Lab Week 4
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Topic: SIC, SIC / XE : I/O Programming

1. Suppose that RECORD contains a 100-byte record. Write a subroutine for SIC that will write this record on to device 05.

Assembly Code:

```
      JSUB      WRREC
      :
      :
WRREC LDX ZERO
WLOOP TD  OUTPUT
      JEQ  WLOOP
      LDCH RECORD, X
      WD OUTPUT
      TIX LENGTH
      JLT WLOOP
      RSUB
      :
      :
ZERO      WORD      0
LENGTH    WORD 1
OUTPUT    BYTE X‘05’
RECORD    RESB 100
```

2) Write a subroutine for SIC/XE that will read a record into a buffer. The record may be any length from 1 to 100 bytes. The end of record is marked with a "null" character (ASCII code 00). The subroutine should place the length of the record read into a variable named LENGTH. Use immediate addressing and register-to-register instructions to make the process as efficient as possible.

Assembly Code:

```
      JSUB RDREC
      :
      :
RDREC     LDX  #0
      LDT  #100
      LDS  #0
RLOOP     TD   INDEV
      JEQ  RLOOP
      RD   INDEV
      COMPR A, S
      JEQ EXIT
      STCH BUFFER, X
      TIXR T
      JLT RLOOP
EXIT      STX  LENGTH
      RSUB
      :
      :
INDEV     BYTE      X'F1'
LENGTH    RESW      1
BUFFER    RESB      100
```

Load these programs into the sic simulator and examine the instruction codes and how the memory changes after each execution.
Assignment: write the object code that will be written for these programs from the two-pass assembler pseudo-code given in the book in Fig.2.4 page 53, 54

Goood luck.