|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Address** | | **Mnemonic** | **Code** |  | **Instruction Description** |
| 00 | | LDA 99 | 599 |  | ;Load with ZERO to initialize multi run program |
| 01 | | STO 96 | 396 |  | ;Store SUM |
| 02 | | IN | 901 |  | ;Input provided by user |
| 03 | | BRZ 95 | 795 |  | ;Branch if Zero to HLT |
| 04 | | BRP 06 | 806 |  | ;Branch if positive or zero |
| 05 | | BR 95 | 695 |  | ;Branch Unconditional to HLT |
| 06 | | STO 98 | 398 |  | ;Store Input in N |
| 07 | | ADD 96 | 196 |  | ;Add SUM to N |
| 08 | | STO 96 | 396 |  | ;Store SUM |
| 09 | | LDA 98 | 598 |  | ;Load N |
| 10 | | SUB 97 | 297 |  | ;Subtract ONE from N |
| 11 | | BRZ 13 | 713 |  | ;Branch if Zero to print result |
| 12 | | BR 06 | 606 |  | ;Branch Unconditional to continue loop |
| 13 | | LDA 96 | 596 |  | ;Load SUM |
| 14 | | OUT | 902 |  | ;Output SUM |
| 15 | | BR 00 | 600 |  | ;Branch to get next N |
| 16 | |  |  |  |  |
| 17 | |  |  |  |  |
| 18 | |  |  |  |  |
| 19 | |  |  |  |  |
| 20 | |  |  |  |  |
| 21 | |  |  |  |  |
| 22 | |  |  |  |  |
| 23 | |  |  |  |  |
| 24 | |  |  |  |  |
| 25 | |  |  |  |  |
| 26 | |  |  |  |  |
| 27 | |  |  |  |  |
| 28 | |  |  |  |  |
| 29 | |  |  |  |  |
| 30 | |  |  |  |  |
| 31 | |  |  |  |  |
| 32 | |  |  |  |  |
| 33 | |  |  |  |  |
| 34 | |  |  |  |  |
| 35 | |  |  |  |  |
| 36 | |  |  |  |  |
| 37 | |  |  |  |  |
| 38 | |  |  |  |  |
| 39 | |  |  |  |  |
| 40 | |  |  |  |  |
| 41 | |  |  |  |  |
| 42 | |  |  |  |  |
| 43 | |  |  |  |  |
| 44 | |  |  |  |  |
| 45 | |  |  |  |  |
| 46 | |  |  |  |  |
| 47 | |  |  |  |  |
| 48 | |  |  |  |  |
| 49 | |  |  |  |  |
| 50 | |  |  |  |  |
| 51 | |  |  |  |  |
| 52 | |  |  |  |  |
| 53 | |  |  |  |  |
| 54 | |  |  |  |  |
| 55 | |  |  |  |  |
| 56 | |  |  |  |  |
| 57 | |  |  |  |  |
| 58 | |  |  |  |  |
| 59 | |  |  |  |  |
| 60 | |  |  |  |  |
| 61 | |  |  |  |  |
| 62 | |  |  |  |  |
| 63 | |  |  |  |  |
| 64 | |  |  |  |  |
| 65 | |  |  |  |  |
| 66 | |  |  |  |  |
| 67 | |  |  |  |  |
| 68 | |  |  |  |  |
| 69 | |  |  |  |  |
| 70 | |  |  |  |  |
| 71 | |  |  |  |  |
| 72 | |  |  |  |  |
| 73 | |  |  |  |  |
| 74 | |  |  |  |  |
| 75 | |  |  |  |  |
| 76 | |  |  |  |  |
| 77 | |  |  |  |  |
| 78 | |  |  |  |  |
| 79 | |  |  |  |  |
| 80 | |  |  |  |  |
| 81 | |  |  |  |  |
| 82 | |  |  |  |  |
| 83 | |  |  |  |  |
| 84 | |  |  |  |  |
| 85 | |  |  |  |  |
| 86 | |  |  |  |  |
