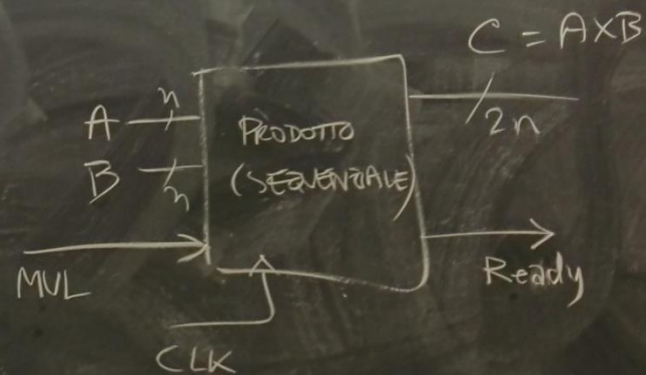
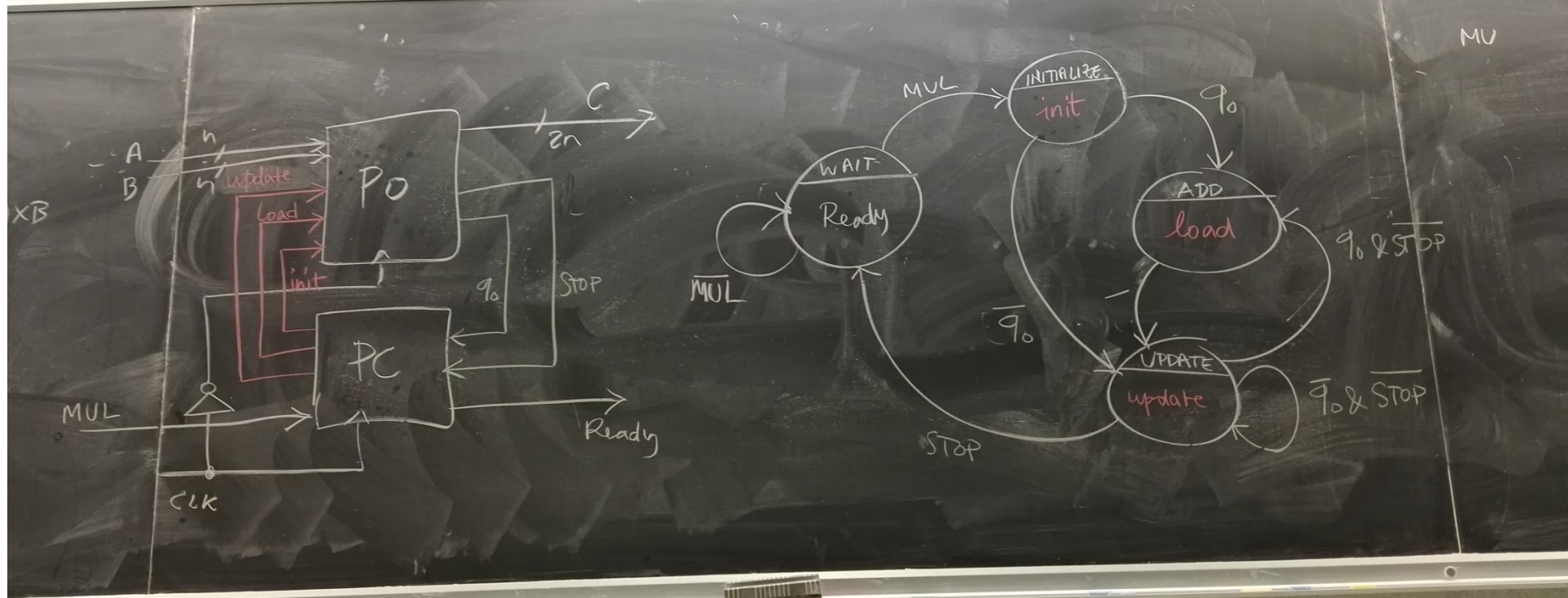


