Lab 5 in English

A)
Store a numeric list of data in the data memory. The size of each datum is one byte. The address of the list should be stored in $a0 and its length in $a1. Allow for the data list to be signed.

Let the user enter a set of numbers. He will also enter the size of that set. We will call that set numbers the “code”.
Write a program which detects if the code appears in the list of data you defined. Note: the code must appear in the same order as it was entered.

The program ends by printing the code and then stating whether the code was found or not found in the list.

Challenge:
Print the number of times the code appears in the data list.

B) logical operations

Write a program which accepts from the user (by the keyboard) a number of size 32 bits.
Let’s call this number X
The uppermost 8 bits of this number, X (24 … 31) represent a special code as follows:

1. If they are 0x31 then the program should place a 1 in the following bits: 0,1,6,7. The rest of the number should remain unchanged.
2. If they are 0x30 then the program should place a 0 in the following bits: 0,1,6,7. The rest of the number should remain unchanged.
3. If they are 0x48 then the program should invert the bits 8 - 15. The rest of the number should remain unchanged
4. If they are 0x74 then the program should perform shift left by N places. The N is equal to the value of the five bits 20-24.

Any other value for the code is an error and the program should print “error”.

For example:
if X = 0x307777FE then the number should be transformed into 0x3077773C

When the program prints it should print the number as received and as it is after it is transformed.
The program should keep accepting numbers until the number 0 is entered.

syscall 34 prints in hex

more numbers to check on your program for 5.2
for 0x30
input: 813135870
output: 813135676

for 0x74
input: 1949302801
output: -1585446776

for 0x48
input: 1207959594
output: 1208024874

for 0x31
input: 822083596
output: 822083791