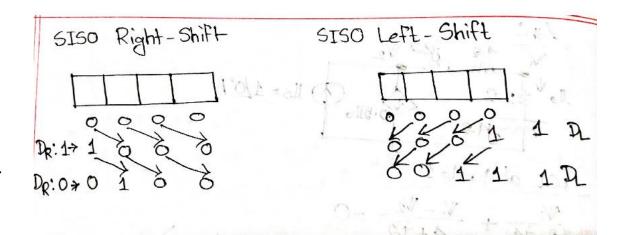
# Chapter 11 Registers and Counters

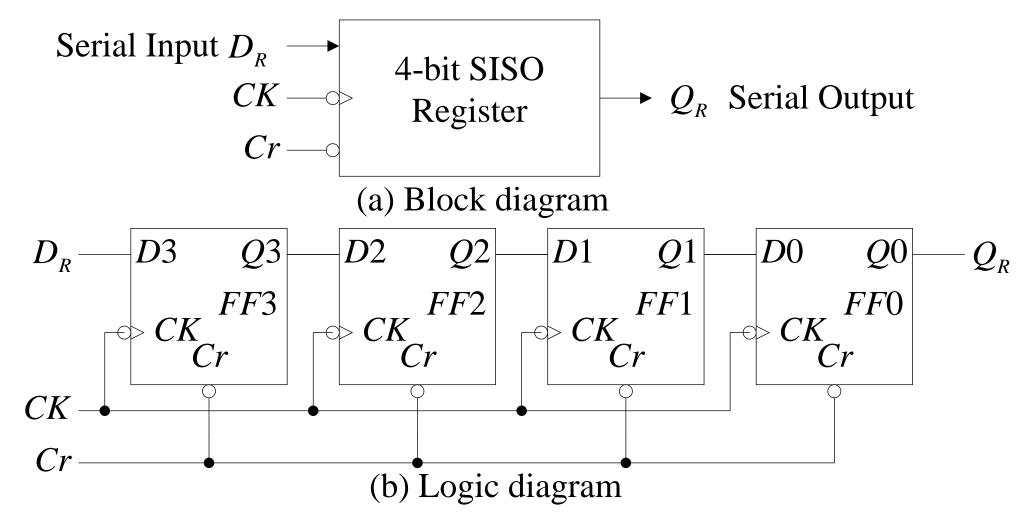
## Registers

#### **Registers and Their Classifications**

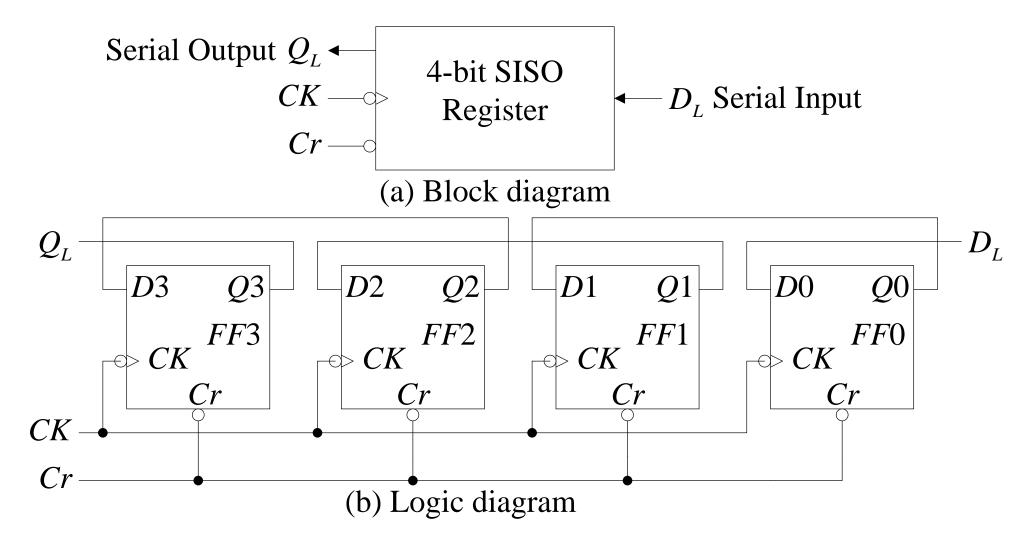
- Serial-in, serial-out (SISO)
  - > Serial-In Serial-Out Right-Shift Register
  - ➤ Serial-In Serial-Out Left-Shift Register
  - ➤ Serial-In Serial-Out Bi-Directional Shift Register
- Serial-in, parallel-out (SIPO)
  - ➤ Serial-In Parallel-Out Right-Shift Register
  - ➤ Serial-In Parallel-Out Left-Shift Register
  - ➤ Serial-In Parallel-Out Bi-Directional Shift Register
- Parallel -in, parallel-out (PIPO)
- Parallel-in, serial-out (PISO)
  - ➤ Parallel-In Serial-Out Right-Shift Register
  - ➤ Parallel-In Serial-Out Left-Shift Register