| 87 | |  |  |  |  |
| 88 | |  |  |  |  |
| 89 | |  |  |  |  |
| 90 | |  |  |  |  |
| 91 | |  |  |  |  |
| 92 | |  |  |  |  |
| 93 | |  |  |  |  |
| 94 | |  |  |  |  |
| 95 | | HLT | 000 |  | ;Halt |
| 96 | | DAT 00 | 000 |  | ;Data Storage Location SUM |
| 97 | | DAT 01 | 001 |  | ;Data Storage Location ONE |
| 98 | | DAT 00 | 000 |  | ;Data Storage Location N |
| 99 | | DAT 00 | 000 |  | ;Data Storage Location ZERO |
|  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Address** | **Mnemonic** | **Code** | **Instruction Description** |
| 00 | IN | 901 | ;Input provided by user |
| 01 | BRP 06 | 806 | ;Branch if positive or zero |
| 02 | LDA 99 | 599 | ;Load ZERO |
| 03 | ADD 97 | 197 | ;Add ONE if Negative |
| 04 | STO 98 | 398 | ;Store NEG |
| 05 | STO 98 | 608 | ;Branch Unconditional to print |
| 06 | LDA 99 | 599 | ;Load ZERO |
| 07 | STO 98 | 398 | ;Store NEG |
| 08 | OUT | 902 | ;print result |
| 09 | HLT | 000 | ;HALT |
| 10 |  |  |  |
| 11 |  |  |  |
| 12 |  |  |  |
| 13 |  |  |  |
| 14 |  |  |  |
| 15 |  |  |  |
| 16 |  |  |  |
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |
| 26 |  |  |  |
| 27 |  |  |  |
| 28 |  |  |  |
| 29 |  |  |  |
| 30 |  |  |  |
| 31 |  |  |  |
| 32 |  |  |  |
| 33 |  |  |  |
| 34 |  |  |  |
| 35 |  |  |  |
| 36 |  |  |  |
| 37 |  |  |  |
| 38 |  |  |  |
| 39 |  |  |  |
| 40 |  |  |  |
| 41 |  |  |  |
| 42 |  |  |  |
| 43 |  |  |  |
| 44 |  |  |  |
| 45 |  |  |  |
| 46 |  |  |  |
| 47 |  |  |  |
| 48 |  |  |  |
| 49 |  |  |  |
| 50 |  |  |  |
| 51 |  |  |  |
| 52 |  |  |  |
| 53 |  |  |  |
| 54 |  |  |  |
| 55 |  |  |  |
| 56 |  |  |  |
| 57 |  |  |  |
| 58 |  |  |  |
| 59 |  |  |  |
| 60 |  |  |  |
| 61 |  |  |  |
| 62 |  |  |  |
| 63 |  |  |  |
| 64 |  |  |  |
| 65 |  |  |  |
| 66 |  |  |  |
| 67 |  |  |  |
| 68 |  |  |  |
| 69 |  |  |  |
| 70 |  |  |  |
| 71 |  |  |  |
| 72 |  |  |  |
| 73 |  |  |  |
| 74 |  |  |  |
| 75 |  |  |  |
| 76 |  |  |  |
| 77 |  |  |  |
| 78 |  |  |  |
| 79 |  |  |  |
| 80 |  |  |  |
| 81 |  |  |  |
| 82 |  |  |  |
| 83 |  |  |  |
| 84 |  |  |  |
| 85 |  |  |  |
| 86 |  |  |  |
| 87 |  |  |  |
| 88 |  |  |  |
| 89 |  |  |  |
| 90 |  |  |  |
| 91 |  |  |  |
| 92 |  |  |  |
| 93 |  |  |  |
| 94 |  |  |  |
| 95 |  |  |  |
| 96 |  |  |  |
| 97 | DAT 01 | 001 | ;Data Storage Location ONE |
| 98 | DAT 00 | 000 | ;Data Storage Location NEG |
| 99 | DAT 00 | 000 | ;Data Storage Location ZERO |
|  |  |  |  |