



***INSTITUTO POLITÉCNICO
NACIONAL***

Automatización Industrial

Practica 10. Aplicaciones neumáticas

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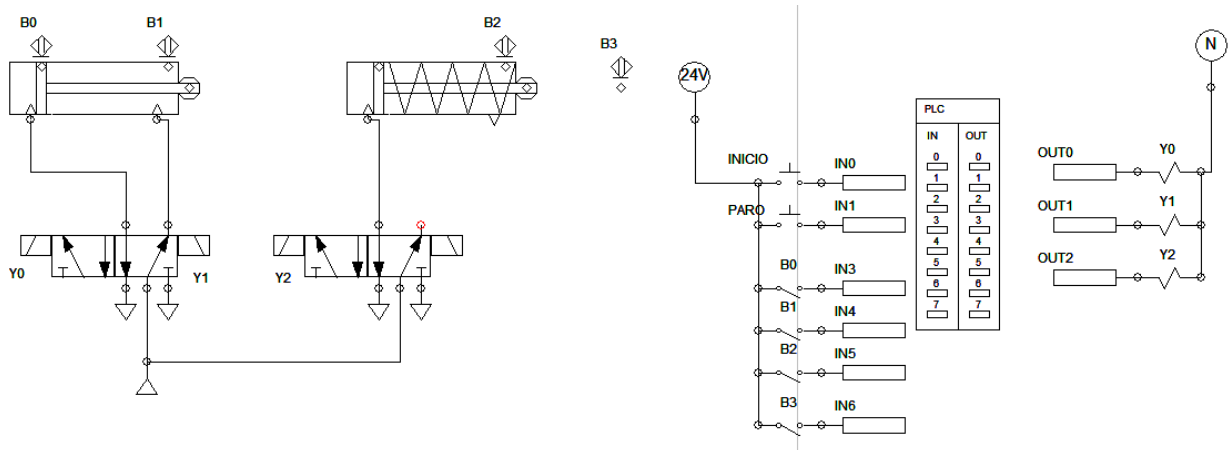
Grupo: 3MM8



