1. If I build the following code (CODE-1) in KEIL Simulator we get four errors which are shown below.  
Why is this error happening. Where as in CODE-2 the program is building without any errors.Research in IF-THEN-ELSE in ARM Assembly and explain the reason for this error

A Clear writeup not more than a page is expected as the answer to this question.  Points will be awarded based on how clear and well explained the write up is. Perfect and technically correct write up given full 100 points.

---------------------------------------------------------------------  
CODE-1  
---------------------------------------------------------------------  
;PRESERVE8  
;thumb  
area appcode, CODE, READONLY  
export \_\_main  
ENTRY  
\_\_main function  
MOV R3, #0x100  
MOV R8, #0x200  
CMP R8, R3 ; do R8 - R3 & updated N & V flags  
ITTTE LT ; or N != V  
MOV R3, #0x100  
MOV R8, #0x200  
MOV R7, #0x200  
MOV R6, #0x200  
stop B stop ; stop program  
endfunc  
end  
stop B stop ; stop program

\*\*\* Using Compiler 'V5.06 update 5 (build 528)', folder: 'C:\Keil\_v5\ARM\ARMCC\Bin'  
Build target 'Target 1'

assembling if-then-else.s...

if-then-else.s(30): error: A1619E: Specified condition is not consistent with previous IT  
if-then-else.s(31): error: A1619E: Specified condition is not consistent with previous IT

if-then-else.s(32): error: A1619E: Specified condition is not consistent with previous IT

if-then-else.s(33): error: A1619E: Specified condition is not consistent with previous IT

".\Objects\asm3.axf" - 4 Error(s), 0 Warning(s).

**ANSWER:**

Code is not working Rather showing error as

1. “**ITTTE LT ; or N != V**” instruction stating simulator that this is comprehensive multiple If /Else statement, where first 3 are “IF” & 4’th is “Else “ condition statement.
2. In other words,
   1. any instruction ( ex”ADD PC , MOV ,PC, any LDM, LDR, or ) which changes flag of instruction “ITTTT” are not permitted in an IT block, it must be out of “ITTTT” block or last instruction of IT block
   2. each instruction inside the IT block must specify a condition code suffix that is either the same or logical inverse as for the other instructions in the block
3. Since followed by statement are not meeting criteria, simulator is showing “ERROR”
4. If I change those statement to for example condition statement , same code will work ( confirmed on simulator)

|  |  |  |
| --- | --- | --- |
| **S No** | **Original statement** | **Suggestive modification** |
| 1 | MOV R3, #0x100 | MOVLT R3, #0x100 |
| 2 | MOV R8, #0x200 | MOVLT R8, #0x200 |
| 3 | MOV R7, #0x200 | MOVLT R7, #0x200 |
| 4 | MOV R6, #0x200 | MOVGE R6, #0x200 |

Answer been verified on Keil Simulator . Attached is modified