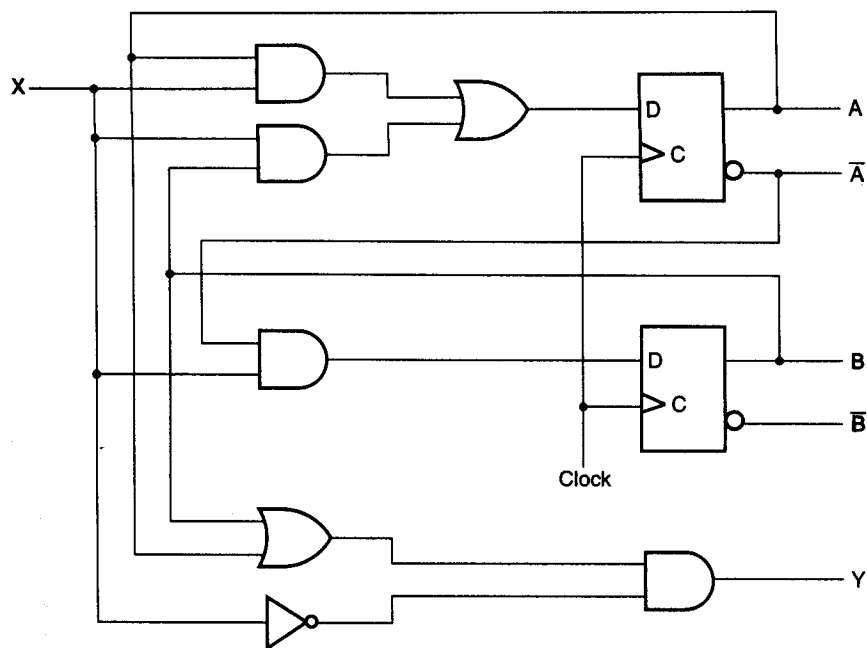


# Sequential Circuit Analysis

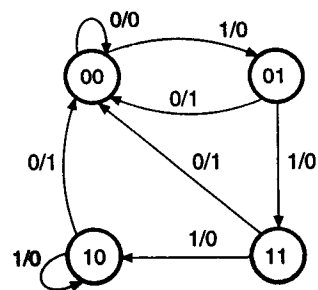


□ **FIGURE 4-18**  
Example of a Sequential Circuit

$$D_A = (AX + BX)$$

$$D_B = \bar{A}X$$

$$Y = (A + B)\bar{X}$$



□ **TABLE 4-2**  
State Table for Circuit of Figure 4-18

| Present State |   | Input | Next State |   | Output |
|---------------|---|-------|------------|---|--------|
| A             | B | X     | A          | B | Y      |
| 0             | 0 | 0     | 0          | 0 | 0      |
| 0             | 0 | 1     | 0          | 1 | 0      |
| 0             | 1 | 0     | 0          | 0 | 1      |
| 0             | 1 | 1     | 1          | 1 | 0      |
| 1             | 0 | 0     | 0          | 0 | 1      |
| 1             | 0 | 1     | 1          | 0 | 0      |
| 1             | 1 | 0     | 0          | 0 | 1      |
| 1             | 1 | 1     | 1          | 0 | 0      |