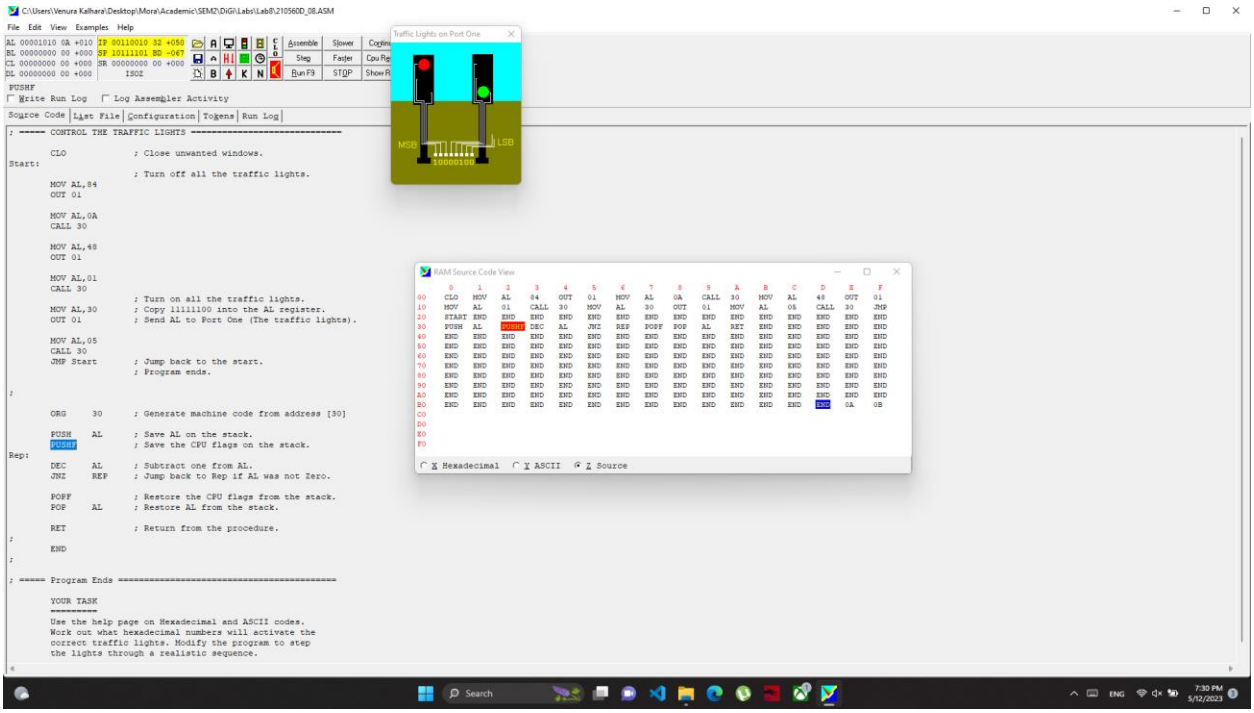
CS1050 – Computer Organization & Digital Design
Lab 8 – Lab Report

