ANUSHKA GUPTA
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B.TECH CSE

LAB ASSIGNMENT 4

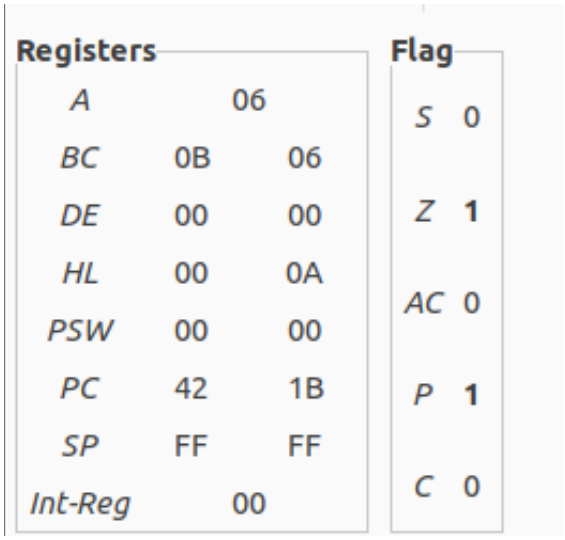
TASK : Write a program using 8085 for finding the square root of a number & verify.

Algorithm:

1) Place 1 in the subtraction counter which here is will be our C register
2) Load odd number 1 in register B
3) Load H-L pair with the address 000AH i.e memory location 10
4) Load the accumulator with the value stored in memory pointed by the H-L pair
5) Subtract odd number from the contents of accumulator
6) If remainder is zero or negative, then store the result at 000BH
7) Else increment the subtraction counter register and oddNumber=oddNumber+2 , i.e increment the contents of register B by 2.
8) Go back to step 5 and continue till the remainder becomes 0 or negative.
9) The final result is stored at 000BH

Code:

```
;<Program title>
jmp start
;data
;code
start: nop
MVI C,01
MVI B,01
LXI H, 000AH
MOV A,M
up: SUB B
JZ  down
INR C
INR B
INR B
JMP up
down: MOV A,C
STA 000BH
hlt
```



Data | Stack | KeyPad | Memory | I/O Ports

Start OK

Address (Hex)	Address	Data
0000	0	0
0001	1	0
0002	2	0
0003	3	0
0004	4	0
0005	5	0
0006	6	0
0007	7	0
0008	8	0
0009	9	0
000A	10	36
000B	11	6
000C	12	0
000D	13	0
000E	14	0
000F	15	0
0010	16	0

Line No	Assembler Message
0	Program assembled successfully

Input:
000AH -> 36

Output:
000BH -> 6

Verification: 6 * 6 =36, hence 6the square root of 36 which is the same as the result stored in the memory location 000BH . Hence square root stands verified.