MIPS Addressing Modes
Accessing Data in Memory (1)

MIPS is a load-store architecture

- Only load and store instructions access memory.
- Computation instructions operate only on values in registers.

The bare machine provides only one memory-addressing mode: **c(rx)**

- Uses the sum of the immediate c and register rx as the address.

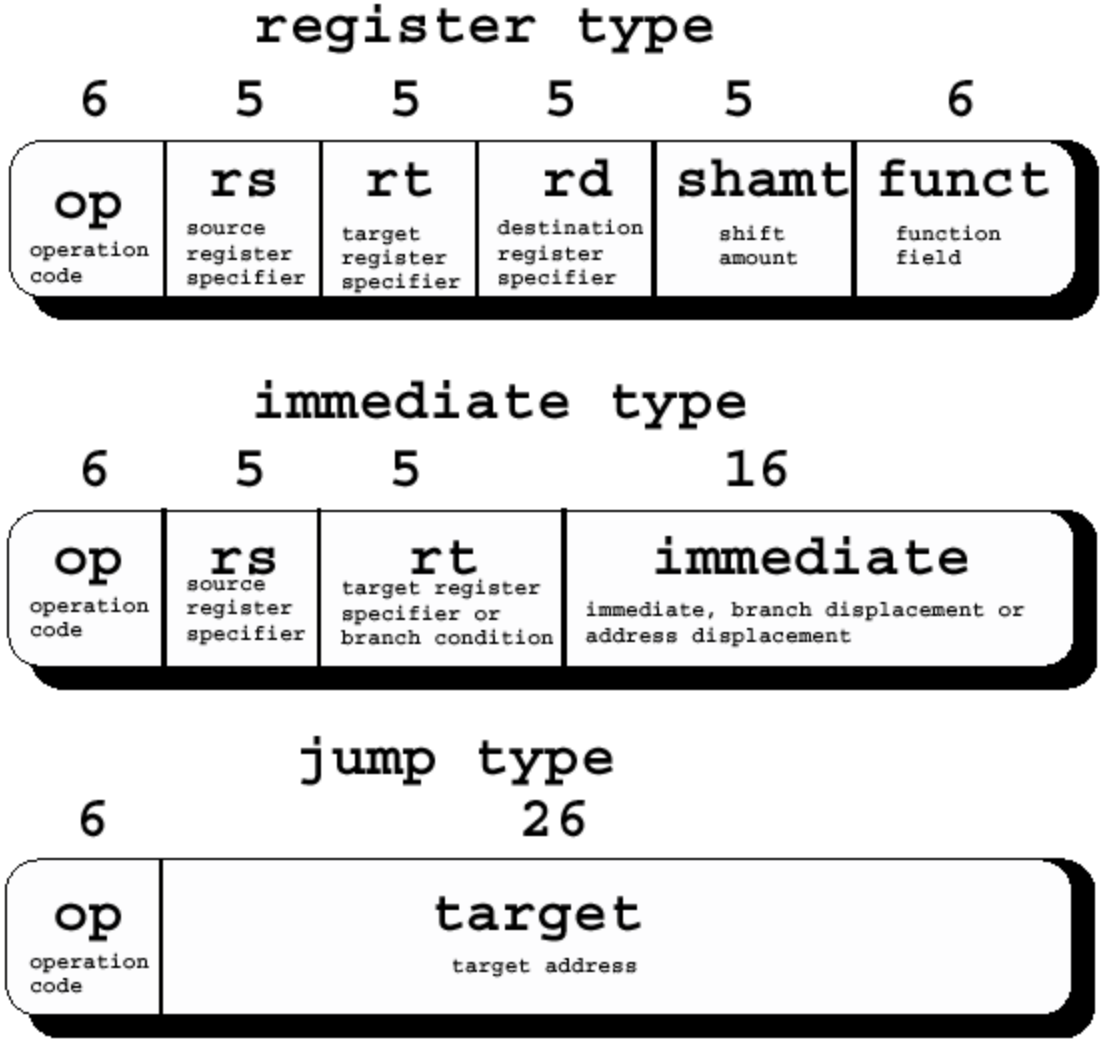
MIPS Addressing Modes Accessing Data in Memory (2)

The **virtual machine** provides the following addressing modes for load and store instructions:

Format	Address computation
(register)	contents of register
imm	immediate
imm (register)	immediate + contents of register
label	address of label
label ± imm	address of label + or – immediate
label ± imm (register)	address of label + or – (immediate + contents of register)

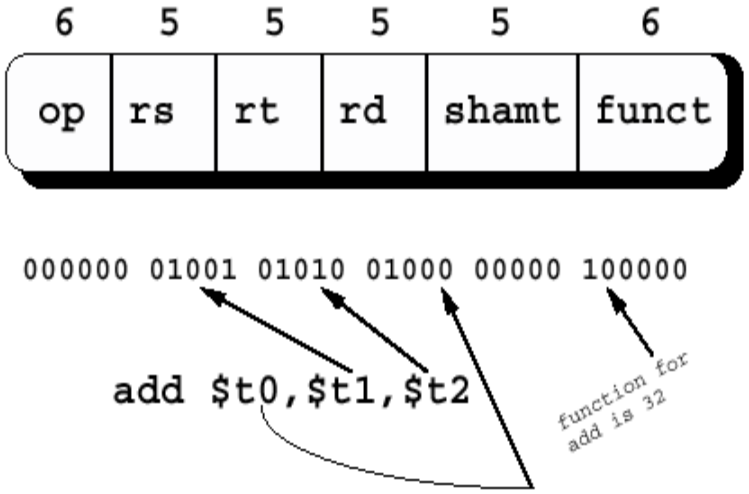
This virtual computer appears to have non delayed branches and loads and a richer instruction set than the actual hardware

