



U.N.J.U. – F.I.



INGENIERÍA INFORMÁTICA

LABORATORIO DE COMPUTADORAS

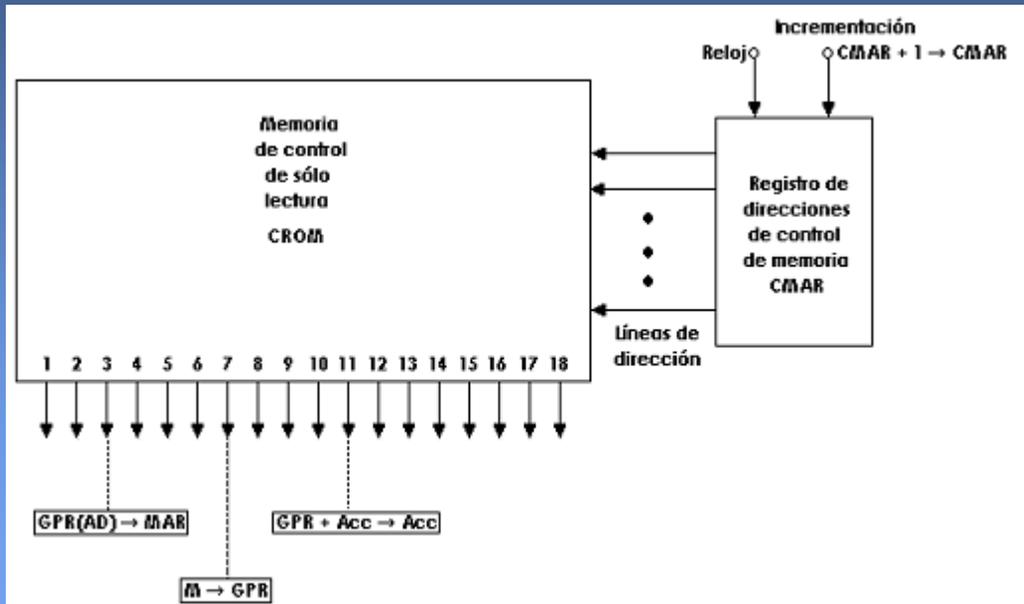
ARQUITECTURA BÁSICA DE
LAS COMPUTADORAS

TEMA:
MICROPROGRAMACIÓN

Ing. David Sánchez Rivero



Microprogramación

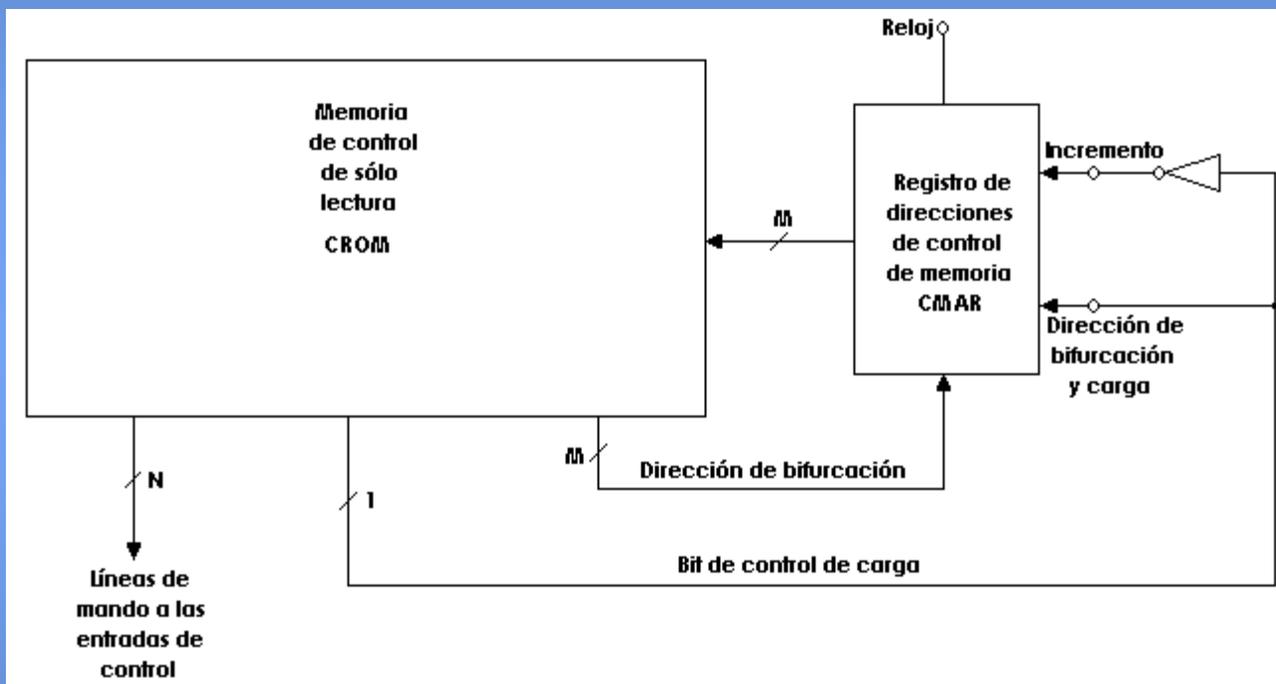


Ejemplo: ADD, dirección (Dir. Indirecto)