***Unidad Profesional Interdisciplinaria en
Ingeniería y Tecnologías Avanzadas***

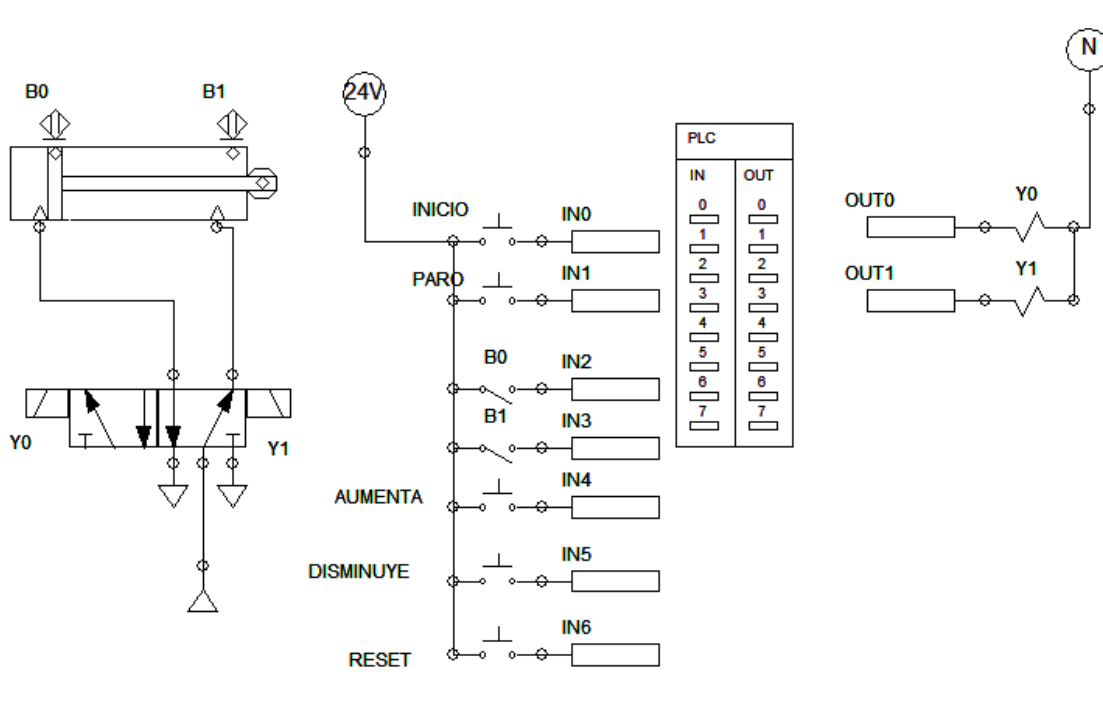
Planteamiento del problema

1. A partir del siguiente circuito realizar los programas para realizar las siguientes tareas.



- a) El cilindro 1 deberá salir 4 veces, después el cilindro 2 deberá salir 1 vez.
- b) Que realice la tarea anterior ciclada.

2. A partir del siguiente circuito implemente un programa que haga que cuando se presione el botón de inicio haga repeticiones y se tarde de 0.5 segundos hasta 10s en completar el ciclo



3. Implementar un código en el PLC que cree un oscilador con un ciclo de trabajo de 50%, que vaya cambiando su periodo desde 0.2s a 5s

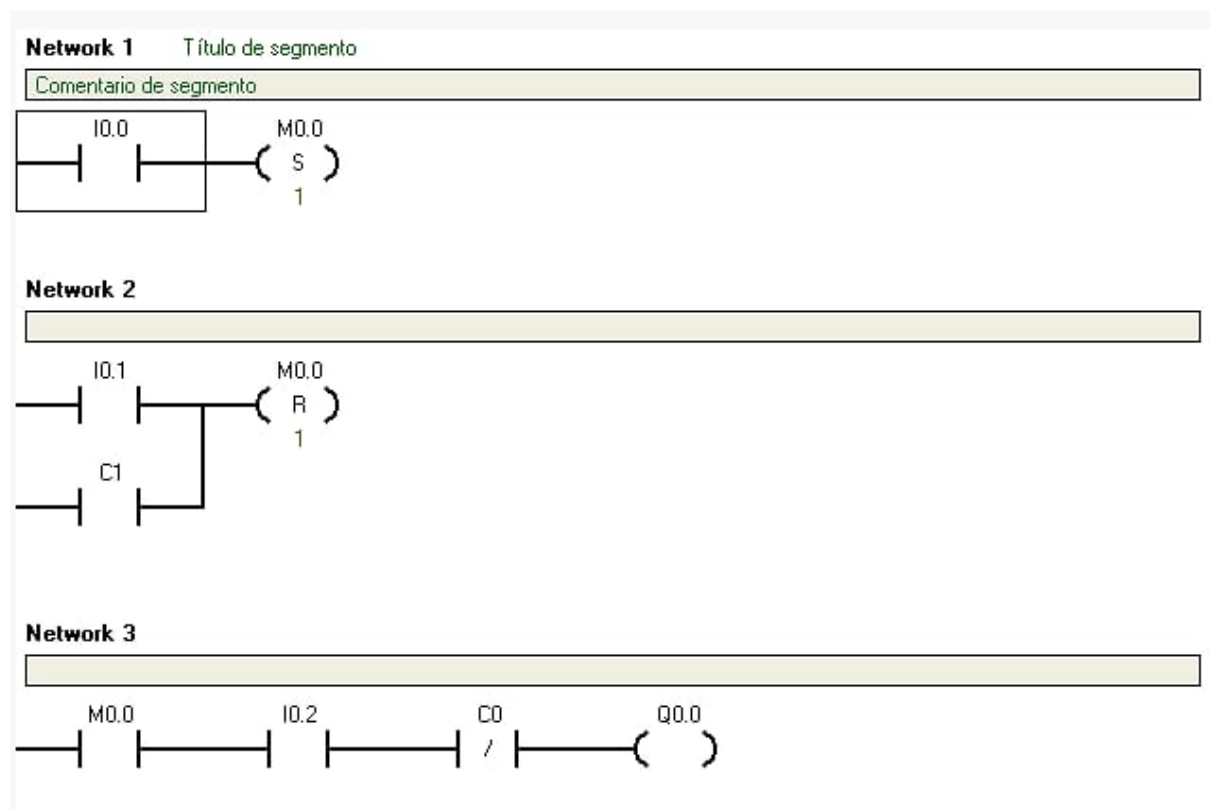
Material

- 1 PLC s7-200
- 1 Cable PPI
- 15 Cables banana-banana
- 10 Mangueras
- 1 Distribuidora
- 2 Válvulas 5/2 accionamiento por bobina
- 1 Cilindro doble efecto
- 1 Cilindro simple efecto
- 3 Cables para sensor
- 1 Sensor magnético

