# Computer Peripheral and Interfacing Lab Manual
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## MOV OPERATIONS

| Mnemonics | HEX Value |
| --- | --- |
| MOV CX,01FFH | B9, FF, 01 |
| MOV AL, VALUE | BO, VALUE |
| MOV BL, VALUE | B3, VALUE |
| MOV DL, VALUE | B2, VALUE |
| MOV CL, VALUE | B1, VALUE |
| MOV AL, BL | 8A, C3 |
| MOV AL, CL | 8A, C1 |
| MOV AL, DL | 8A, C2 |
| MOV BL, AL | 8A, D8 |
| MOV BL, CL | 8A, D9 |
| MOV BL, DL | 8A, DA |
| MOV CL, AL | 8A, C8 |
| MOV CL, BL | 8A, CB |
| MOV CL, DL | 8A, CA |
| MOV DL, AL | 8A, D0 |
| MOV DL, BL | 8A, D3 |
| MOV DL, CL | 8A, D1 |

## JUMP OPERATIONS

| Mnemonics | HEX Value |
|---|---|
| JNZ LABEL | 75 |
| JMP LABEL | EB |
| JC LABEL | 72 |
| JZ LABEL | 74 |
| JNC LABEL | 73 |
| JG LABEL | 7F |
| JB LABEL | 72 |
| LOOP LABEL | E2 LABEL |

## LOGICAL OPERATIONS

| Mnemonics | HEX Value |
|---|---|
| XOR AL, BL | 32, C3 |
| XOR AL, CL | 32, C1 |
| XOR AL, DL | 32, C2 |
| XOR BL, AL | 32, D8 |
| XOR BL, CL | 32, D9 |
| XOR BL, DL | 32, DA |
| XOR DL, AL | 32, D0 |
| NEG AL | F6, D8 |
| NEG DL | F6, DA |
| AND AL, DL | 22, C2 |
| OR AL, DL | 0A, C2 |

## SHIFT OPERATIONS

| Mnemonics | HEX Value |
|---|---|
| SHR AL, VALUE | D0,E8 [Type value times] |
| SHR BL, VALUE | D0, EB |
| SHR DL, VALUE | D0, EA |
| SHL AL, VALUE | D0,E0 |
| SHL BL, VALUE | D0,E3 |
| SHL DL, VALUE | D0,E2 |
| ROR AL, VALUE | D0,C8 |
| ROR BL, VALUE | D0,CB |
| ROR DL, VALUE | D0,CA |
| ROL AL, VALUE | D0,C0 |
| ROL BL, VALUE | D0,C3 |
| ROL DL, VALUE | D0,C2 |

## Port Address(8255A)

| Dot Matrix LED | Address | 4 LEDs and Seven Segment LED | Address |
|---|---|---|---|
| Port A | 18H | Port A | 19H |
| Port B | 1AH | Port B | 1BH |
| Port C | 1CH | Port C | 1DH |
| Control Register | 1EH | Control Register | 1FH |
| | | RED - F1 | YELLOW - F4 |
| | | GREEN - F2 | RED - F8 |

# ARITHMETIC OPERATIONS

| Mnemonics | HEX Value |
| --- | --- |
| ADD AL, VALUE | 04, VALUE |
| ADD AL, AL | 02, C0 |
| ADD AL, BL | 02, C3 |
| ADD AL, CL | 02, C1 |
| ADD AL, DL | 02, C2 |
| ADD BL, VALUE | 80, C3, VALUE |
| ADD BL, AL | 02, D8 |
| ADD BL, BL | 02, DB |
| ADD BL, CL | 02, D9 |
| ADD BL, DL | 02, DA |
| ADD CL, VALUE | 80, C1, VALUE |
| ADD CL, CL | 02, C9 |
| ADD CL, AL | 02, C8 |
| ADD CL, BL | 02, CB |
| ADD CL, DL | 02, CA |
| ADD DL, VALUE | 80, C2, VALUE |
| ADD DL, DL | 02, D2 |
| ADD DL, AL | 02, D0 |
| ADD DL, BL | 02, D3 |
| ADD DL, CL | 02, D1 |

# INC/DEC

| Mnemonics | HEX Value |
|-----------|-----------|
| INC AL | FE, C0 |
| INC BL | FE, C3 |
| INC CL | FE, C1 |
| INC DL | FE, C2 |
| DEC AL | FE, C8 |
| DEC BL | FE, CB |
| DEC CL | FE, C9 |
| DEC DL | FE, CA |