

```
module Moore_2procedures (
  output [1:0] y_out; ✓
  input x_in, clock, reset
);
```

5y +

```
  reg [1:0] state, next_state;
```

```
  parameter s0 = 2'b00, s1 = 2'b01, s2 = 2'b10, s3 = 2'b11;
```

```
  always @ (posedge clock, negedge reset)
```

```
    if (~reset) state <= s0;
```

```
    else state <= next_state;
```

```
  always @ (x_in, state)
```

```
    case (state)
```

```
      s0: if (~x_in) next_state = s1; else next_state = s0;
```

```
      s1: if (~x_in) next_state = s3; else next_state = s2;
```

```
      s2: if (~x_in) next_state = s3; else next_state = s2;
```

```
      s3: if (~x_in) next_state = s0; else next_state = s3;
```

```
    endcase
```

```
  assign y_out = state;
```

```
endmodule
```