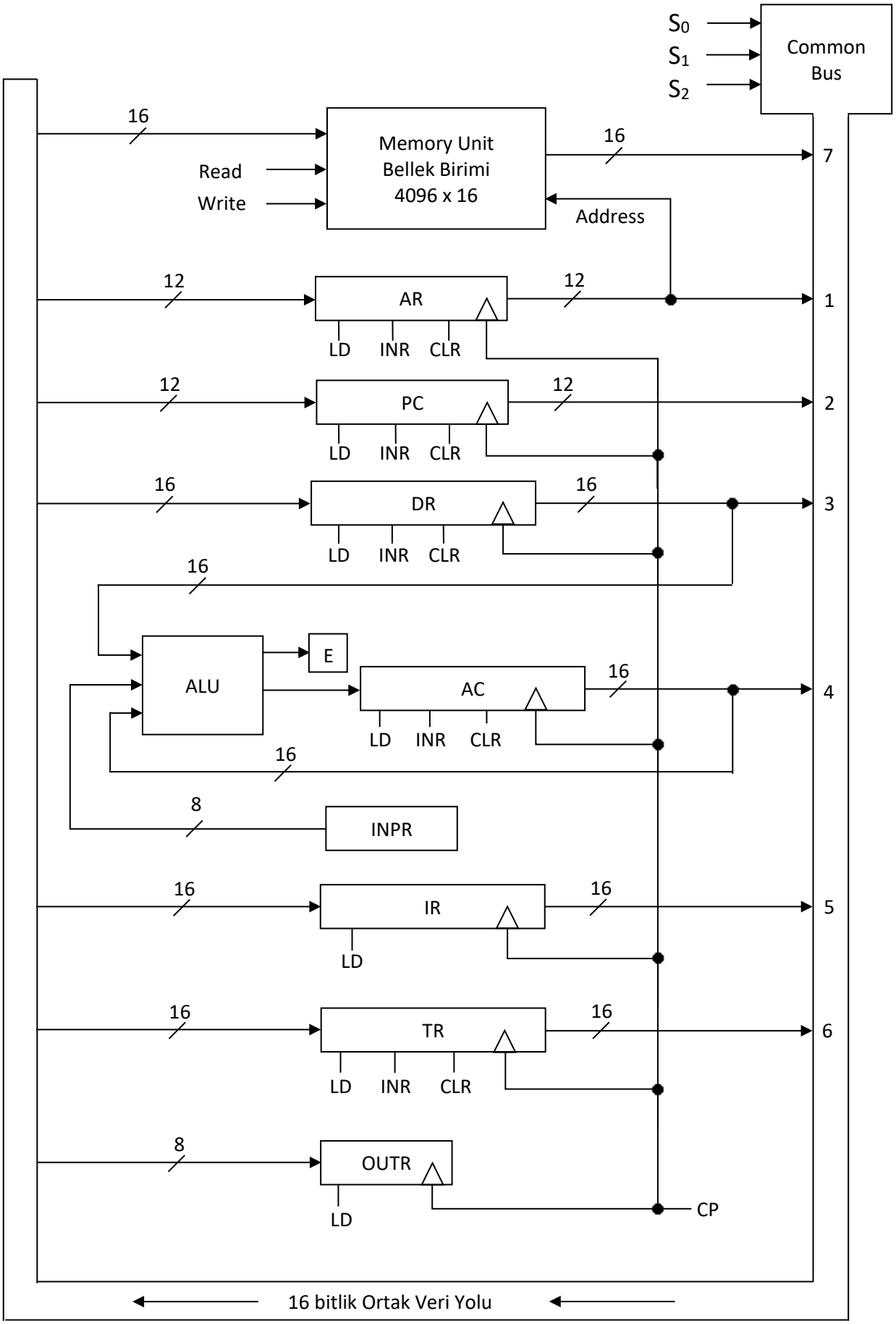
**Temel Bilgisayar Yazaçlarının bir Ortak Veri Yoluna Bağlanması**
**Basic computer registers connected to a common bus**



## Temel Bilgisayar için Denetim Fonksiyonları ve Mikroişlemler
## Control functions and microoperations for the basic computer

| | | |
|---|---|---|
| Fetch – Al Getir | $R' T_0$ : | AR ← PC |
| | $R' T_1$ : | IR ← M[AR] , PC ← PC + 1 |
| Decode – Kod Çöz | $R' T_2$ : | I ← IR(15) , $D_7 \dots D_0$ ← Decode IR (14-12) , AR ← IR(11-0) |
| Indirect – Dolaylı | $D_7' I T_3$ : | AR ← M[AR] |
| Interrupt – Kesme | $(T_0 + T_1 + T_2)' \cdot IEN \cdot (FGI + FGO) : R \rightarrow 1$ | |
| | $RT_0$ : | AR ← 0 , TR ← PC |
| | $RT_1$ : | M[AR] ← TR , PC ← 0 |
| | $RT_2$ : | PC ← PC + 1 , IEN ← 0 , R ← 0 , SC ← 0 |
| Memory Reference Instructions – Bellek Adreslemeli Buyruklar | | |
| AND | $D_0T_4$ : | DR ← M[AR] |
| | $D_0T_5$ : | AC ← AC ∧ DR , SC ← 0 |
| ADD | $D_1T_4$ : | DR ← M[AR] |
| | $D_1T_5$ : | AC ← AC + DR , E ← $C_{out}$ , SC ← 0 |
| LDA | $D_2T_4$ : | DR ← M[AR] |
| | $D_2T_5$ : | AC ← DR , SC ← 0 |
| STA | $D_3T_4$ : | M[AR] ← AC, SC ← 0 |
| BUN | $D_4T_4$ : | PC ← AR , SC ← 0 |
| BSA | $D_5T_4$ : | M[AR] ← PC , AR ← AR + 1 |