Moltiplicazione Intera

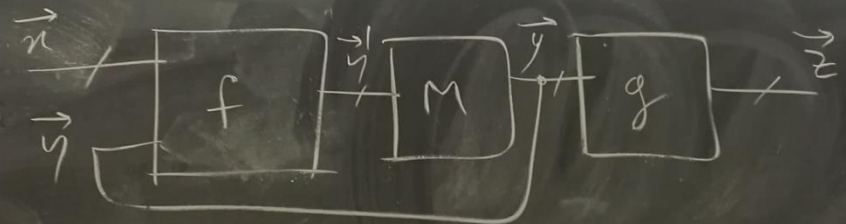
Metodologia di progetto
"Parte operativa /
parte di controllo"





q_0
 $q_0 \& \text{STOP}$
 $\overline{q_0 \& \text{STOP}}$

MU



$\vec{x} \quad \vec{y} \quad \vec{y}'$

(f)

$\vec{y} \quad \vec{z}$

(g)



STATO	CODIFICA BINARIA (Q ₁ , Q ₀)	INGRESSI CAMPIONATI NELLO STATO
WAIT	0 0	MUL
INITIALIZE	0 1	q ₀
ADD	1 0	—
UPDATE	1 1	q ₀ , Stop

q₀ & STOP

TOP

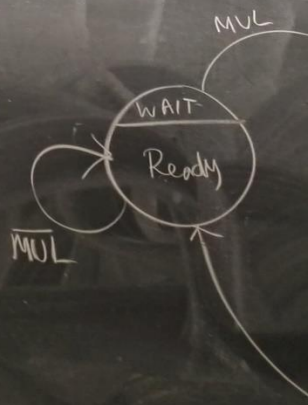
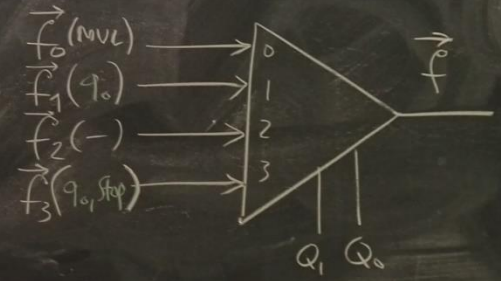
era

progetto

2/16"

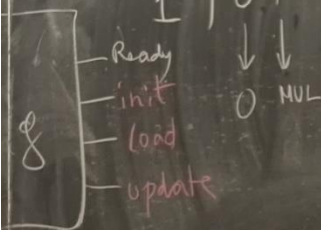
$$\vec{f} = (Q'_1, Q'_0) = f(MUL, q_0, STOP, Q_1, Q_0)$$

$$= \vec{f}_0(MUL) \Big|_{Q_1 Q_0 = 00} \cdot \overline{Q_1} \overline{Q_0} + \vec{f}_1(q_0) \Big|_{Q_1 Q_0 = 01} \cdot \overline{Q_1} Q_0 + \vec{f}_2(-) \Big|_{Q_1 Q_0 = 10} \cdot Q_1 \overline{Q_0} + \vec{f}_3(q_0, STOP) \Big|_{Q_1 Q_0 = 11} \cdot Q_1 Q_0$$



SP = WAIT (0,0)

MUL	$Q'_1 Q'_0$
0	00
1	01



SP = INITIALIZE (0,1)

q_0	Q_1	Q'_0
0	1	1
1	1	0
	↓	↓
	1	$\overline{q_0}$

SP = ADD (1,0)

