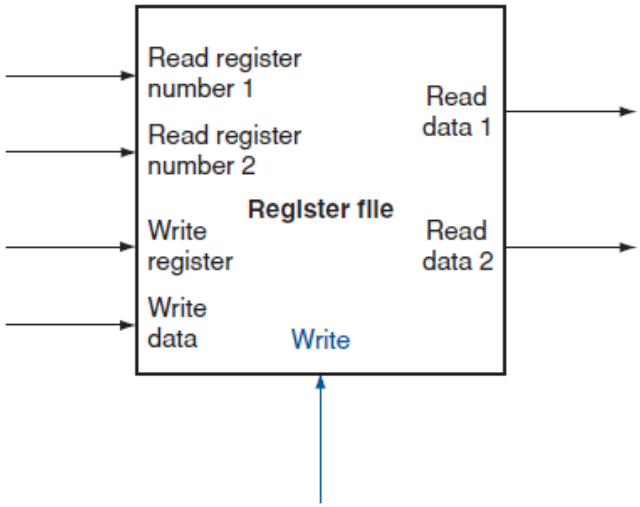
The Register File

A set of registers each of which can be specified by a number

MIPS register file has two read ports and one write port

D flip-flops are used to construct the registers

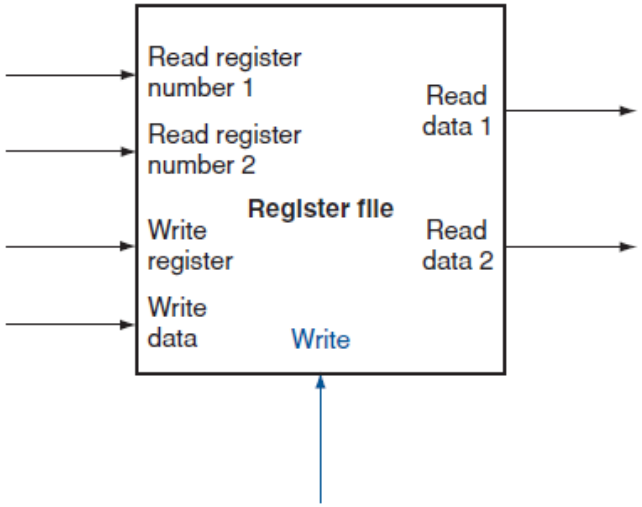


Write control line causes write data to be placed into write register

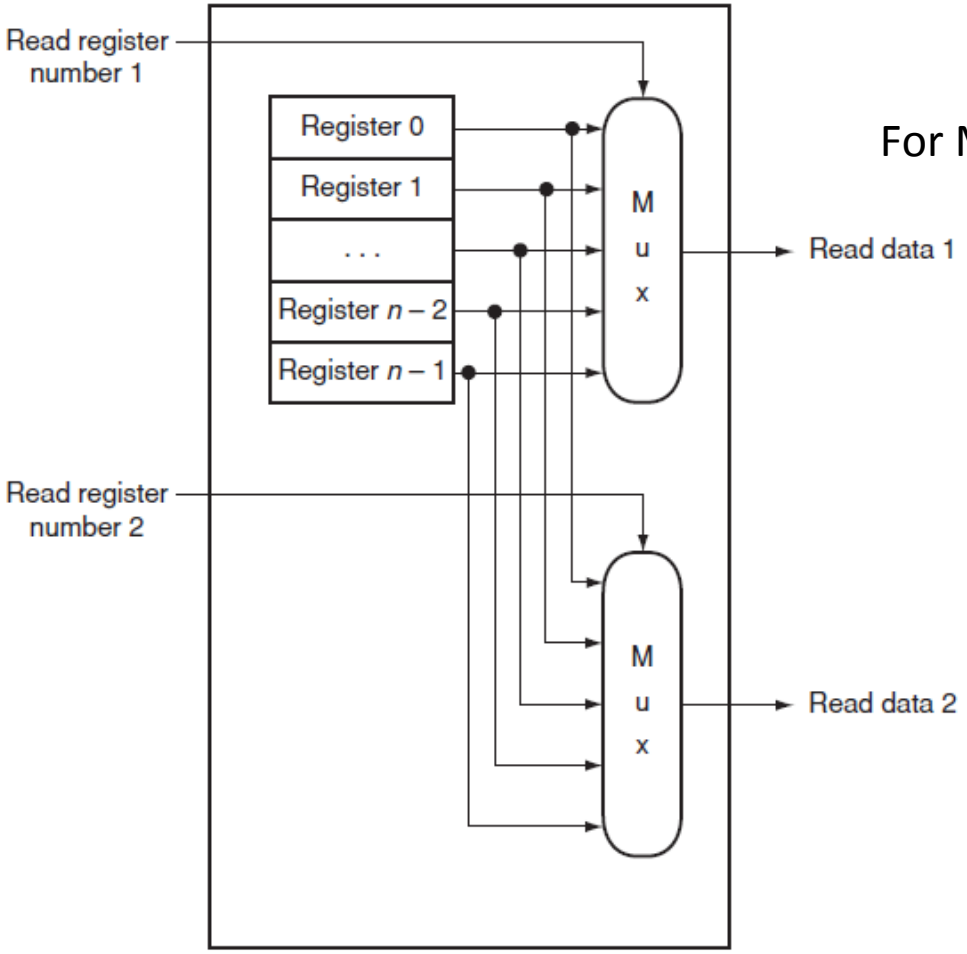
The Register File

5-bit read reg. number 1 identifies the rs register
5-bit read reg. number 2 identifies the rt register
