

COMPARCH MIDTERM

SPECIFICATIONS

INPUT \rightarrow Button Press

OUTPUT \rightarrow State of LED

OPERATIONAL MODES

a) OFF

- LED is turned off

b) ON

- LED is turned on

c) DIM

- LED operates at 75% brightness at $F = 1\text{kHz}$

d) BLINKING

- LED is blinking at $f_{\text{freq}} = 8\text{Hz}$

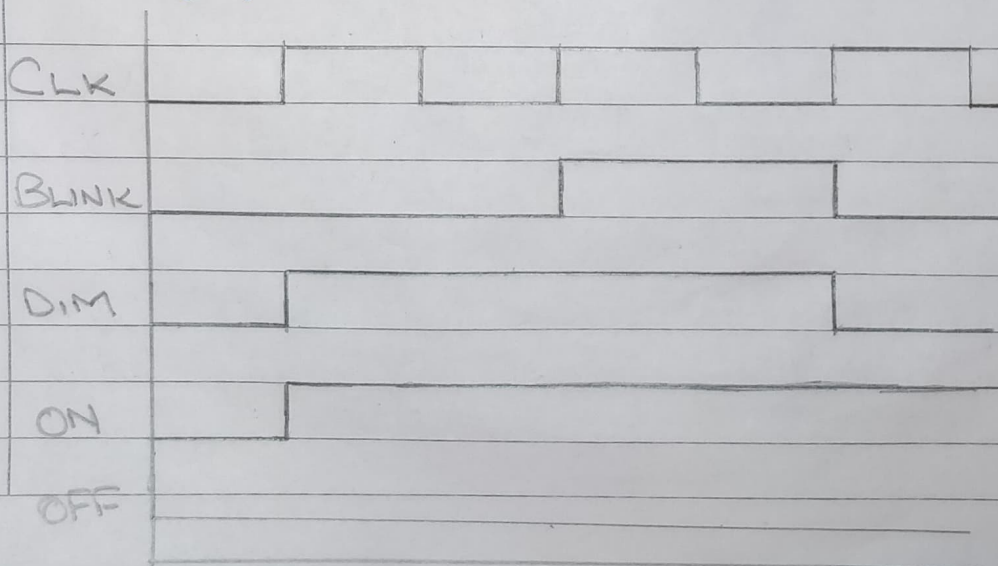
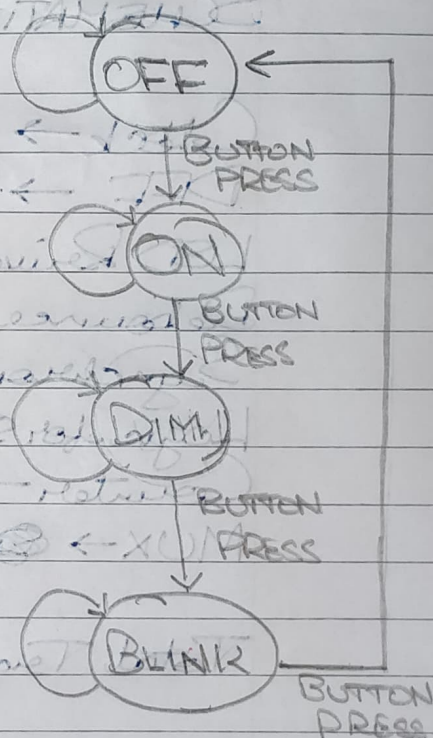
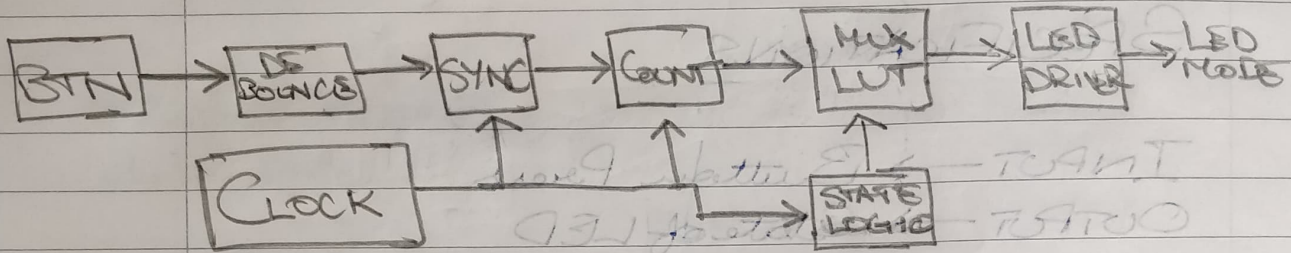


Diagram
Not to
Scale

Block Diagram



SCHEMATIC AREA

Clock $\rightarrow 10$ DFF $\rightarrow 26$ LED Driver $\rightarrow 172$ Debounce $\rightarrow 200$ Synchronizer $\rightarrow 52$ Logic for States $\rightarrow 13 \times \text{DFF} \rightarrow 338 + 6 = 344$ Counter $\rightarrow 2 \times \text{DFF} \rightarrow 52$ MUX $\rightarrow 54 \times 1 = 54$ Total Transistor $\rightarrow 910$

to build in 1310
548 = pos.

map
at 548
scale

SCHEMATIC

