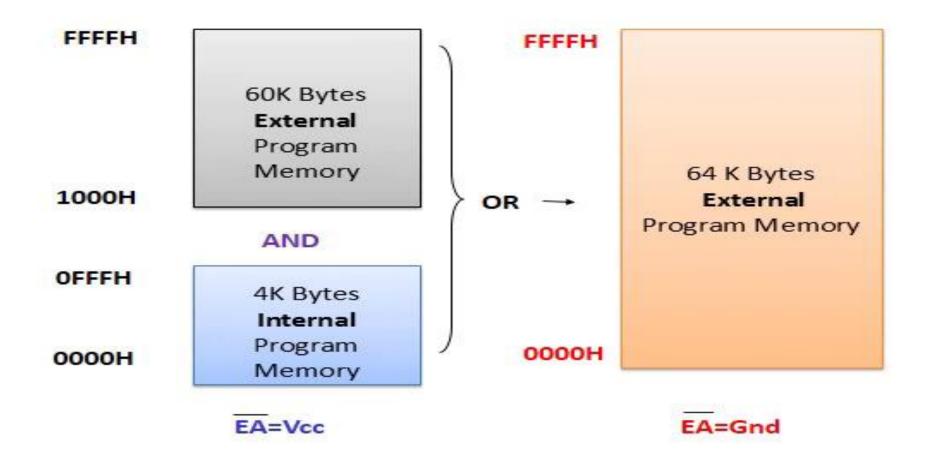
8051 - Memory Interfacing

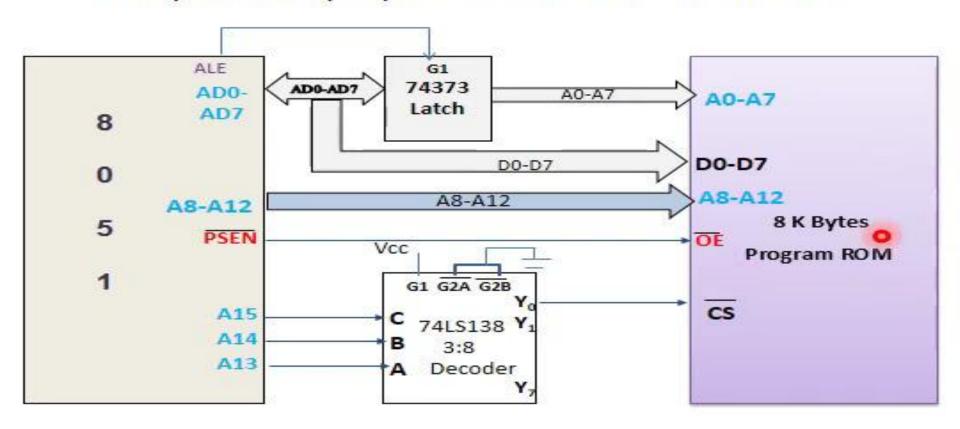
8051 Program Memory



Interfacing of External program Memory

Ex-1 Interface 8 KBytes of Program ROM to 8051 microcontroller.

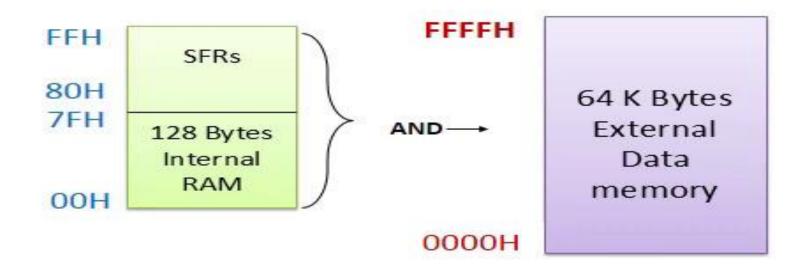
Sol: 8K Bytes memory requires 13 address lines. i.e. A0 - A12



Memory Map

	A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	А3	A2	A1	A0	Address
Starting Address	0	o	o	o	0	o	0	0	0	o	o	0	o	0	0	0	0000Н
2 nd Location	0	o	o	0	o	0	0	0	0	0	o	0	0	0	0	1	0001Н
			027 - 2						0	75 - 10				7			1128 929 939
Ending Address	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1FFFFH