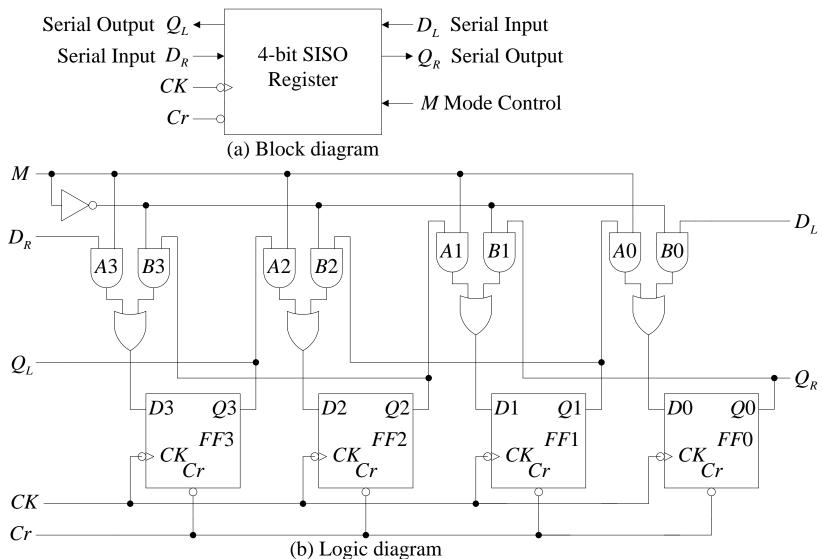
Serial-In Serial-Out Right-Shift Register



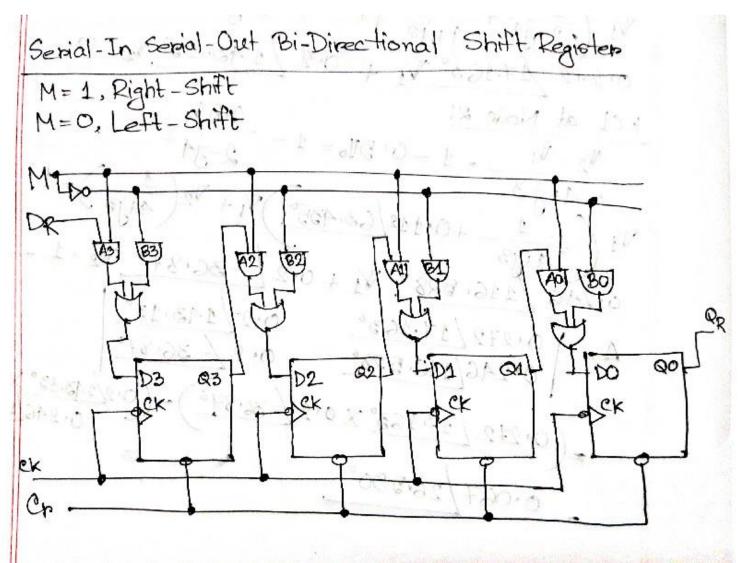
Serial-In Serial-Out Left-Shift Register



