DD1 Project 2 Block Diagram

Start → **Pushbutton detector** → Comb logic

LED

RST

input A —8—→ **8-bit sequential multiplier**
input B —8—→
CLK →

Product —16—→ **Binary to BCD converter**
isNegative
IsDone → Start
CLK

RST

IsDone
Digits 4-0

BTN_R → **Pushbutton detector**
BTN_L → **Pushbutton detector**

start
isNegative
CLK

Digit Shifter → The 4 digits to display → **SSD Render**

7 segment letters A-G
7 segment enable

7 segment display
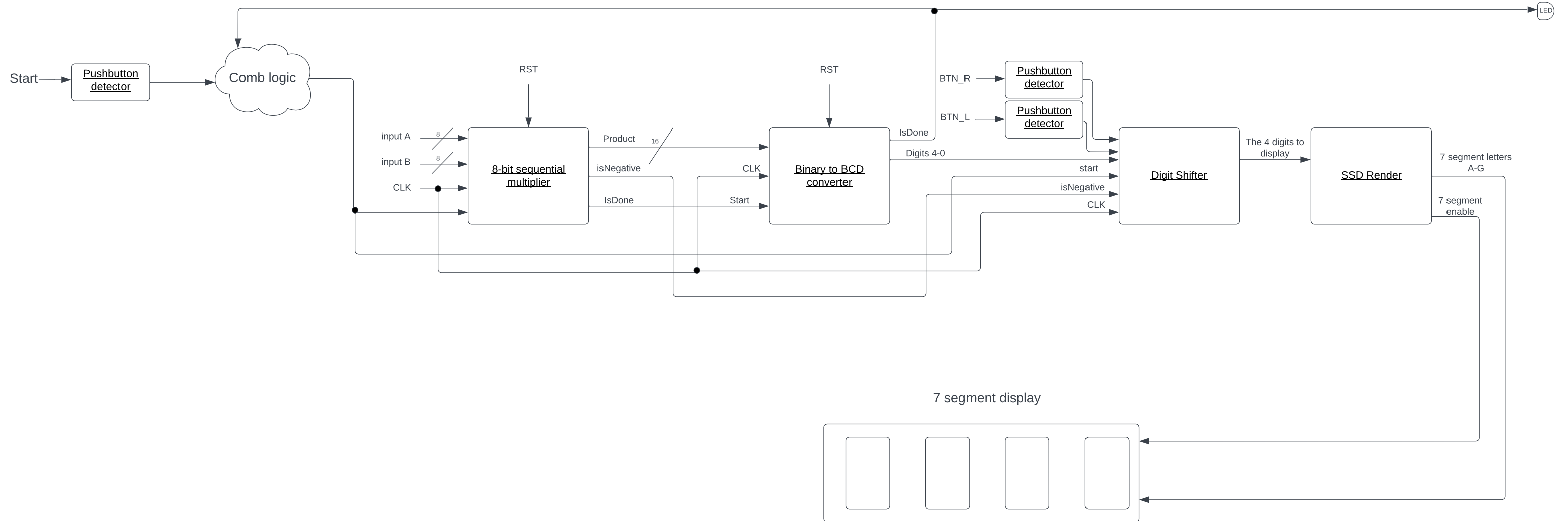
8-bit Sequential Multiplier Block Diagram

RST

Input A   8

Input B   8

CLK

Start

Multiplier Control Unit

IsDone

SA   2

SB   2

SC   2

SNeg

IsDone

Multiplier DataPath

IsNegative

16   result product
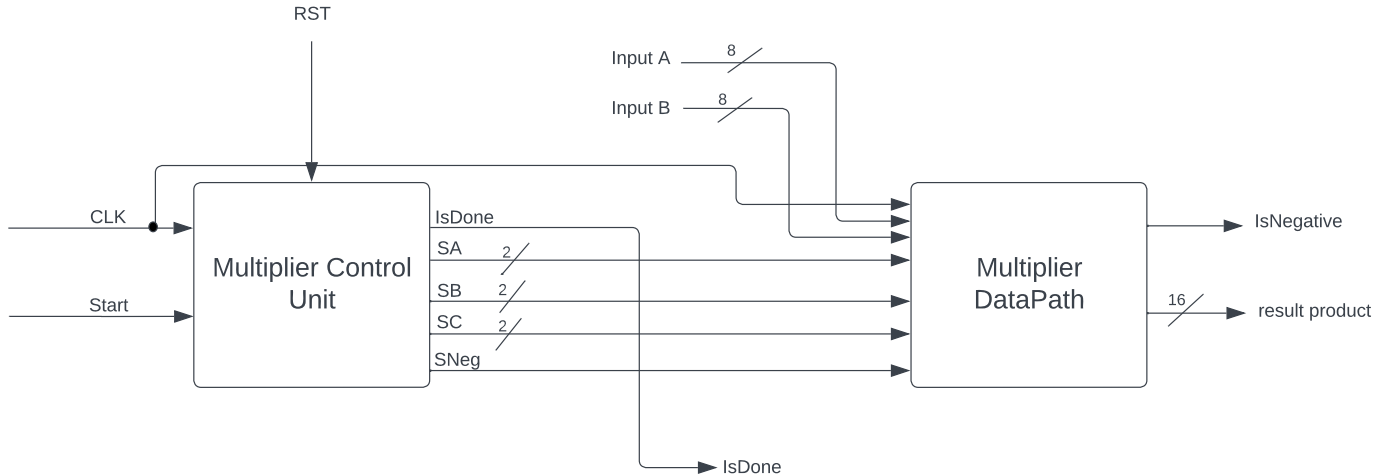
Binary to BCD Converter (Double Dabble)

RST

LED = IsDone

IsGreaterThan 4

Start = IsDone of Multiplier

CLK

BCD control unit

IsDone

IsLoad

IsShift

IsInit

BCD DataPath

Digits 0-4

16

output from multiplier