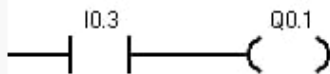
Código

1. Los dos códigos implementados fueron

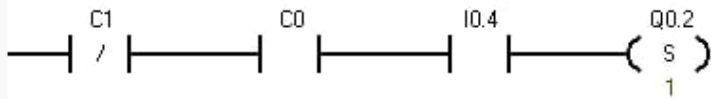
a)



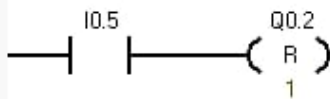
Network 4



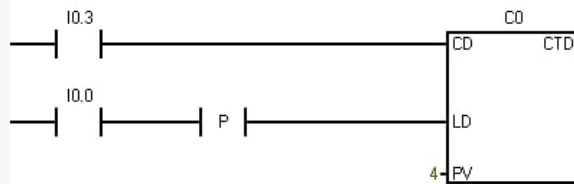
Network 5



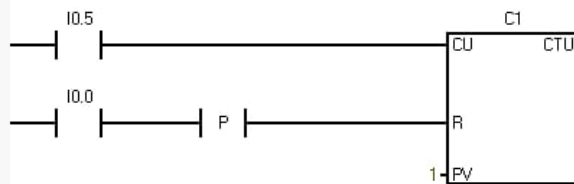
Network 6



Network 7



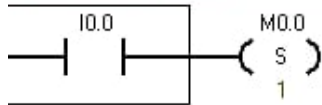
Network 8



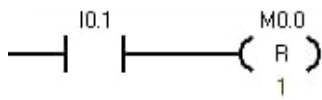
b)

Network 1 Título de segmento

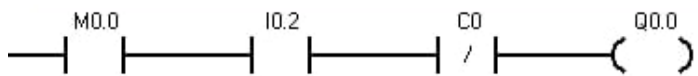
Comentario de segmento



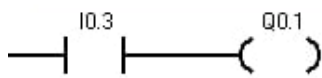
Network 2



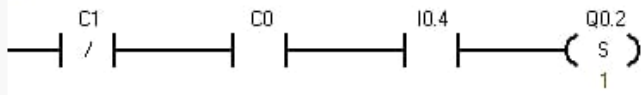
Network 3



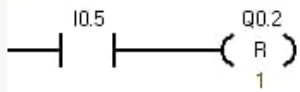
Network 4



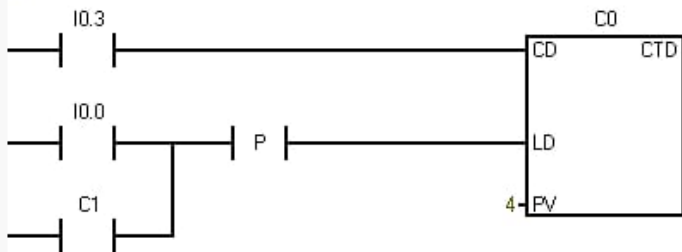
Network 5



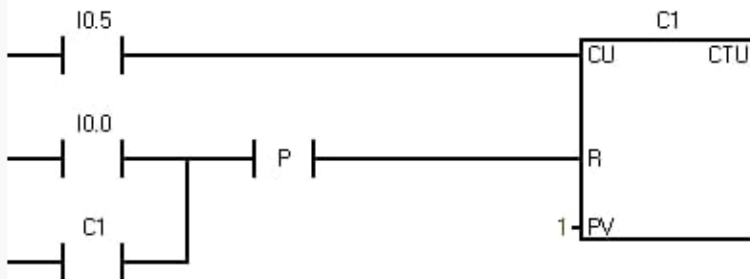
Network 6



Network 7



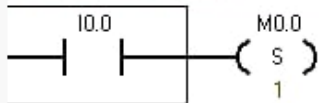
Network 8



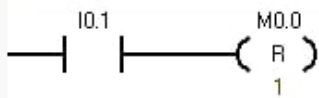
2.