MIPS Instruction Format

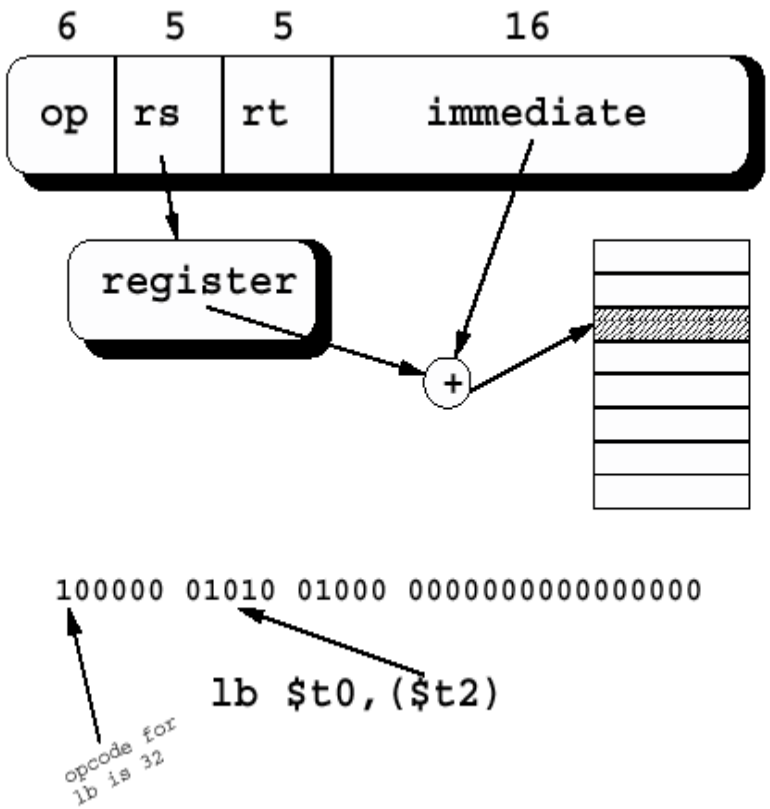


MIPS Addressing Modes
Accessing Instructions and Data (1)

Register Addressing

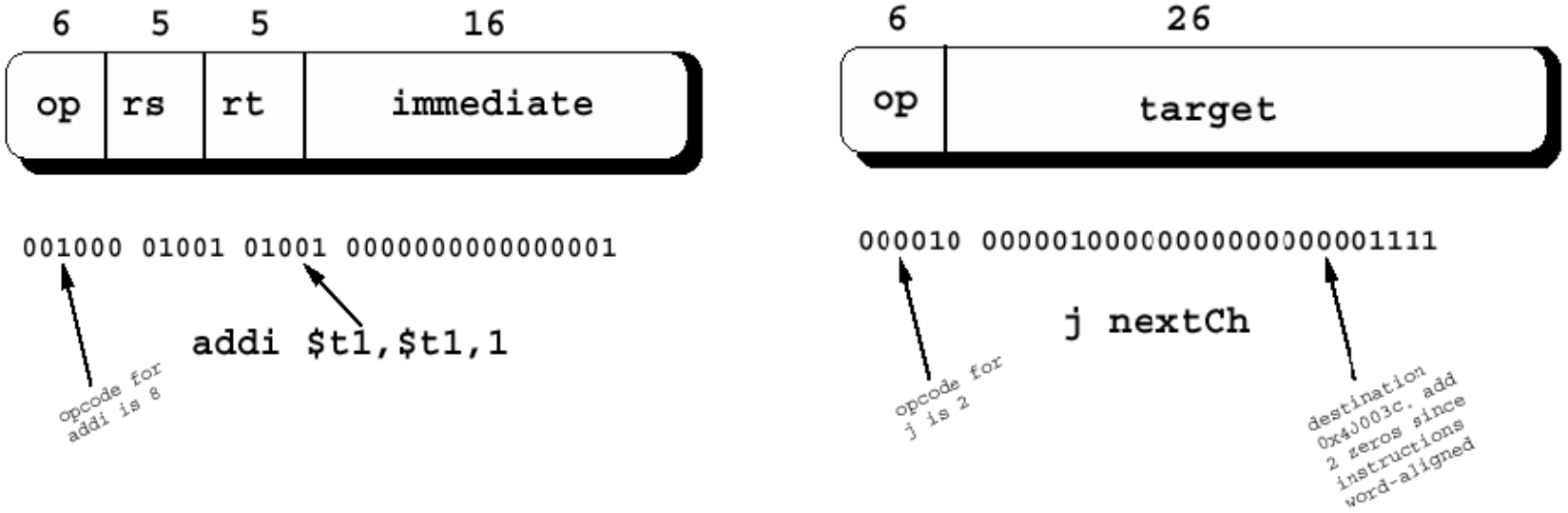


Base Addressing



MIPS Addressing Modes
Accessing Instructions and Data (2)

Immediate Addressing



MIPS Addressing Modes
Accessing Instructions and Data (3)

PC-Relative Addressing