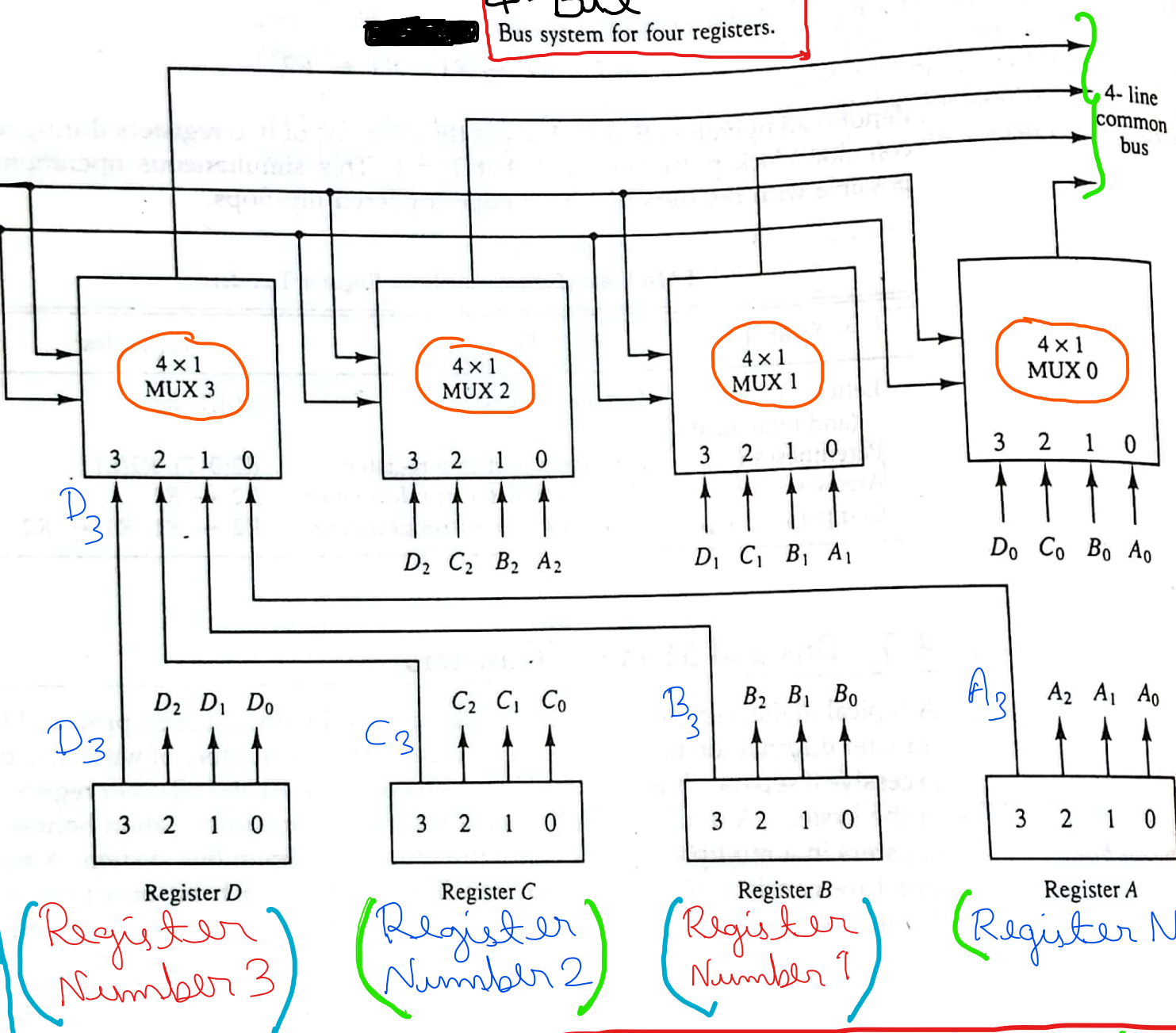


4-Bit Bus system for four registers.

