MIT Practicals
Assignment 6
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Question 1: A string of readings is stored in memory, locations starting at 2070H, and the end of the string is indicated by the byte 0DH.Write a program to check each byte in the string, and the save the bytes in the range of 30H to 39H (both inclusive) in memory locations starting from 2090H.

```
1
2   ;<Question 1>
3
4   jmp start
5
6   ;data
7
8
9   ;code
10  start:  lxi h,2000h
11          mvi b,01h
12          mov c,m
13  LOOP1:  call REPEAT
14          dcr c
15          mov a,c
16          cpi 00h
17          jnz LOOP1
18          jmp END
19  REPEAT: mov d,c
20          xra a
21  LOOP:   add b
22          dcr d
23          jnz LOOP
24          mov b,a
25          ret
26  END:    inx h
27          mov m,b
28          hlt
```

Start 2000h

Address (Hex)	Address	Data
2000	8192	5
2001	8193	120
2002	8194	0
2003	8195	0
2004	8196	0
2005	8197	0
2006	8198	0
2007	8199	0
2008	8200	0
2009	8201	0
200A	8202	0

Line No	Assembler Message
0	Program assembled successfully

Question 2: WAP for Fibonacci Series using Call and Subroutine.

```
1
2   ;<Question 2>
3
4   jmp start
5
6   ;data
7
8
9   ;code
10  start:  lxi h,2000h
11          mov a,m
12          cpi 00h
13          jz END
14          mov d,m
15          mvi b,00h
16          mvi c,01h
17          inx h
18          mvi m,00h
19  LOOP:   call REPEAT
20          inx h
21          mov m,b
22          dcr d
23          mov a,d
24          cpi 00h
25          jnz LOOP
26          jmp END
27  REPEAT: mov a,b
28          mov b,c
29          add b
```

Start 2000h

Address (Hex)	Address	Data
2000	8192	5
2001	8193	0
2002	8194	1
2003	8195	1
2004	8196	2
2005	8197	3
2006	8198	5
2007	8199	0
2008	8200	0
2009	8201	0
200A	8202	0

Line No	Assembler Message
0	Program assembled successfully

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Question 3: WAP to find Multiplication of Two 8-Bit Numbers using Call and Subroutine.

```
1
2   ;<Question 3>
3
4   jmp start
5
6   ;data
7
8
9   ;code
10  start:  lxi h,2000h
11          mov b,m
12          inx h
13          mov c,m
14  LOOP:   call REPEAT
15          dcr b
16          mov a,b
17          cpi 00h
18          jnz LOOP
19          jmp END
20  REPEAT: mov a,d
21          add c
22          mov d,a
23          ret
24  END:    inx h
25          mov m,d
26          hlt
```

Start 2000h

Address (Hex)	Address	Data
2000	8192	5
2001	8193	6
2002	8194	30
2003	8195	0
2004	8196	0
2005	8197	0
2006	8198	0
2007	8199	0
2008	8200	0
2009	8201	0
200A	8202	0

Line No	Assembler Message
0	Program assembled successfully

Question 4: Write Assembly language program to find the square/square root of a number .The number is stored at location 5000H, store the result at 5050H.

```
1
2   ;<Question 4>
3
4   jmp start
5
6   ;data
7
8
9   ;code
10  start:  lxi h,2000h
11          mov b,m
12          mov c,m
13  LOOP:   call REPEAT
14          dcr b
15          mov a,b
16          cpi 00h
17          jnz LOOP
18          jmp END
19  REPEAT: mov a,d
20          add c
21          mov d,a
22          ret
23  END:    inx h
24          mov m,d
25          hlt
```

Start 2000h

Address (Hex)	Address	Data
2000	8192	5
2001	8193	25
2002	8194	0
2003	8195	0
2004	8196	0
2005	8197	0
2006	8198	0
2007	8199	0
2008	8200	0
2009	8201	0
200A	8202	0

Line No	Assembler Message
0	Program assembled successfully

```
2   ;<Question 4 B>
3
4   jmp start
5
6   ;data
7
8   ;logic
9   ;       x^2 = n
10  ;       d = 01h, 03h,05h,07h,09h,0bh
11  ;       n = ceil(sum(di)) i = 1 to x
12
13  ;code
14  start:  mvi d,01h
15          mvi e,01h
16          lda 5000h
17  LOOP:   sub d
18          jm END1
19          jz END
20          inr d
21          inr d
22          inr e
23          jmp LOOP
24  END:    mov a,e
25          jmp STORE
26  END1:   mov a,e
27          dcr a
28  STORE:  sta 5001h
29          hlt
30
```

Start 5000h

Address (Hex)	Address	Data
5000	20480	25
5001	20481	5
5002	20482	0
5003	20483	0
5004	20484	0
5005	20485	0
5006	20486	0
5007	20487	0
5008	20488	0
5009	20489	0
500A	20490	0

Line No	Assembler Message
0	Program assembled successfully