# PROGRAM 1:ADDITION

**INTRO:** To write a program to perform addition of two 8-bit numbers.

**FLOW CHART:**

Add two 8-bit data

00H assigned to C (carry)

Input data (8 bit) assigned

Start

Move the contents of C to accumulator

Increment the value of C

Store the value to accumulator

NO

Store the value of accumulator

END

Check for carry

|  |  |  |
| --- | --- | --- |
| ADDRESS | MNEMONICS | EXPLANATION |
| 4100 | MVIA,40H | Move immediately value ‘40’ in hexadecimal to register A, which is, accumulator |
| 4102 | MVIB,40H | Move immediately value ‘40’ in hexadecimal to register B |
| 4104 | MVIC,00H | Set carry register C to zero |
| 4106 | ADD B | add value of register B to the accumulator |
| 4107(loop 1) | JNC 410B | Jump to address 410B if there is no carry, else... |
| 410A | INR C | Increment the value of carry register C if carry is there |
| 410D(loop 1) | STA 4125 | Store value of accumulator at address 4125 |
| 4110 | MOV A,C | Move value of carry register C to the accumulator |
| 4111 | STA 4126 | Store value of accumulator at address 4126 |
| 4114 | HLT | Halt/Terminate the program |

**PROGRAMING CODE:**

**MODEL CALCULATIONS:**

40 0100 0000

+ 40 0100 0000

80 1000 0000

Here,

Answer=80 (at address 4125)

carry=00(at address 4126)  
  
 END