CS1021 Tutorial #5 Solution
More Pseudo-code and Flow Control

1 Translating Pseudo-code into ARM Assembly Language

Translate each of the following pseudo-code programs into ARM Assembly Language.

(a) ARM Assembly

```
        CMP     R8, #100
        BLT     endif
        CMP     R9, #10
        BGE endif
        ADD     R8, R8, R9
endif
```

(b) ARM Assembly

```
        CMP     R2, #5
        BEQ     if
        CMP     R2, #15
        BNE endif
if      ADD     R3, R3, #1
endif
```

(c) ARM Assembly

```
        CMP     R3, #'a'
        BEQ     ifvowel
        CMP     R3, #'e'
        BEQ     ifvowel
        CMP     R3, #'i'
        BEQ     ifvowel
        CMP     R3, #'o'
        BEQ     ifvowel
        CMP     R3, 'u'
        BNE     eifvowel
ifvowel
        ADD     R1, R1,#1
eifvowel
```

(d) ARM Assembly

```
1          CMP     R0, #'a'
2          BLO     notlc
3          CMP     R0, #'z'
4          BLS     ifalpha
5  notlc
6          CMP     R0, #'A'
7          BLO     eifalpha
8          CMP     R0, #'Z'
9          BHI  eifalpha
10 ifalpha
11         ADD     R1, R1, #1
12 eifalpha
```

(e) ARM Assembly

```
1          CMP     R6, #'+'
2          BNE     elsifmns
3          ADD     R0, R7, R8
4          B       endifop
5  elsifmns
6          CMP     R6, #'-'
7          BNE     elsifmul
8          SUB     R0, R7, R8
9          B       endifop
10 elsifmul
11         CMP     R6, #'*'
12         BNE     elsop
13         MUL     R0, R7, R8
14         B       endifop
15 elsop
16         MOV     R0, #0
17 endifop
```