

9312617

KWAKU EGYIR BINEY (ELECTRICAL ENGINEERING)

DEDICATED MICROPROCESSOR ASSIGNMENT

Algorithm:

largest=0

second=0

INPUT n

WHILE (n !=0 {

 if (n> largest) then

 second = largest

 largest = n

 else if (n>second) then

 second = n

 END IF

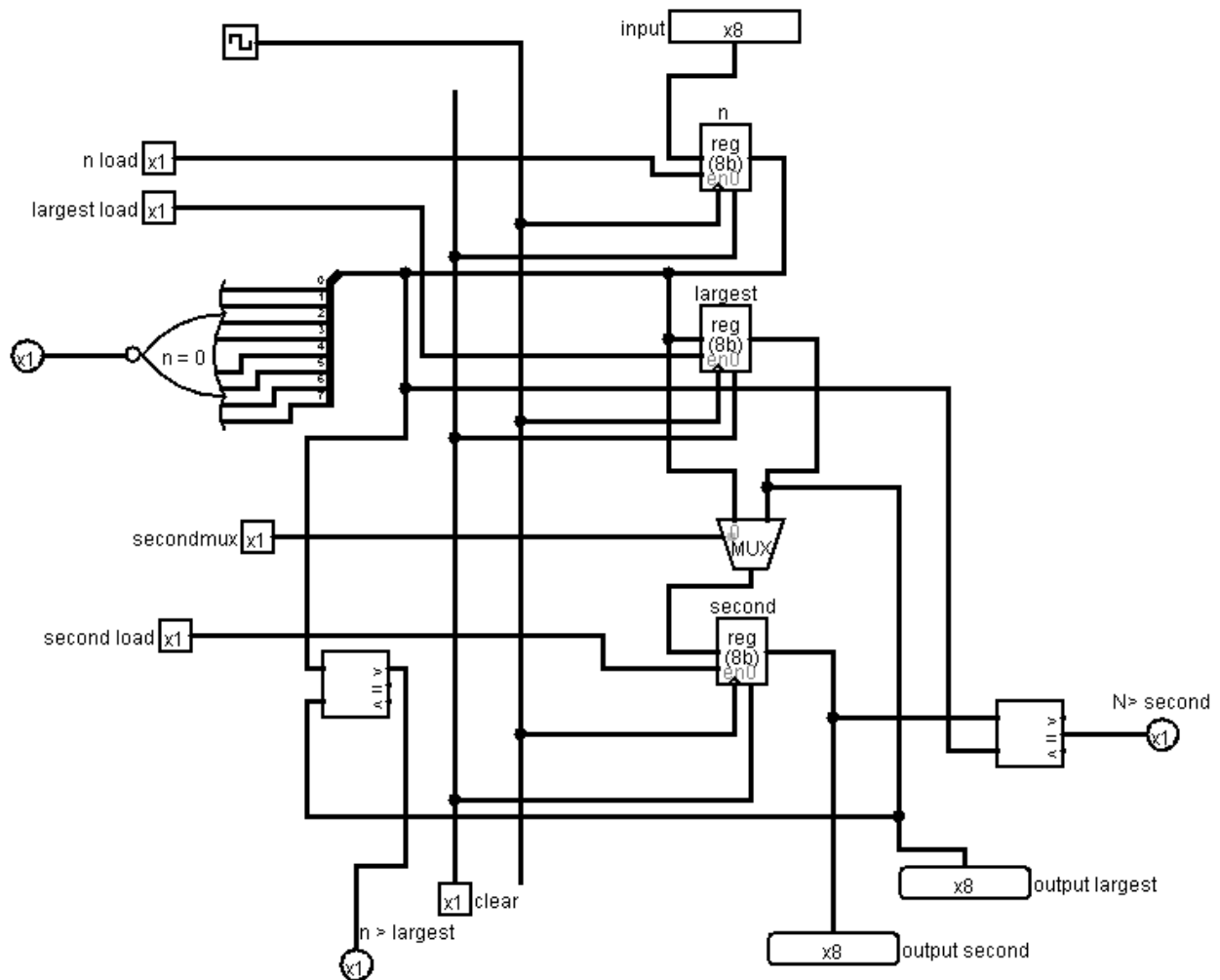
 OUTPUT Largest

 OUTPUT Second

 INPUT n

}

DATAPATH:



N load= $Q_2'Q_1'Q_0'$

LargestLoad=SecondMUX= Q_2

Second Load = Q_1

Current State $Q_2Q_1Q_0$	Next State (Implementation) $Q_2next, Q_1next, Q_0next (D_2 D_1 D_0)$															
	Enter, (n= 0), (n> Largest), (n> Second)															
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
000	000	000	000	000	000	000	000	000	001	001	001	001	001	001	001	001
001	000	010	011	011	100	100	100	100	001	010	011	011	100	100	100	100
010	000	000	000	000	000	000	000	000	010	010	010	010	010	010	010	010
011	000	000	000	000	000	000	000	000	011	011	011	011	011	011	011	011
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

$$D_2 = Q_1'Q_0(n=0) + Q_2$$

$$D_1 = Q_1'Q_0(n=0)'(n>largest) + Q_1'Q_0(n=0)'(n>second) + Q_1enter'$$

$$D_0 = Q_2'Q_1'Q_0'Enter + Q_1Q_0Enter + Q_1'Q_0(n>largest)'(n>second) + Q_1'Q_0Enter(n=0)'(n>second)'$$

CONTROL UNIT