Network 1 Título de segmento

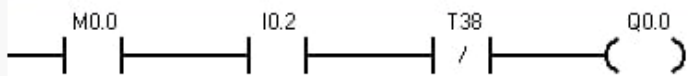
Comentario de segmento



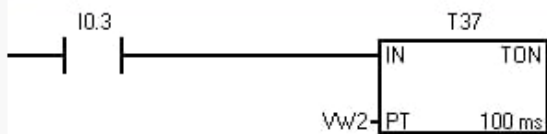
Network 2



Network 3



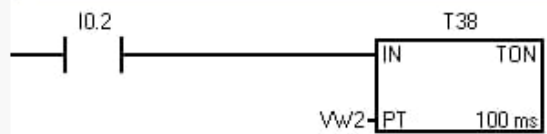
Network 4



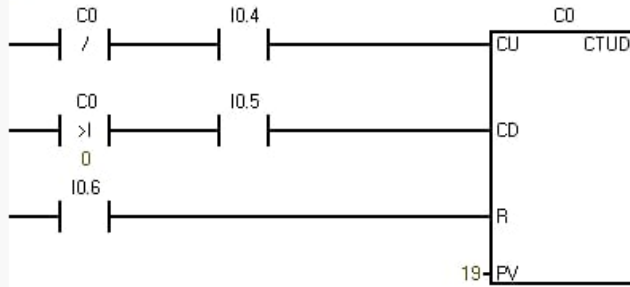
Network 5



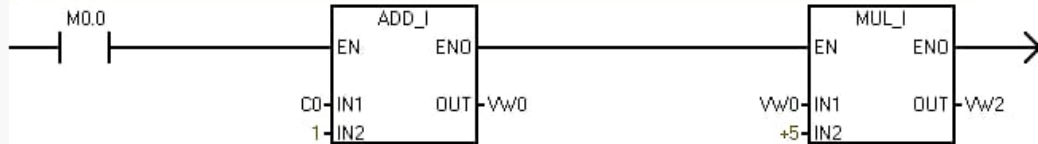
Network 6



Network 7



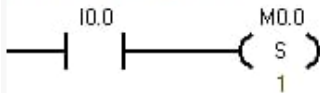
Network 8



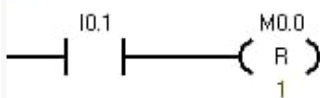
3.

