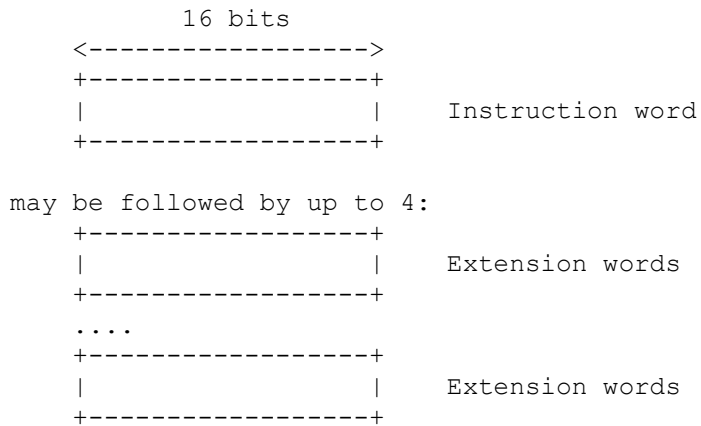
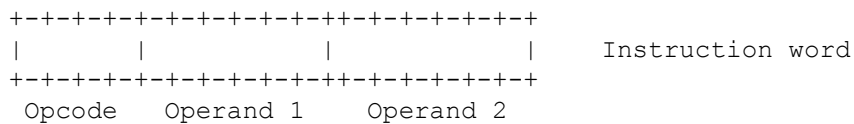

M68000 Instruction Encoding

- M68000 was a micro processor (CPU) designed by Motorola at around 1980.
- Motorola M68000 instruction format:

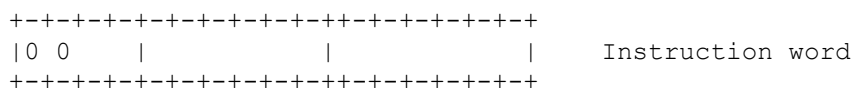


depending on the need to encode more information
 (e.g., if some operand is in memory -> extension word
 encodes the address in memory)

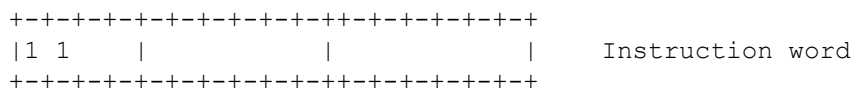
- Example: binary instruction encoding:



Move:



Add:



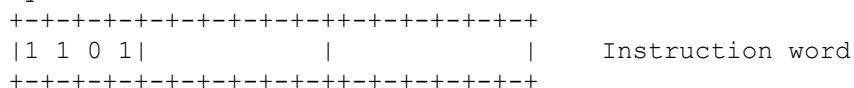
Bit 3 & 4 encodes length of operand:

```

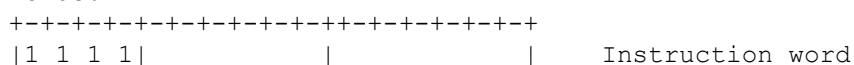
    01 = byte
    11 = word (16 bits)
    10 = long word (32 bits)
  
```

So:

Add bytes:



Add words:



+++++

Add long words:

+++++

|1 1 1 0| | | |

Instruction word

+++++