5-bit write reg. identifies register to write (rd or rt)

Read data 1, read data 2 and write data are each 32-bit values



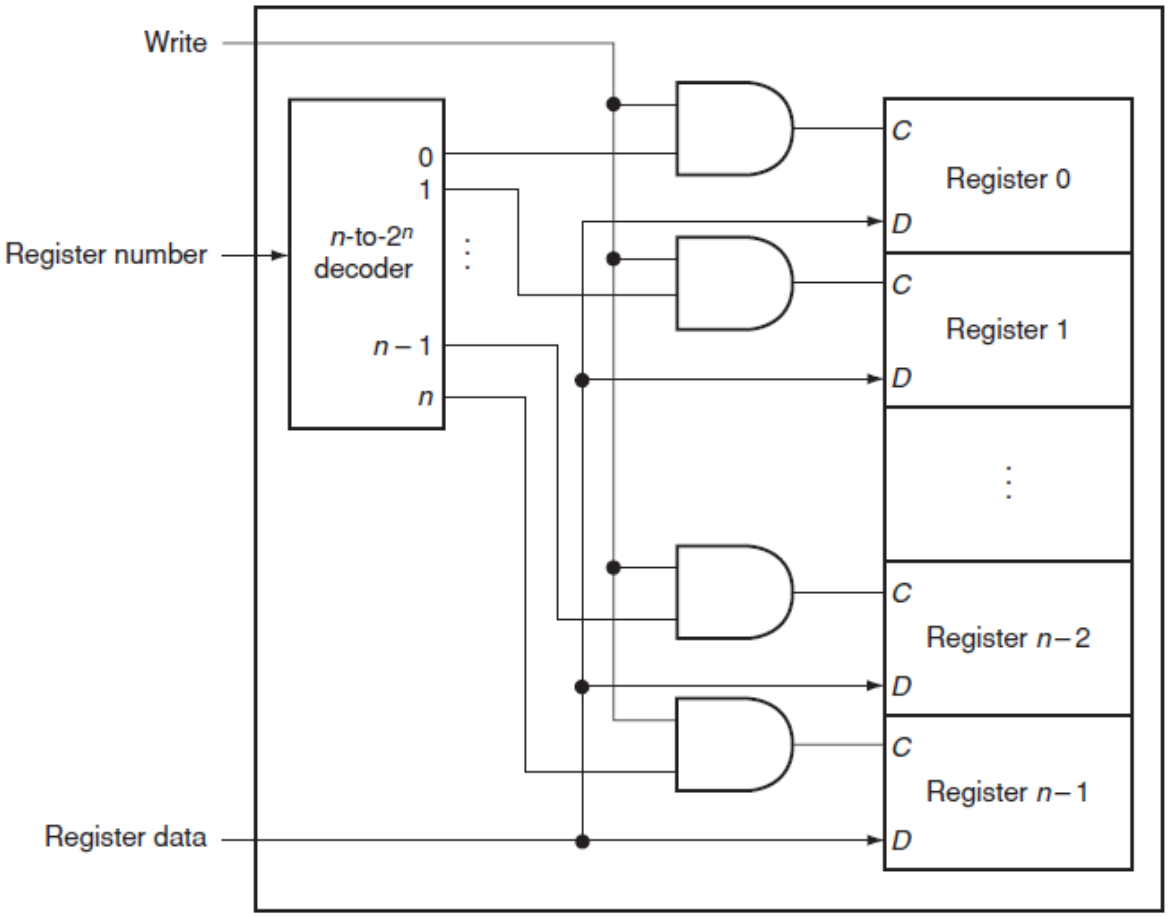
The Register File



For MIPS, n = 32

Register read number controls which input the Mux allows to pass through

The Register File



For MIPS, n = 32

Writes to register 0 have no effect

5-to-32 decoder selects register to be written

Data input supplies value to write into selected register