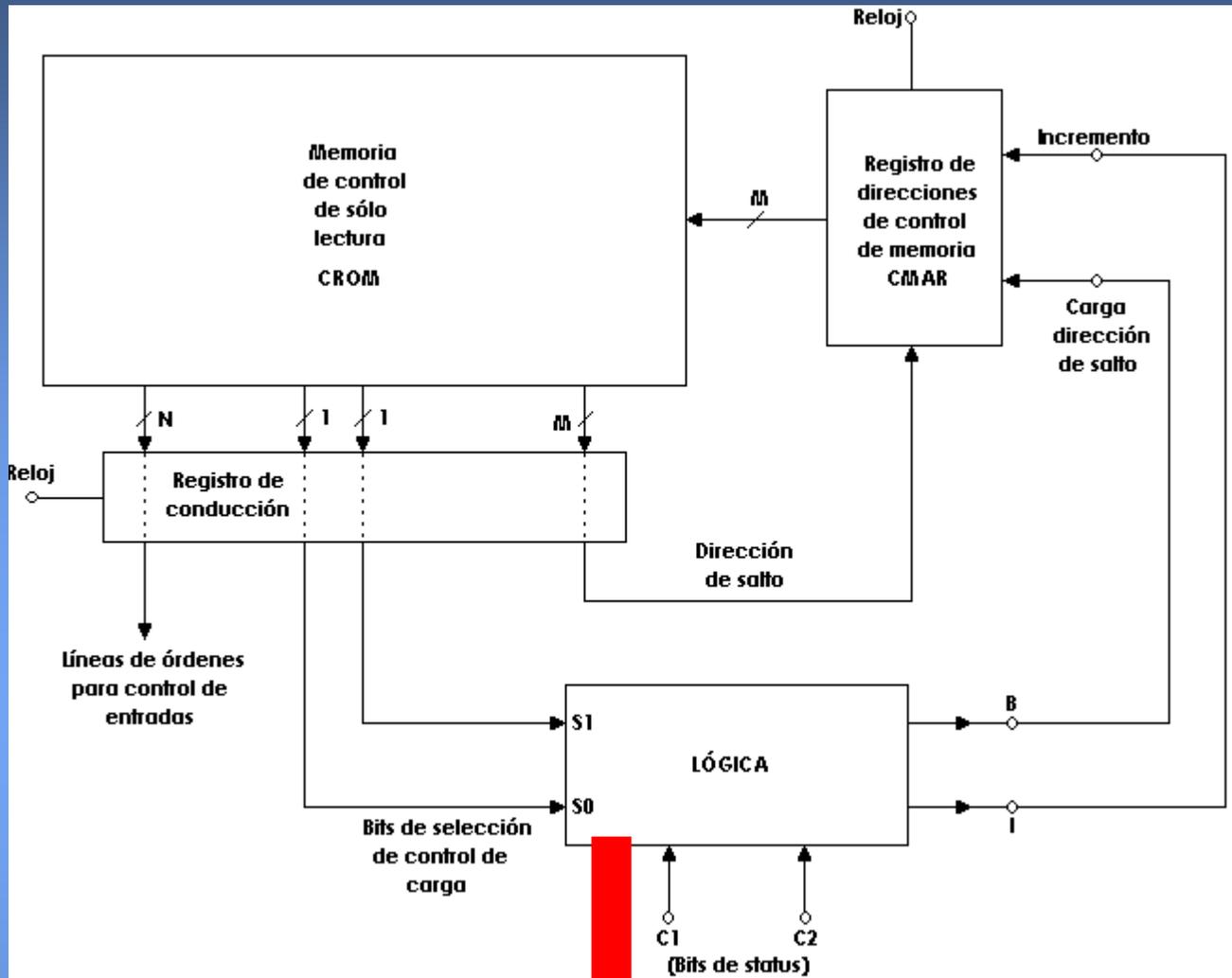
| | Número de bit | | | | | | | | | | | | | | | | | |
|---------|---------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| Palabra | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Bifurcación en Microprograma



