[Lemmings3](https://hdlbits.01xz.net/wiki/Lemmings3)

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| module top\_module(  input clk,  input areset, // Freshly brainwashed Lemmings walk left.  input bump\_left,  input bump\_right,  input ground,  input dig,  output walk\_left,  output walk\_right,  output aaah,  output digging );   parameter w\_left=3'b001, w\_right=3'b010, dig\_left=3'b011, dig\_right=3'b100, fall\_left=3'b101, fall\_right=3'b110;  reg [2:0] state, next\_state;  always@(posedge clk or posedge areset)  begin  if (areset)  state<=w\_left;  else  state<=next\_state;  end  always@(\*)  begin  case (state)  w\_left: begin  if(!ground)  next\_state<=fall\_left;  else if (dig)  next\_state<=dig\_left;  else if (bump\_left)  next\_state<=w\_right;  else  next\_state<=state;  end  w\_right: begin  if(!ground)  next\_state<=fall\_right;  else if (dig)  next\_state<=dig\_right;  else if (bump\_right)  next\_state<=w\_left;  else  next\_state<=state;  end  dig\_left: begin  if(!ground)  next\_state<=fall\_left;  else next\_state<=state;  end  dig\_right: begin  if(!ground)  next\_state<=fall\_right;  else next\_state<=state;  end  fall\_left: begin  if(ground)  next\_state<=w\_left;  else next\_state<=state;    end  fall\_right: begin  if(ground)  next\_state<=w\_right;  else next\_state<=state;    end  default: next\_state<=state;  endcase  end      always@(\*)  begin  if(state==fall\_left|state==fall\_right) begin digging<=0; walk\_left<=0; walk\_right<=0; aaah<=1; end  else if (state==dig\_left|state==dig\_right) begin digging<=1; walk\_left<=0; walk\_right<=0; aaah<=0; end  else if (state==w\_left) begin digging<=0; walk\_left<=1; walk\_right<=0; aaah<=0; end  else if (state==w\_right) begin digging<=0; walk\_left<=0; walk\_right<=1; aaah<=0; end  else begin digging<=0; walk\_left<=0; walk\_right<=0; aaah<=0; end  end   endmodule |