| | $D_5T_5$ : | PC ← AR , SC ← 0 |
| ISZ | $D_6T_4$ : | DR ← M[AR] |
| | $D_6T_5$ : | DR ← DR + 1 |
| | $D_6T_6$ : | M[AR] ← DR , If DR = 0 then PC ← PC + 1 , SC ← 0 |
| Register Reference Instructions – Yazaç Adreslemeli Buyruklar | | |
| $D_7 I' T_3 = r$ , | IR(i) = $B_i$ ( i = 0 , 1 , 2 , … , 11 ) | |
| | r : | SC ← 0 |
| CLA | $rB_{11}$ : | AC ← 0 |
| CLE | $rB_{10}$ : | E ← 0 |
| CMA | $rB_9$ : | AC ← AC' |
| CME | $rB_8$ : | E ← E' |
| CIR | $rB_7$ : | AC ← shr AC , AC(15) ← E , E ← AC(0) |
| CIL | $rB_6$ : | AC ← shl AC , AC(0) ← E , E ← AC(15) |
| INC | $rB_5$ : | AC ← AC + 1 |
| SPA | $rB_4$ : | If AC(15) = 0 then PC ← PC + 1 |
| SNA | $rB_3$ : | If AC(15) = 1 then PC ← PC + 1 |
| SZA | $rB_2$ : | If AC = 0 then PC ← PC + 1 |
| SZE | $rB_1$ : | If E = 0 then PC ← PC + 1 |
| HLT | $rB_0$ : | S ← 0 |
| Input Output Instructions – Giriş Çıkış Buyrukları | | |
| $D_7 I T_3 = p$ , | IR(i) = $B_i$ ( i = 6, 7, 8, 9, 10, 11 ) | |
| | p : | SC ← 0 |
| INP | $pB_{11}$ : | AC (7-0) ← INPR , FGI ← 0 |
| OUT | $pB_{10}$ : | OUTR ← AC (7-0) , FG0 ← 0 |
| SKI | $pB_9$ : | If FGI = 1 then PC ← PC + 1 |
| SKO | $pB_8$ : | If FGO = 1 then PC ← PC + 1 |
| ION | $pB_7$ : | IEN ← 1 |
| IOF | $pB_6$ : | IEN ← 0 |