  RIGHT\_aah: begin  if (ground) begin  next\_state <= RIGHT;  end  else begin  next\_state <= RIGHT\_aah;  end  end  endcase  end   assign walk\_left = (state == LEFT);  assign walk\_right = (state == RIGHT);  assign aaah = ((state == LEFT\_aah) || (state == RIGHT\_aah));  endmodule |