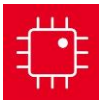




模块 3

测验：ARM Cortex M 架构



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问题 1 寄存器使用

简要介绍以下寄存器是如何使用的（假设使用 AAPCS 标准）

R0-R3,R12
R4-R11
R13
R14
R15

问题 2 Condition code bits 条件码位

简要介绍处理器是如何使用条件码位的

N
Z
V
C

问题 3 条件判断

写一个汇编函数，判断一个 ASCII 字符的类型，如何该字符为十六进制数时返回真（R0=1），否则返回假（R0=0）。ASCII 码中十六进制数位于 0x30 到 0x39，以及 0x41 到 0x46 之间。输入字符由 R0 传入，返回参数由 R0 传出。

问题 4 条件判断

写一个 C 语言函数，返回一个数字的绝对值。输入为有符号数，但输出为无符号数。输入参数由 R0 传入，返回参数通过 R0 传出。

问题 5 计算

写一个 C 语言函数，用来计算下面的等式

$$y = 1000/x - (3*x+1)/4$$

假设 x 和 y 都是 32 位数字。当输入值为 0 时返回 y = 0x7FFFFFFF ($2^{31}-1$)，其他情况下您可以忽略溢出的情况。输入参数 x 通过 R0 传入，返回参数 y 通过 R0 传出。

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