#### Serial-In Serial-Out Bi-Directional Shift Register

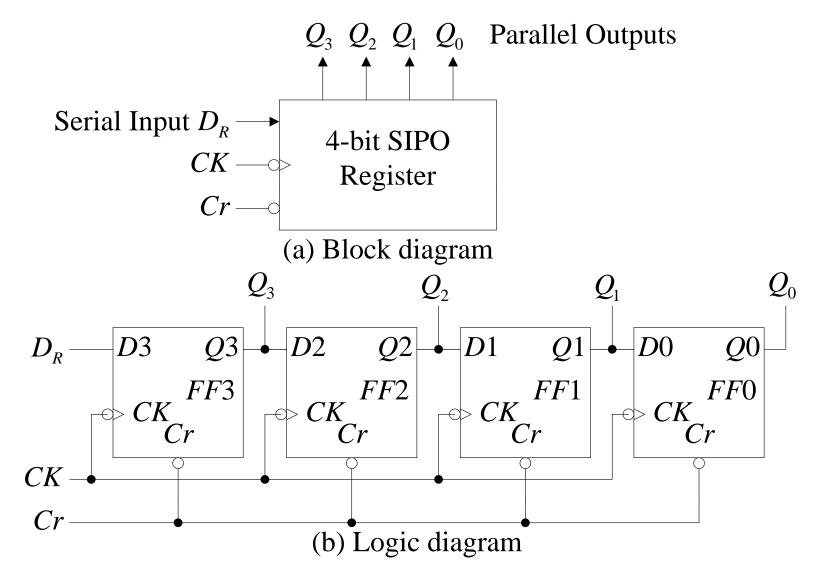


Serial-In Serial-Out Bi-Directional Shift Register



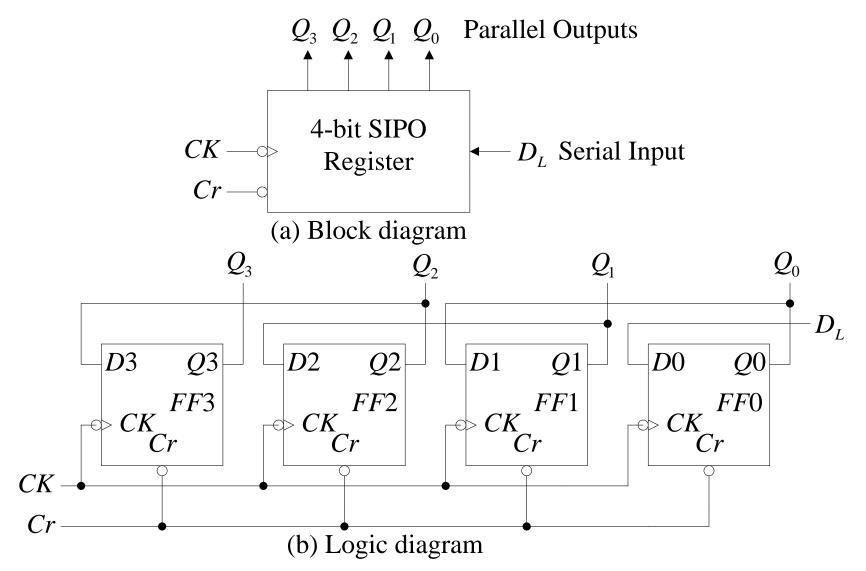
# Serial-in, parallel-out (SIPO)

#### Serial-In Parallel-Out Right-Shift Register



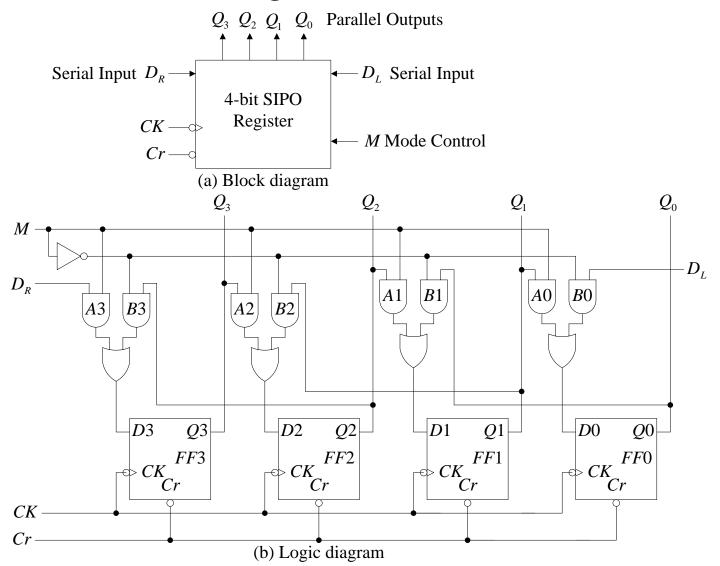
# Serial-in, parallel-out (SIPO)