Network 1 Título de segmento

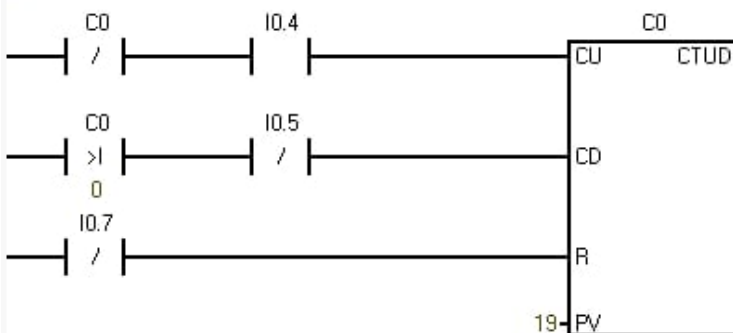
Comentario de segmento



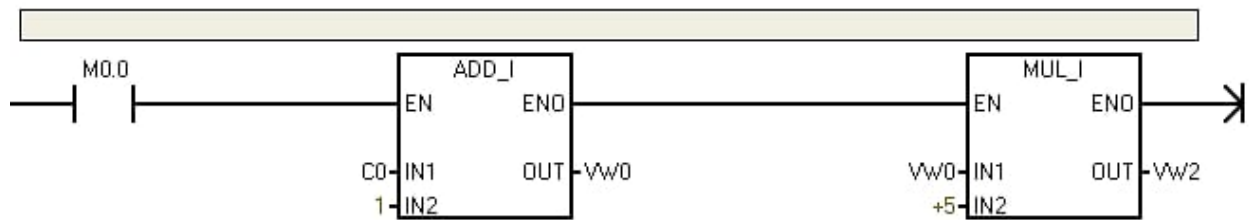
Network 2



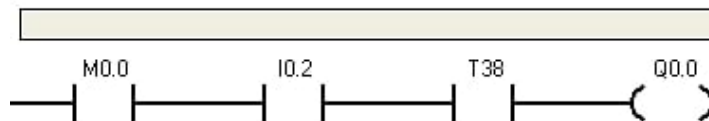
Network 3



Network 4



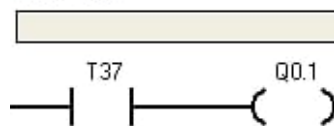
Network 5



Network 6



Network 7



Network 8



Tablas de resultados

1.

a)

T	I0.0	I0.1	I0.2	I0.3	I0.4	I0.5	Q0.0	Q0.1	Q0.2
C.in.	0	0	1	0	1	0	0	0	0
Inicio	1	0	1	0	1	0	1	0	0

Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
C0 on	0	0	1	0	1	0	0	0	1
Sale 2	0	0	1	0	0	0	0	0	1
B3 on	0	0	1	0	0	1	0	0	0
Ret 2	0	0	1	0	0	0	0	0	0
B2 on	0	0	1	0	1	0	0	0	0
C0 on	0	0	1	0	1	0	0	0	0

b)

T	I0.0	I0.1	I0.2	I0.3	I0.4	I0.5	Q0.0	Q0.1	Q0.2
C.in.	0	0	1	0	1	0	0	0	0
Inicio	1	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0

C0 on	0	0	1	0	1	0	0	0	1
Sale 2	0	0	1	0	0	0	0	0	1
B3 on	0	0	1	0	0	1	0	0	0
Ret 2	0	0	1	0	0	0	0	0	0
B2 on	0	0	1	0	1	0	0	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
C0 on	0	0	1	0	1	0	0	0	1
Sale 2	0	0	1	0	0	0	0	0	1
B3 on	0	0	1	0	0	1	0	0	0
Ret 2	0	0	1	0	0	0	0	0	0
B2 on	0	0	1	0	1	0	0	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
Sale 1	0	0	0	0	1	0	1	0	0
B1 on	0	0	0	1	1	0	0	1	0
ret 1	0	0	0	0	1	0	0	1	0
B0 on	0	0	1	0	1	0	1	0	0
C0 on	0	0	1	0	1	0	0	0	1
Sale 2	0	0	1	0	0	0	0	0	1
B3 on	0	0	1	0	0	1	0	0	0

Ret 2	0	0	1	0	0	0	0	0	0
B2 on	0	0	1	0	1	0	0	0	0

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2.

	I0.0	I0.1	I0.2	I0.3	I0.4	I0.5	I0.6	Q0.0	Q0.1
CI	0	0	1	0	0	0	0	0	0
Inicio	1	0	1	0	0	0	0	1	0
Sale 1	0	0	0	0	0	0	0	1	0
Espera C0	0	0	0	1	0	0	0	1	0
Regresa 1	0	0	0	0	0	0	0	0	1
Espera C0	0	0	1	0	0	0	0	0	1
Repite									
Aumenta C0	0	0	1	0	1	0	0	0	1
Disminuye C0	0	0	1	0	0	1	0	0	1
Resetea C0	0	0	1	0	0	0	1	0	1
paro	0	0	1	0	0	0	0	0	0

3.

	I0.0	I0.1	I0.2	I0.3	I0.4	Q0.0
CI	0	0	0	0	0	0
Inicio	1	0	0	0	0	0
Enciende lámpara	0	0	0	0	0	1
Espera C0	0	0	0	0	0	1
Apaga lámpara	0	0	0	0	0	0
Espera C0	0	0	0	0	0	0
Repite						
Aumenta C0	0	0	1	0	0	X
Disminuye C0	0	0	0	1	0	X
Resetea C0	0	0	0	0	1	X
paro	0	0	0	0	0	0