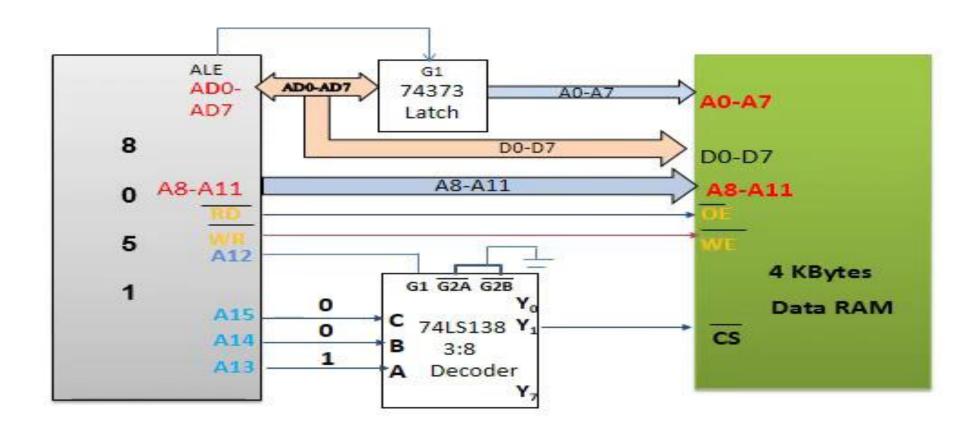
8051 Data Memory



Interfacing of External Data Memory

Ex. Interface 4 KBytes of external RAM to 8051 microcontroller.

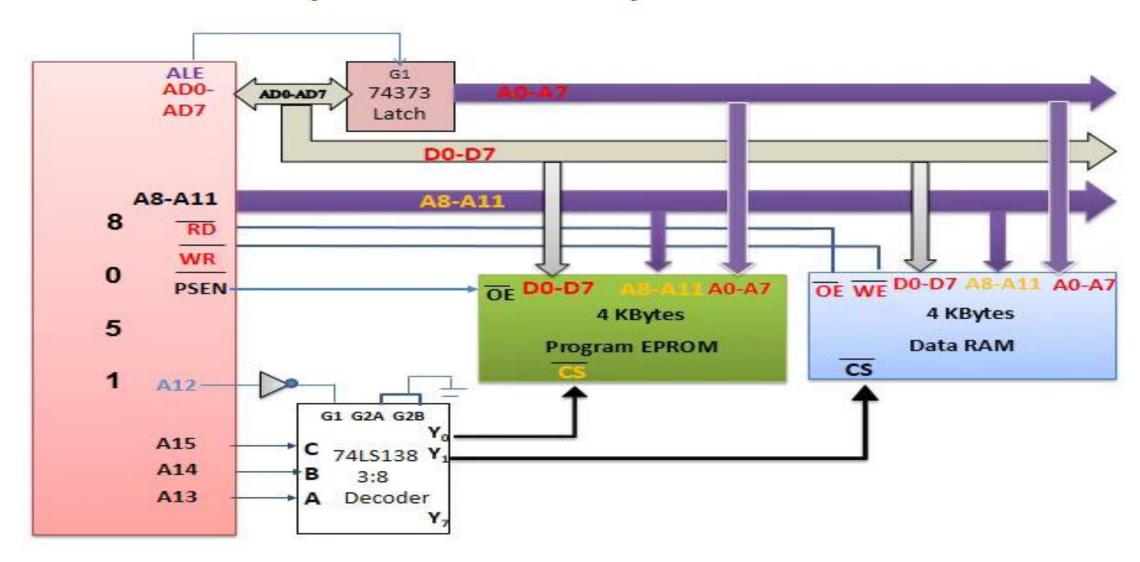
Sol :4 KBytes memory requires 12 address lines i.e. A0 - A11.



Memory Map

	A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	А3	A2	A1	A0	Address
Starting Address	0	o	1	1	0	0	0	0	0	o	o	o	o	o	0	0	3000Н
2 nd Location	0	0	1	1	o	0	0	0	0	0	o	o	0	0	0	1	3001H
																	77.04
Ending Address	0	o	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3FFFH

Interface 4K byte EPROM and 4K byte RAM to 8051



Memory Map - Program ROM

	A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	А3	A2	A1	A0	Address
Starting Address	0	0	0	0	0	0	0	0	0	0	0	0	0	o	0	0	0000Н
2 nd Location	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0001H
10 -																	
Ending Address	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	OFFFH

Memory Map - Data RAM

	A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	АЗ	A2	A1	AO	Address
Starting Address	0	0	1	0	0	o	0	o	0	o	0	0	o	0	0	0	2000H
2 nd Location	0	0	1	0	0	0	0	0	0	0	0	0	0	0	o	1	2001H
2) 4 :3		da s															82
Ending Address	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	2FFFH

Sr. No.	Absolute Decoding	Linear Decoding
1	It is also called as full decoding as all the address lines are used for decoding .	It is also called as partial decoding as all address lines are not used for decoding .
2	It is used in large memory systems.	It is used in small systems .
3	Hardware required for decoding logic is more.	Hardware used for decoding logic is less.
4	Multiple addresses are not generated.	Multiple addresses are generated .