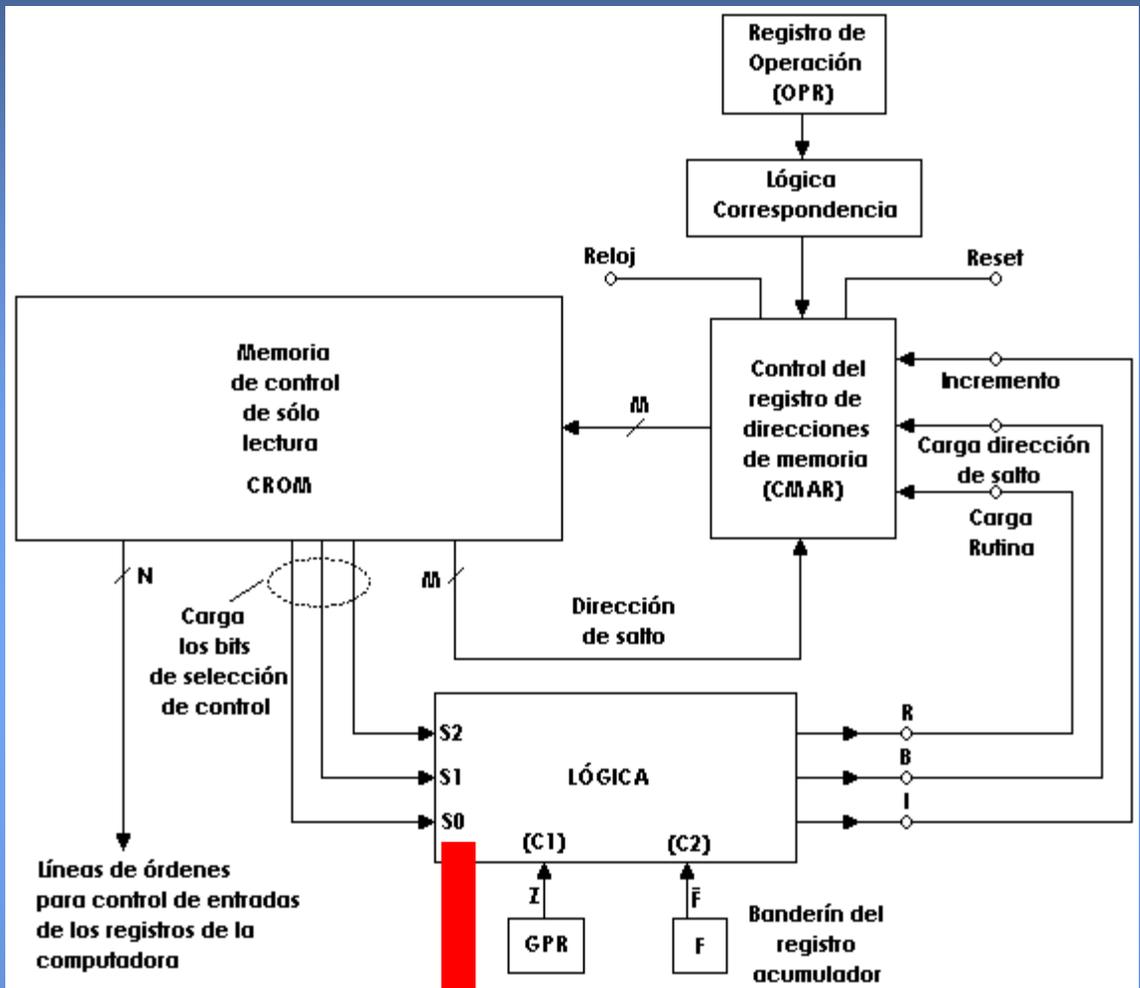
Bifurcación Condicional



| S_1 | S_0 | C_1 | C_2 | B | I | |
|-------|-------|-------|-------|---|---|---|
| 0 | 0 | X | X | 0 | 1 | Incrementa. Ignora los bits de status. |
| 0 | 1 | X | X | 1 | 0 | Bifurca. Ignora los bits de status. |
| 1 | 0 | 0 | X | 0 | 1 | Responde sólo a C_1 : Salta si $C_1=1$, Incrementa si $C_1=0$ |
| 1 | 0 | 1 | X | 1 | 0 | |
| 1 | 1 | X | 0 | 0 | 1 | Responde sólo a C_2 : Salta si $C_2=1$, Incrementa si $C_2=0$ |
| 1 | 1 | X | 1 | 1 | 0 | |



Controlador Microprogramado



| S ₂ | S ₁ | S ₀ | C ₁ | C ₂ | B | I | R | |
|----------------|----------------|----------------|----------------|----------------|---|---|---|---|
| 0 | 0 | 0 | X | X | 0 | 1 | 0 | Incrementa. Ignora los bits de status. |
| 0 | 0 | 1 | X | X | 1 | 0 | 0 | Salta. Ignora los bits de status. |
| 0 | 1 | 0 | 0 | X | 1 | 0 | 0 | Responde sólo a C ₁ : Salta si C ₁ =0, Incrementa si C ₁ =1 |
| 0 | 1 | 0 | 1 | X | 0 | 1 | 0 | |
| 0 | 1 | 1 | X | 0 | 1 | 0 | 0 | Responde sólo a C ₂ : Salta si C ₂ =0, Incrementa si C ₂ =1 |
| 0 | 1 | 1 | X | 1 | 0 | 1 | 0 | |
| 1 | X | X | X | X | 0 | 0 | 1 | Carga Rutina |

