Assignment-2

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ARM's IF-THEN-ELSE instruction is used for handling small sequences of conditional code, up to 4 instructions.

Syntax is IT{x{y{z}}} cond

Where x, y, z specifies the condition switches for the second, third and fourth conditions in the IT block respectively.

The condition switch for the second, third and fourth instruction in the IT block can be either T which is then and applies the condition cond to the instruction, or E which is else and applies the inverse condition of cond to the instruction.

The IT instruction makes up to four following instructions conditional. The conditions should be same as the condition in the IT line for 'T' and should be logical inverse of that condition for 'E'.

The instructions in the IT block must specify the condition in the {cond} part of their syntax.

So, in code-1 if we see the instructions in the IT block (four instructions after ITTTE) there are not specified with proper conditions. Hence, we are getting the errors for the four lines of instructions in the IT block.

But in code 2, the instructions in the IT block are specified with proper conditions like LT (the ITTTE condition) for the instructions of T and the logical inverse of LT which is GE for the instructions of E. Therefore, the code can be built without any errors.

For making the first code to run without errors, the IT block (four instructions after ITTTE) must be modified as:

```
MOVLT R3, #0x100
MOVLT R8, #0x200
MOVLT R7, #0x200
MOVGE R6, #0x200
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The first three instructions because the IT instruction here is ITTTE LT which makes the first three instructions corresponding to T and will be executed when If condition is satisfied. Therefore, same condition of LT must be specified for the first three instructions. The fourth instruction correspond to E and will be executed when if condition is not satisfied. Therefore, this instruction should be specified with inverse of condition LT i.e. GE.