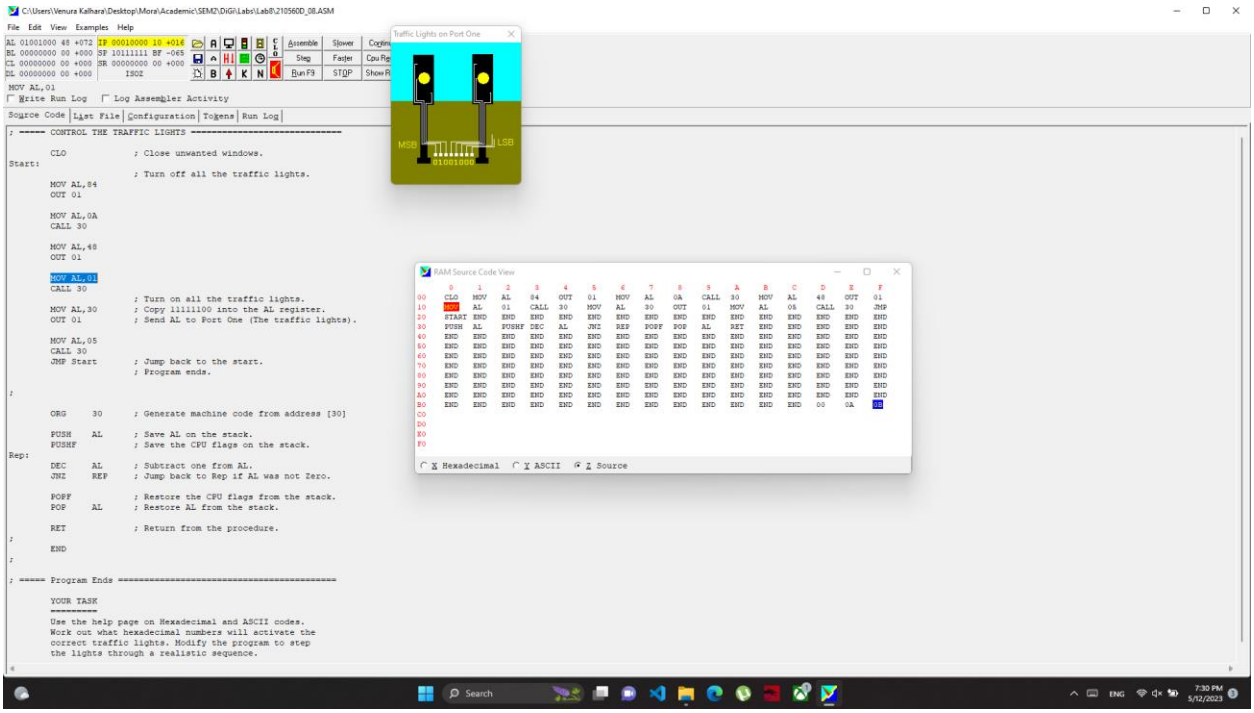
Name : Venura Kalhara
Index No. : 210560D

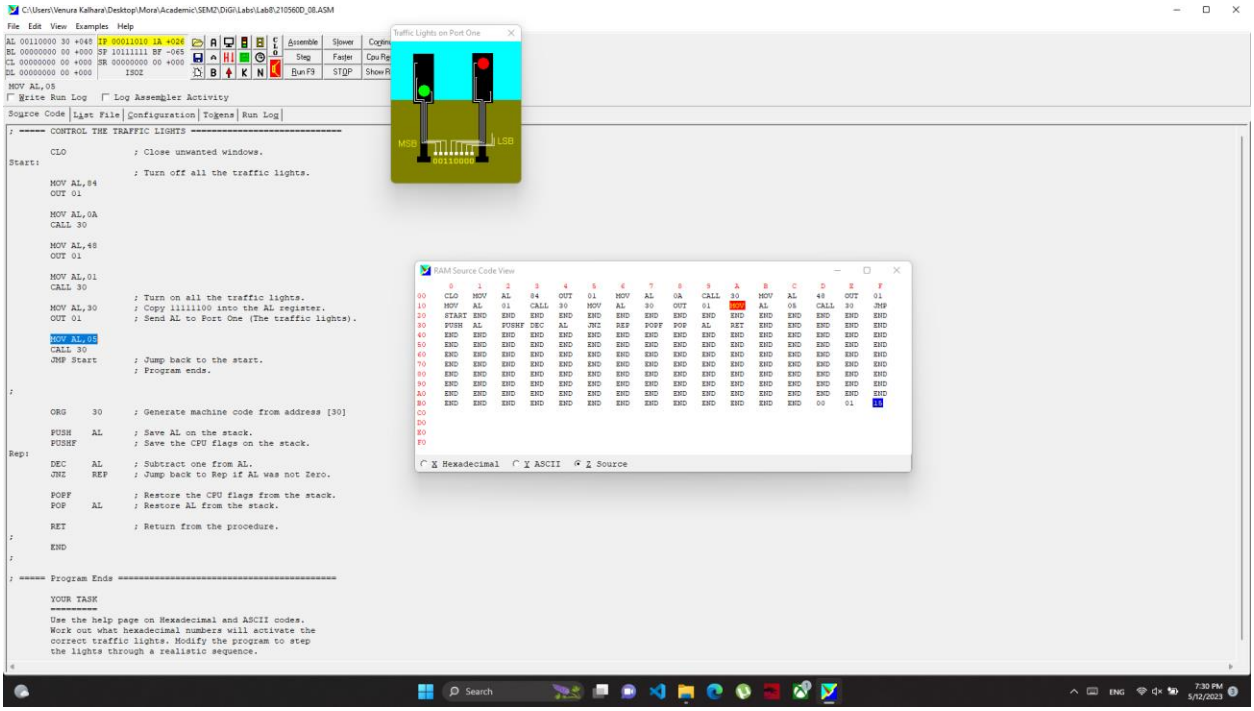
1) Lab Tasks :

