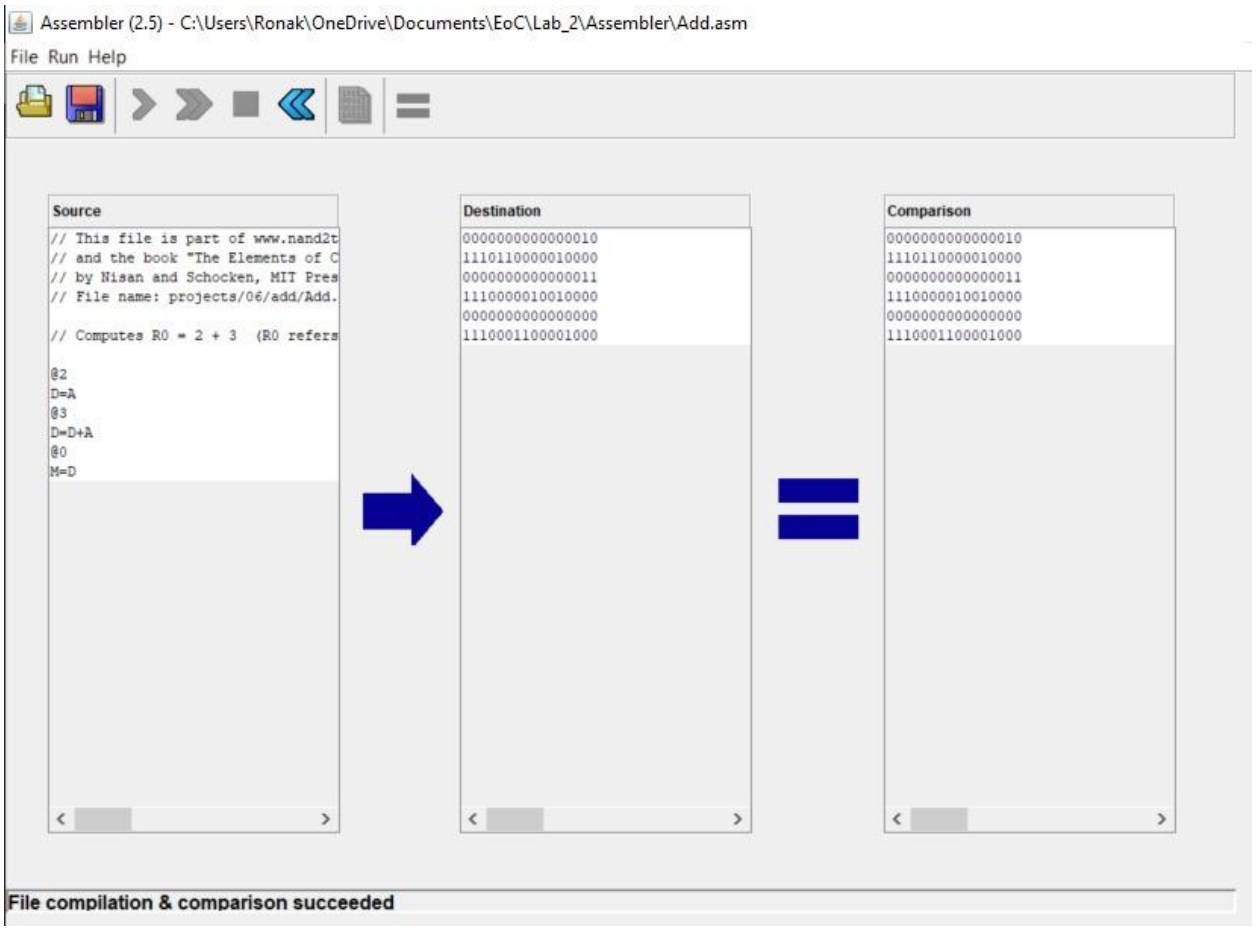
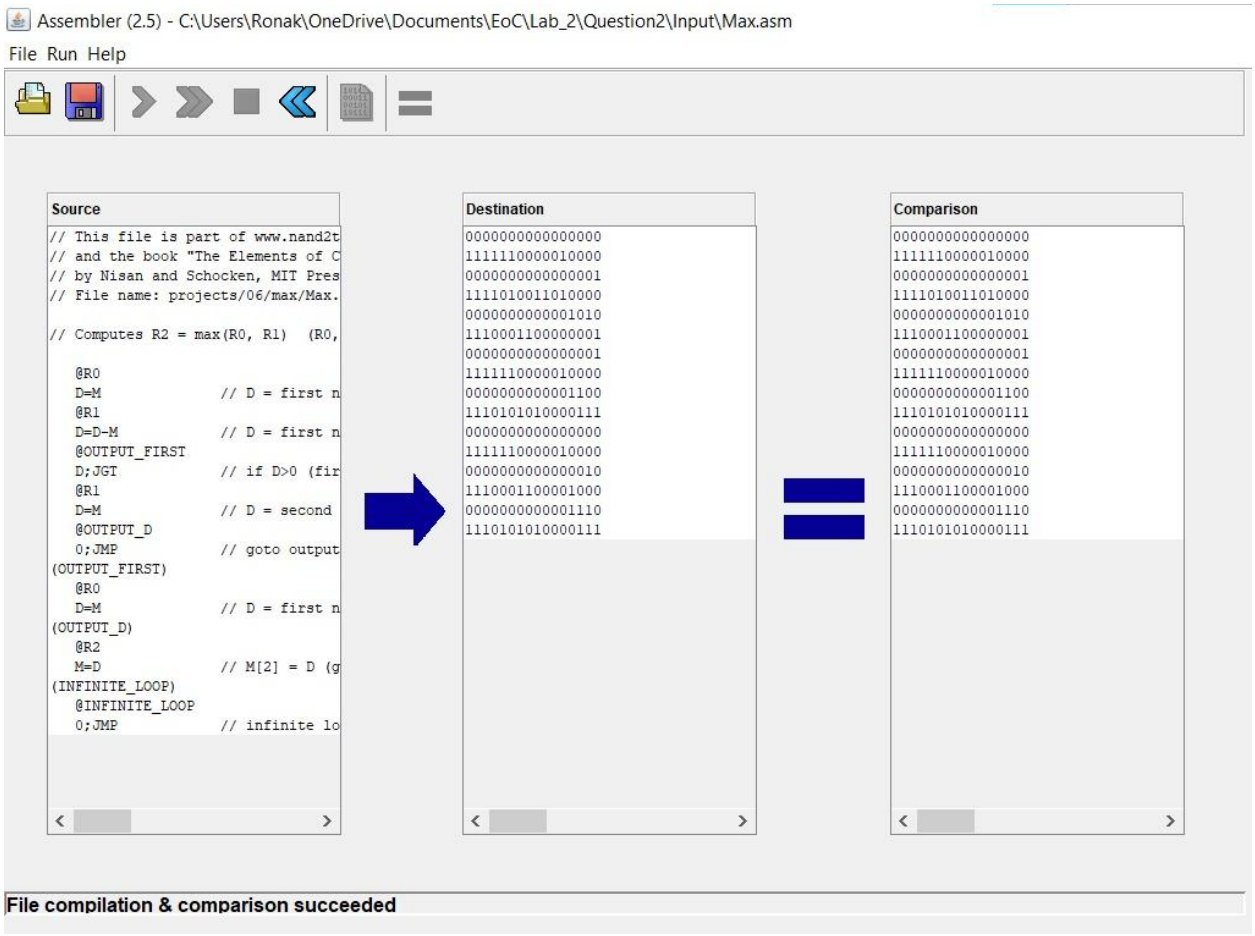
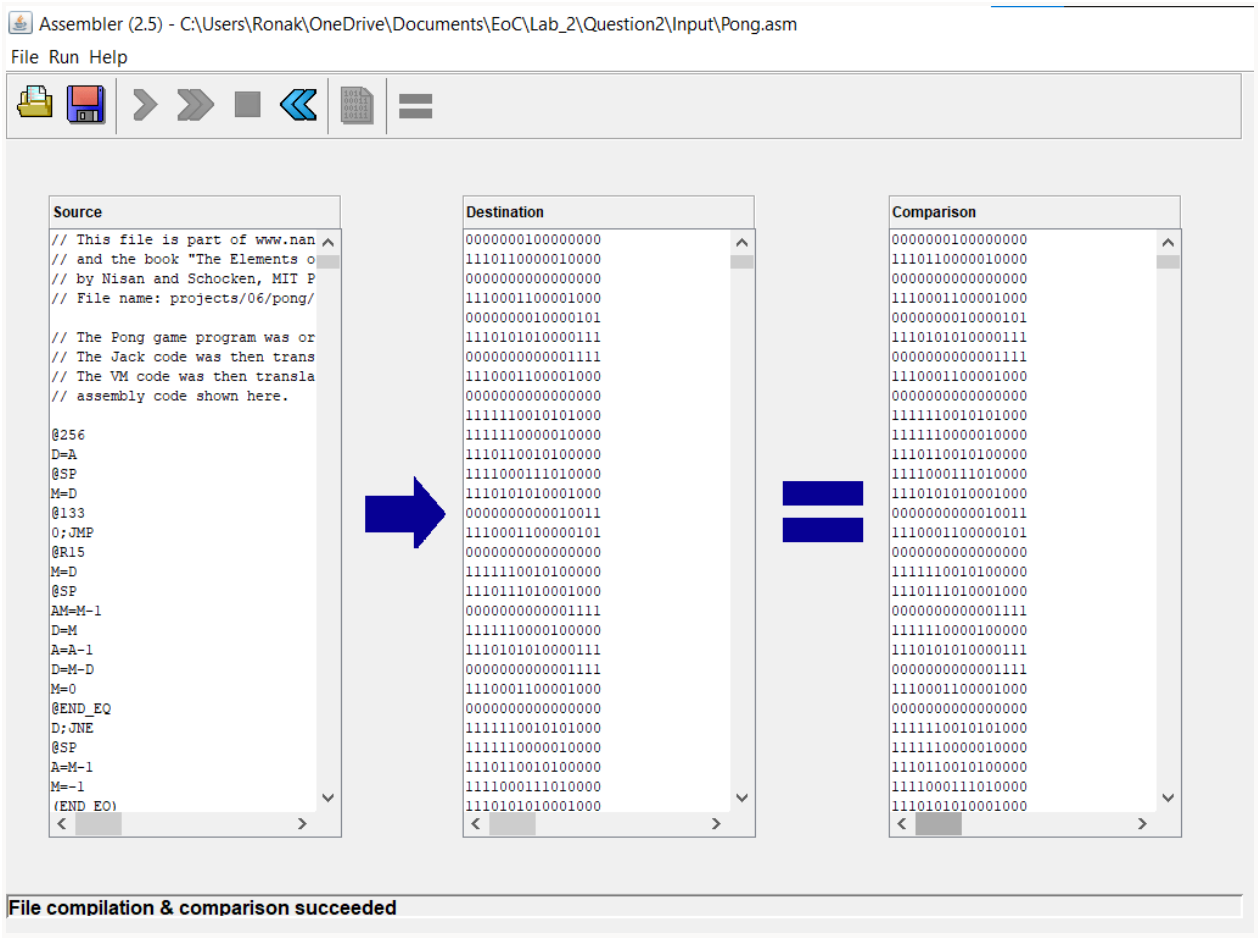
Assignment 2
Hack Assembler

1. Develop a basic assembler that translates Hack assembly programs without symbols into executable Hack binary code (without adding symbol table module).



2. Develop an Assembler that translates Hack assembly programs with symbols into executable Hack binary code (with symbol table module)


Assembler (2.5) - C:\Users\Ronak\OneDrive\Documents\EoC\Lab_2\Question2\Input\Max.asm
File Run Help
Source
// This file is part of www.nand2t
// and the book "The Elements of C
// by Nisan and Schocken, MIT Pres
// File name: projects/06/max/Max.
// Computes R2 = max(R0, R1) (R0,
@R0
D=M // D = first n
@R1
D=D-M // D = first n
@OUTPUT_FIRST
D;JGT // if D>0 (fir
@R1
D=M // D = second
@OUTPUT_D
0;JMP // goto output
(OUTPUT_FIRST)
@R0
D=M // D = first n
(OUTPUT_D)
@R2
M=D // M[2] = D (g
(INFINITE_LOOP)
@INFINITE_LOOP
0;JMP // infinite lo
Destination
0000000000000000
1111110000010000
0000000000000001