Selection Line S_1
 S_0

S_0 and S_1 are common selection line for all MUX

Data of Register number 3 will be applied at pin number 3 of various mux



Function Table for 4-Bit Bus System for four Register

S_1	S_0	Register Selected
0	0	A
0	1	B
1	0	C
1	1	D

4-Bit Bus System for Four Register

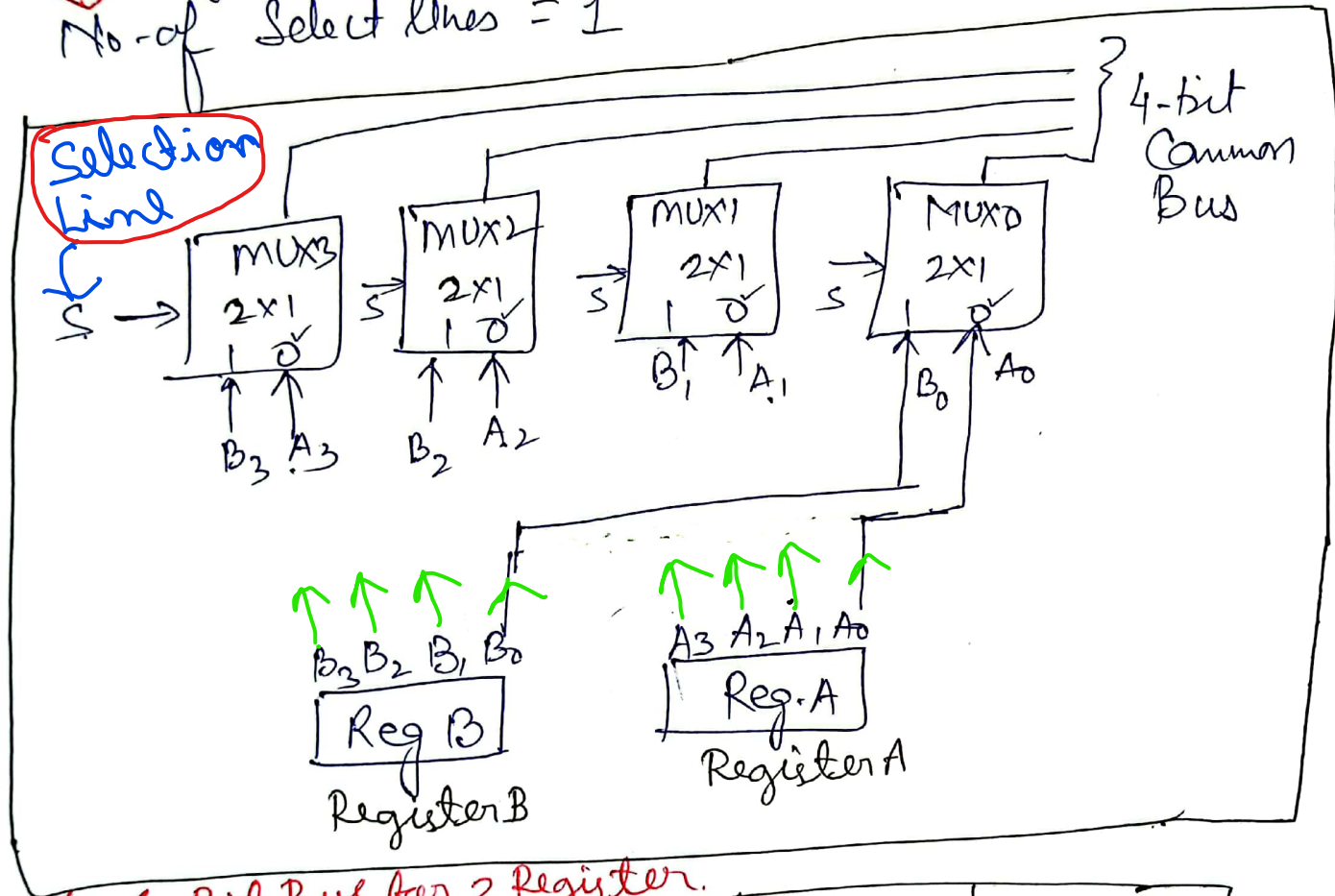
Here, D_0, D_1, D_2 and D_3 are 4 bit data stored in Register D

Q Design a common bus system for a digital system having 2 registers, each of 4-bit

Solution

No. of Mux = 4
 Size of MUX = 2×1
 No. of Select lines = 1

Number \rightarrow size
 Size \rightarrow Number



\hookrightarrow 4-Bit Bus for 2 Register.

S	Reg. Select
0	Reg. A
1	Reg. B

Selection Line S	Register Selected
0	Register A
1	Register B

Function table of 4 bit bus for 2 Register

Memory Transfer

Memory Transfer describes about transfer of information either from memory M to another register (known as data register DR) or from data register DR to memory M .

FEW IMPORTANT POINTS ABOUT MEMORY TRANSFER

(*) Transfer of information from memory M to outside environment (such as data register DR) is called a read operation.

(*) Transfer of information to be stored into the memory M is called write information.

~~Example~~

(*) During memory transfer, a particular memory location among the many available is selected by the memory address available in address register AR .



(*) Read operation is represented as given below

$$\text{Read : } DR \leftarrow M[AR]$$

This statement describes transfer of information into data register DR from a particular location of memory M . That particular location (address) of memory M is given in address register AR .

(*) Write operation is represented as given below.

$$\text{Write : } M[AR] \leftarrow R1$$

This statement describes about transfer of information into memory M from some register $R1$. The location (address) where data will be stored (written) into memory is given in address register AR .