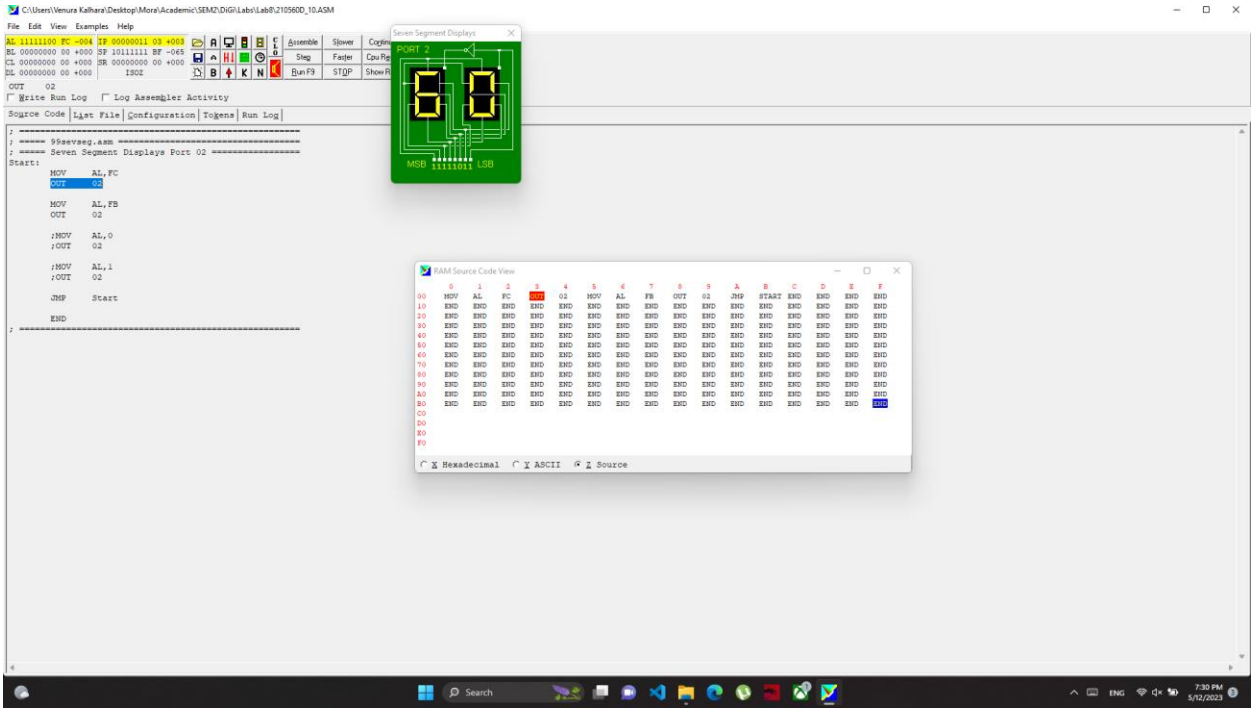
To get familiar with assembly language.

