**关于测试单周期CPU的简单方法**

**（特别说明：本表每个同学都必须建立，检查实验时，必须提供！）**

1、测试程序段

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **地址** | **汇编程序** | **指令代码** | | | | | |
| **op（6）** | **rs(5)** | **rt(5)** | **rd(5)/immediate (16)** | **16进制数代码** | |
| **0x00000000** | addiu $1,$0,-2 |  |  |  |  | **=** |  |
| **0x00000004** | addiu $2,$0,8 |  |  |  |  |  |  |
| **0x00000008** | add $1,$1,$2 |  |  |  |  |  |  |
| **0x0000000C** | sub $1,$1,$2 |  |  |  |  |  |  |
| **0x00000010** | andi $1,$1,15 |  |  |  |  |  |  |
| **0x00000014** | and $1,$1,$2 |  |  |  |  |  |  |
| **0x00000018** | ori $1,$1,6 |  |  |  |  |  |  |
| **0x0000001C** | addiu $3,$0,1 |  |  |  |  |  |  |
| **0x00000020** | or $1,$2,$3 |  |  |  |  |  |  |
| **0x00000024** | sll $1,$1,1 |  |  |  |  |  |  |
| **0x00000028** | slti $3,$2,8 |  |  |  |  |  |  |
| **0x0000002C** | slti $4,$2,9 |  |  |  |  |  |  |
| **0x00000030** | addiu $1,$1,-18 |  |  |  |  |  |  |
| **0x00000034** | addiu $2,$2,-8 |  |  |  |  |  |  |
| **0x00000038** | addiu $3,$3,-0 |  |  |  |  |  |  |
| **0x0000003C** | addiu $4,$4,-1 |  |  |  |  |  |  |
| **0x00000040** | or $5,$1,$2 |  |  |  |  |  |  |
| **0x00000044** | or $5,$5,$3 |  |  |  |  |  |  |
| **0x00000048** | or $5,$5,$4 |  |  |  |  |  |  |
| **0x0000004C** | addiu $0,$0,-2 |  |  |  |  |  |  |
| **0x00000050** | beq $5,$0,1 |  |  |  |  |  |  |
| **0x00000054** | halt |  |  |  |  |  |  |
| **0x00000058** | addiu $1,$0,0 |  |  |  |  |  |  |
| **0x0000005C** | addiu $2,$0,-1 |  |  |  |  |  |  |
| **0x00000060** | sw $2,0($1) |  |  |  |  |  |  |
| **0x00000064** | lw $1,0($1) |  |  |  |  |  |  |
| **0x00000068** | bne $1,$2,5 |  |  |  |  |  |  |
| **0x0000006C** | bltz $1,1 |  |  |  |  |  |  |
| **0x00000070** | halt |  |  |  |  |  |  |
| **0x00000074** | j 0x7C |  |  |  |  |  |  |
| **0x00000078** | halt |  |  |  |  |  |  |
| **0x0000007C** | halt |  |  |  |  |  |  |
| **0x00000080** | halt |  |  |  |  |  |  |

1、将**指令代码初始化到指令存储器**中，直接写入。

1. 初始化PC的值，也就是以上程序段首地址PC=**0x00000000**，以上程序段从**0x00000000**地址开始存放。
2. 运行Xilinx Vivado进行仿真，看波形。