Eric Pereira & Dmitri Piquero

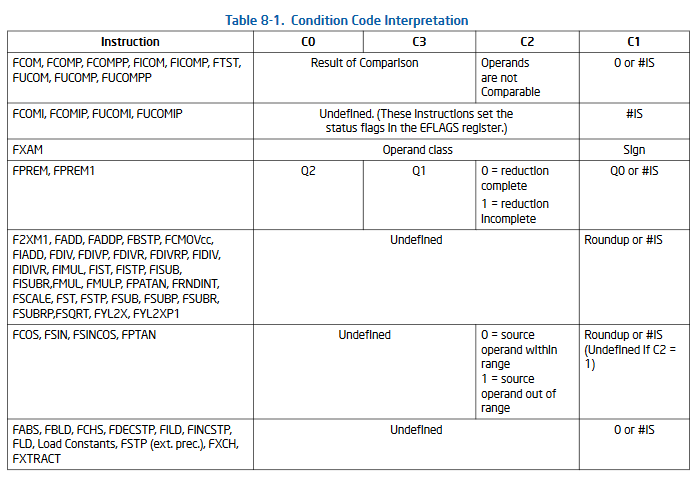
Lab 12

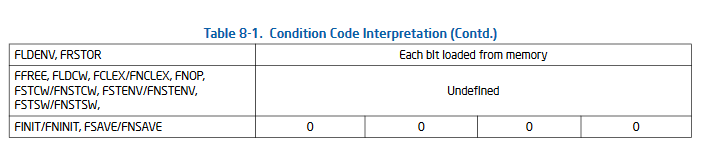
Architecture & Assembly

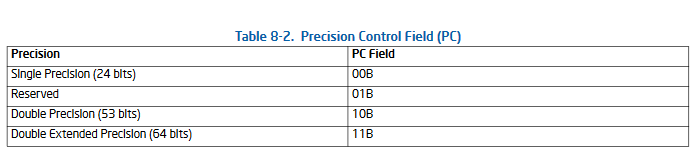
November 26, 2018

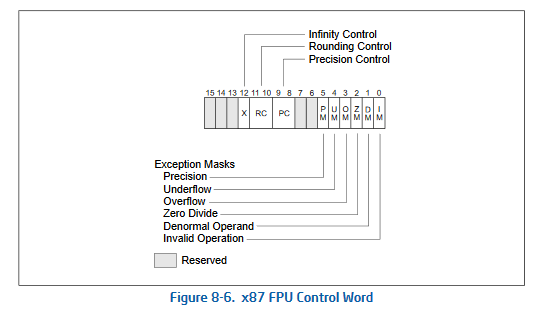
FPU

Part 1.









Part 2.

INCLUDE Irvine32.inc

.data

success BYTE "a happy message",0

\_one REAL4 1.0

\_two REAL4 2.0

.code

main PROC

FINIT

FILD \_one ; \_one should be defined as dword 1

FILD \_two ; .... also load dword \_two

FCOM ; compares \_two, \_one...... cf FCOMI

FNSTSW AX ; no wait for exceptions

SAHF

JNBE label\_success

JMP label\_failure

label\_success:

MOV EDX, OFFSET success

CALL WriteString

; print a happy message

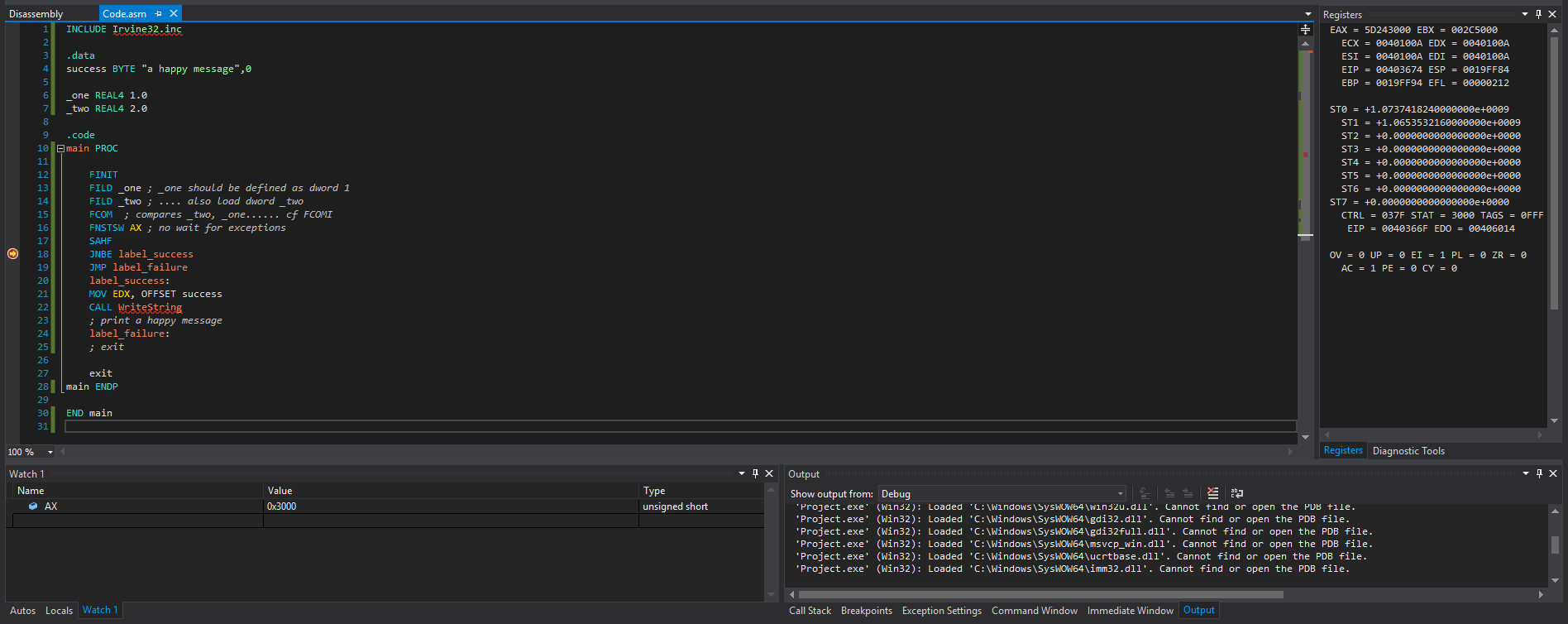
label\_failure:

; exit

exit

main ENDP

END main



Part 3:

Ltext0:

.globl square\_root\_proc

.type square\_root\_proc, @function

.comm ctrlWord, 4

.text

square\_root\_proc:

FINIT

pushl %eax

FILD (%esp)

FSTCW ctrlWord

orw $0b110000000000, ctrlWord

FLDCW ctrlWord

FSQRT

FISTP (%esp) /\* could have used FISTTP \*/

popl %eax

fstcw ctrlWord

andw $0b001111111111, ctrlWord

fldcw ctrlWord

ret