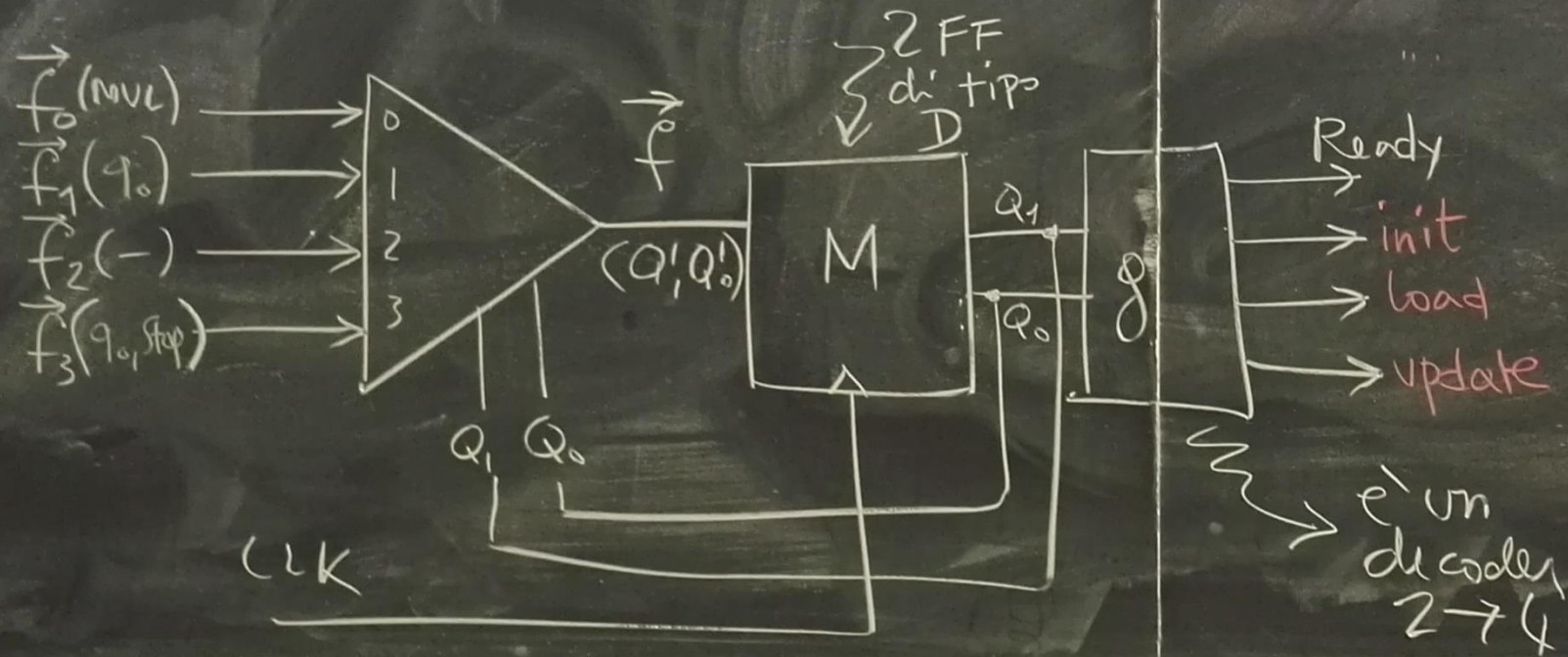
$$Q'_1 = Q'_0 = 1$$

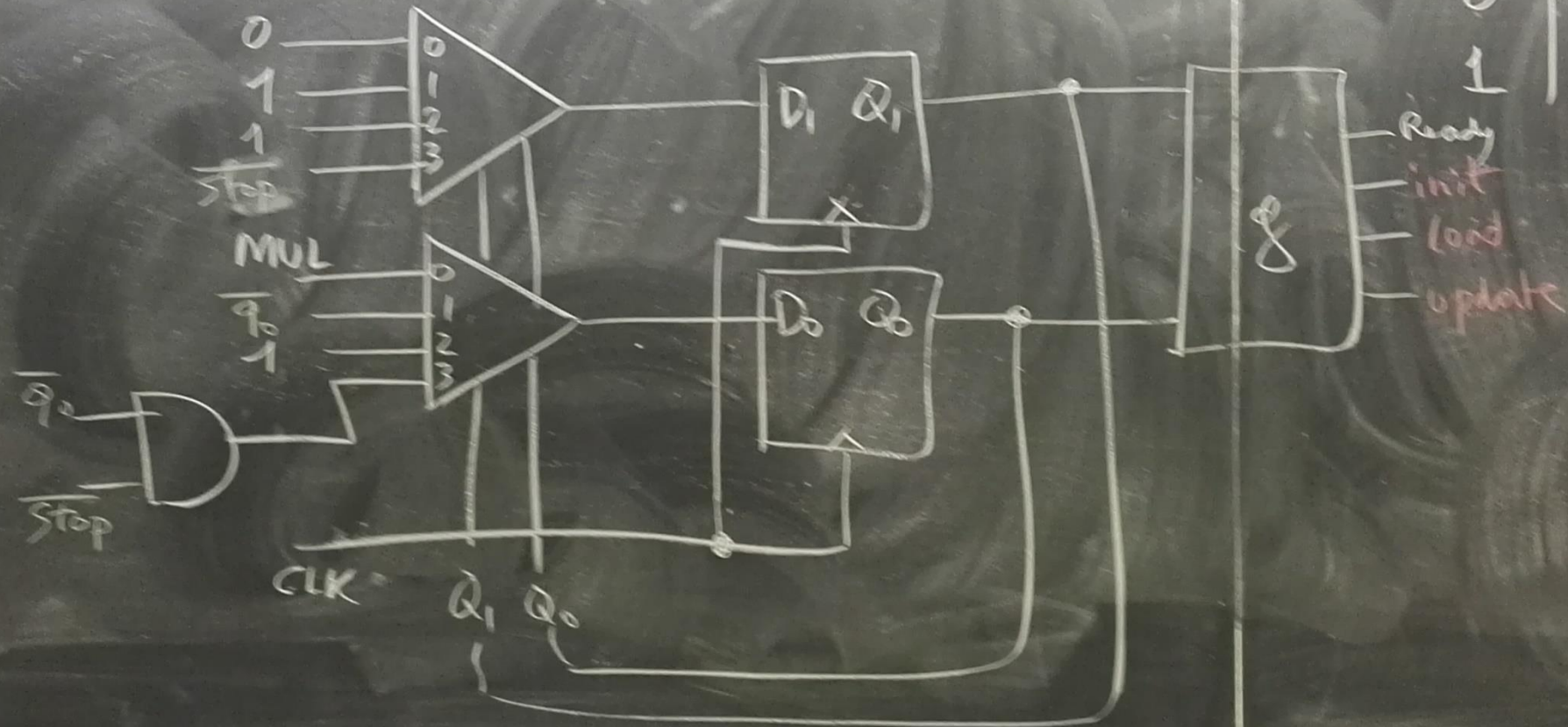
SP = UPDATE (1,1)

q_0	Stop	Q'_1	Q'_0
0	0	1	1
0	1	0	0
1	0	1	0
1	1	0	0
		↓	↓
		$\overline{\text{Stop}}$	$\overline{q_0} \cdot \overline{\text{Stop}}$

$$= f_0(MUL) \cdot \overline{Q_1}Q_0 + f_1(q_0) \cdot \overline{Q_1}Q_0 + f_2(-) \cdot Q_1Q_0 + f_3(q_0, stop) \cdot Q_1Q_0$$

$Q_1Q_0 = 00$ $Q_1Q_0 = 01$ $Q_1Q_0 = 10$ $Q_1Q_0 = 11$





SP = WAT

MUL | Q₁

0 | 0

1 | 0

↓

0

Ready

init

load

update

$$\vec{f} = (Q'_1, Q'_0) = f(\text{MUL}, q_0, \text{STOP}, Q_1, Q_0)$$

$$= \vec{f}_0(\text{MUL}) \Big|_{Q_1 Q_0 = 00} \cdot \bar{Q}_1 \bar{Q}_0 + \vec{f}_1(q_0) \Big|_{Q_1 Q_0 = 01} \bar{Q}_1 Q_0 + \vec{f}_2(-) \Big|_{Q_1 Q_0 = 10} Q_1 \bar{Q}_0 + \vec{f}_3(q_0, \text{STOP}) \Big|_{Q_1 Q_0 = 11} Q_1 Q_0$$

$$Q'_1 = 0 \cdot \bar{Q}_1 \bar{Q}_0 + 1 \cdot \bar{Q}_1 Q_0 + 1 \cdot Q_1 \bar{Q}_0 + \overline{\text{stop}} \cdot Q_1 Q_0 = Q_1 \oplus Q_0 + \overline{\text{stop}} Q_1 Q_0$$

$$Q'_0 = \text{MUL} \cdot \bar{Q}_1 \bar{Q}_0 + \bar{q}_0 \cdot \bar{Q}_1 Q_0 + 1 \cdot Q_1 \bar{Q}_0 + q_0 \cdot \text{stop} Q_1 Q_0$$