#### Serial-In Parallel-Out Left-Shift Register

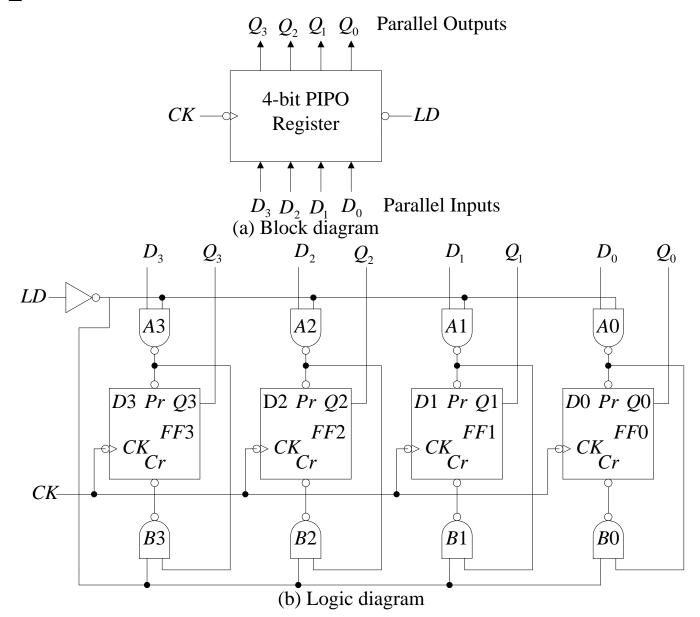


# Serial-in, parallel-out (SIPO)

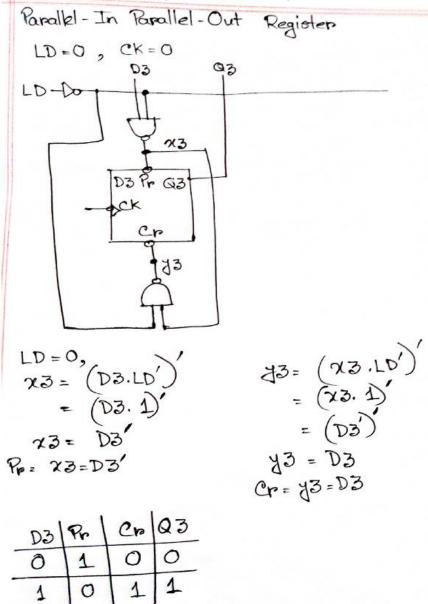
#### Serial-In Parallel-Out Bi-Directional Shift Register



# Parallel -in, parallel-out (PIPO)

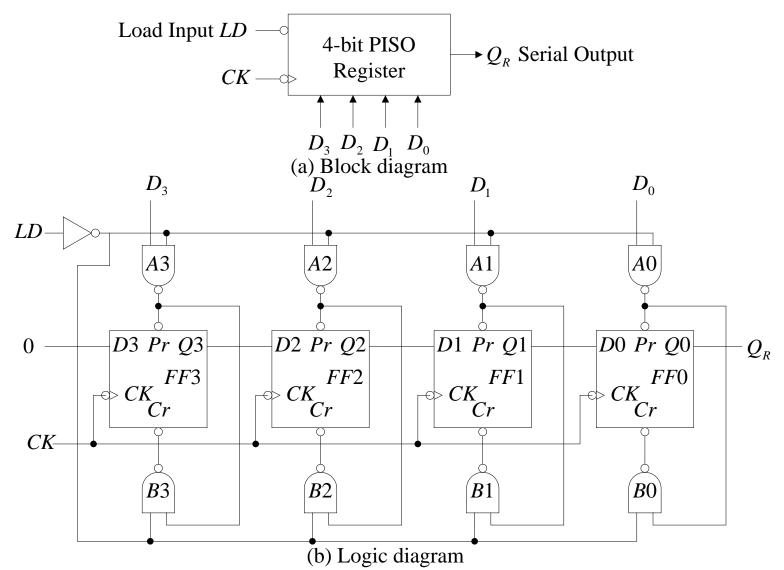


# Parallel -in, parallel-out (PIPO)



### Parallel-in, serial-out (PISO)

#### Parallel-In Serial-Out Right-Shift Register



## Parallel-in, serial-out (PISO)

#### Parallel-In Serial-Out Left-Shift Register