1111010011010000
0000000000001010
1110001100000001
0000000000000001
1111110000010000
0000000000001100
1110101010000111
0000000000000000
1111110000010000
0000000000000010
1110001100001000
0000000000001110
1110101010000111
Comparison
0000000000000000
1111110000010000
0000000000000001
1111010011010000
0000000000001010
1110001100000001
0000000000000001
1111110000010000
0000000000001100
1110101010000111
0000000000000000
1111110000010000
0000000000000010
1110001100001000
0000000000001110
1110101010000111
File compilation & comparison succeeded


Assembler (2.5) - C:\Users\Ronak\OneDrive\Documents\EoC\Lab_2\Question2\Input\Pong.asm
File Run Help
Source
// This file is part of www.nan
// and the book "The Elements o
// by Nisan and Schocken, MIT P
// File name: projects/06/pong/
// The Pong game program was or
// The Jack code was then trans
// The VM code was then transla
// assembly code shown here.
@256
D=A
@SP
M=D
@133
0;JMP
@R15
M=D
@SP
AM=M-1
D=M
A=A-1
D=M-D
M=0
@END_EQ
D;JNE
@SP
A=M-1
M=-1
(END_EQ)
Destination
0000000100000000
1110110000010000
0000000000000000
1110001100001000
0000000010000101
1110101010000111
0000000000001111
1110001100001000
0000000000000000
1111110010101000
1111110000010000
1110110010100000
1111000111010000
1110101010001000
0000000000010011
1110001100000101
0000000000000000
1111110010100000
1110111010001000
0000000000001111
1111110000100000
1110101010000111
0000000000001111
1110001100001000
0000000000000000
1111110010101000
1111110000010000
1110110010100000
1111000111010000
1110101010001000
Comparison
0000000100000000
1110110000010000
0000000000000000
1110001100001000
0000000010000101
1110101010000111
0000000000001111
1110001100001000
0000000000000000
1111110010101000
1111110000010000
1110110010100000
1111000111010000
1110101010001000
0000000000010011
1110001100000101
0000000000000000
1111110010100000
1110111010001000
0000000000001111
1111110000100000
1110101010000111
0000000000001111
1110001100001000
0000000000000000
1111110010101000
1111110000010000
1110110010100000
1111000111010000
1110101010001000
File compilation & comparison succeeded