

嵌入式系统导论实验报告

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第14周

Question1

After an addition of two unsigned numbers, the C bit is set. What does it mean?

表示条件的标志码：

Bit	Name	加减之后表示的意义
N	negative	结果是负数
Z	zero	结果是0
V	overflow	有符号数字计算溢出
C	carry	无符号位计算溢出

所以在这里，两个无符号数字做和，此时C标记码被置为1，意为当前的做和操作出现溢出情况，超出32位。

Question2

After an addition of two signed numbers, the V bit is set. What does it mean?

有上文得知，V位被置意为当前的做和操作已经溢出——是有符号数字做和溢出。

Question3

After a subtraction of two unsigned numbers, the C bit is set. What does it mean?

两个无符号数字进行减法运算，如果C位置为0，说明当前的减法的计算结果下溢。

Question4

After a subtraction of two signed numbers, the V bit is set. What does it mean?

在有符号位数字计算之后，如果当前的计算结果32位结构不能容纳，则V置为1，意为下溢。

Question5

Assume there are two 32-bit variables in RAM memory called In and Out. Write C code that sets Out equal to In plus 1.

C语言实现“输出 = 输入 + 1”，比较直观：

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`OUT = IN + 1;`

Question6

Assume there are two 32-bit variables in RAM memory called In and Out. Write assembly code that sets Out equal to In plus 1.

汇编语言实现 `OUT = IN + 1` 关系如下：

```
1  LDR R0, =IN ;将IN在内存中的地址载入寄存器R0中
2  LDR R1, [R0] ;将R0寄存器中的地址在内存中对应的值赋值给寄存器R1
3  ADD R1, R1, 1
4  LDR R2, =OUT ;将OUT在内存中的地址载入到寄存器R2中
5  STR R1, [R2] ;将寄存器R1中的数字传输到R2对应的内存中去
```