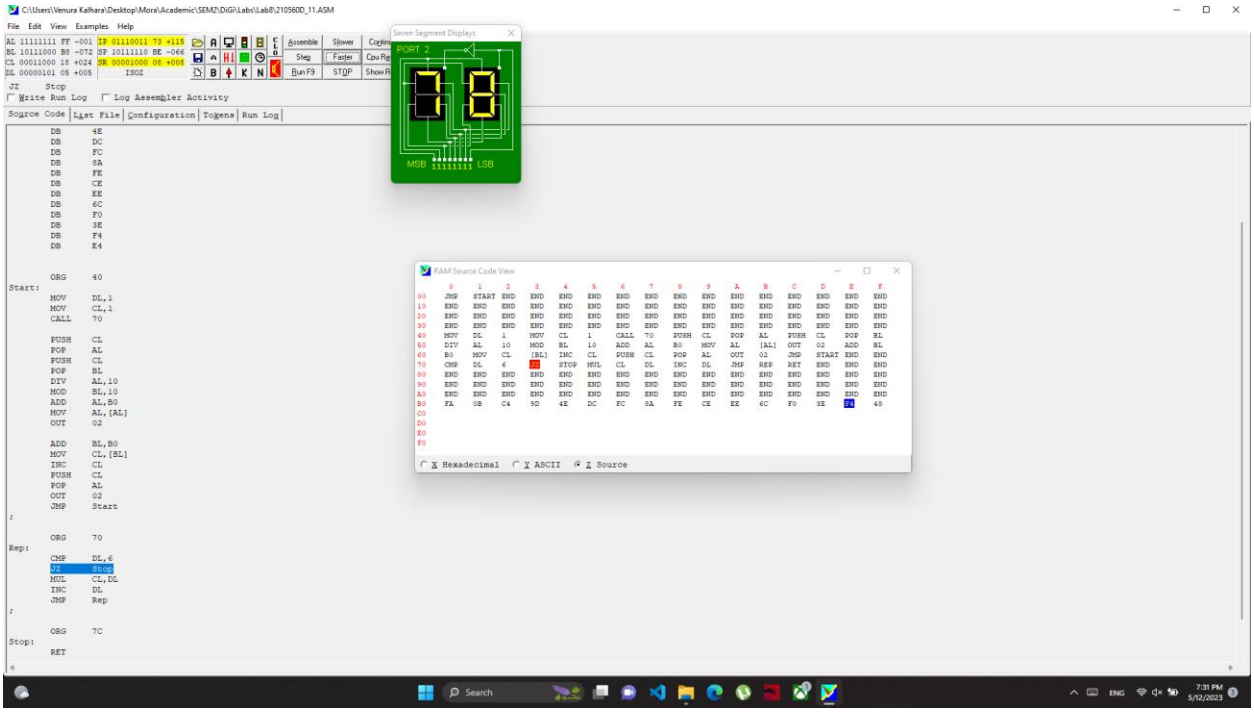
2) Screenshots






C:\Users\Venura Kalhara\Desktop\Mora\Academic\SEM2\DIGI\Labs\Lab9\210560D_08.ASM
File Edit View Examples Help
Traffic Lights on Port One
MSB
LSB
RAM Source Code View
; ===== CONTROL THE TRAFFIC LIGHTS ============================
CLO ; Close unwanted windows.
Start:
; Turn off all the traffic lights.
MOV AL,84
OUT 01
MOV AL,0A
CALL 30
MOV AL,48
OUT 01
MOV AL,01
CALL 30
; Turn on all the traffic lights.
MOV AL,30 ; Copy 11111100 into the AL register.
OUT 01 ; Send AL to Port One (The traffic lights).
MOV AL,02
CALL 30
JMP Start ; Jump back to the start.
; Program ends.
;
ORG 30 ; Generate machine code from address [30]
PUSH AL ; Save AL on the stack.
PUSHF ; Save the CPU flags on the stack.
Rep:
DEC AL ; Subtract one from AL.
JNZ REP ; Jump back to Rep if AL was not Zero.
POPF ; Restore the CPU flags from the stack.
POP AL ; Restore AL from the stack.
RET ; Return from the procedure.
;
END
;
; ===== Program Ends ==
YOUR TASK
Use the help page on Hexadecimal and ASCII codes.
Work out what hexadecimal numbers will activate the
correct traffic lights. Modify the program to step
the lights through a realistic sequence.
Source Code
List File
Configuration
Tokens
Run Log
Assemble
Slower
Step
Faster
Run F9
STOP
X Hexadecimal
X ASCII
Z Source
Search
ENG
7:30 PM
5/12/2023


C:\Users\Venura Kalhara\Desktop\Mora\Academic\SEM2\DIGI\Labs\Lab9\210560D_10.ASM
File Edit View Examples Help
Seven Segment Displays
PORT 2
MSB
LSB
RAM Source Code View
; ==
; ===== 95segseg.asm ======================================
; ===== Seven Segment Displays Port 02 ====================
Start:
MOV AL,FC
OUT 02
MOV AL,FB
OUT 02
;MOV AL,0
;OUT 02
;MOV AL,1
;OUT 02
JMP Start
END
; ==
Source Code
List File
Configuration
Tokens
Run Log
Assemble
Slower
Step
Faster
Run F9
STOP
X Hexadecimal
X ASCII
Z Source
Search
ENG
7:30 PM
5/12/2023


C:\Users\Venura Kalhara\Desktop\Mora\Academic\SEM2\DIGI\Labs\Lab8\210560D_11.ASM
File Edit View Examples Help
Assemble
Slower
Step
Faster
Run F9
STOP
Write Run Log
Log Assembler Activity
Source Code
List File
Configuration
Tokens
Run Log
Seven Segment Displays
PORT 2
MSB
LSB
RAM Source Code View
Hexadecimal
ASCII
Source
Search