**Trasarea execuției programului de test pentru MIPS32**

Valorile se completează în hexazecimal așa cum trebuie să apară pe SSD. Succesiunea pașilor reprezintă ordinea de execuție în timp la apăsarea butonului ENable. **Pasul 0 corespunde stării inițiale a circuitului (PC = 0), iar** **pasul *N* caracterizează starea după apăsarea de *N* ori a butonului ENable**. Inițial registrele vor avea valoarea 0 (care se atribuie automat în lipsa unei inițializări explicite a RF), iar memoria de date RAM poate fi inițializată cu valori dorite. Tabelul se completează pentru tot programul sau, dacă are buclă, până la finalul primei iterații. *Buclă = revenirea execuției la o instrucțiune care a mai fost executată anterior.*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pas** | **SW(7:5)** | "000" | "001" | "010" | "011" | "100" | "101" | "110" | "111" | **De completat numai pentru instrucțiuni de salt** | |
| **Instr** (*în asamblare*) | **Instr** (*hexa*) | **PC+4** | **RD1** | **RD2** | **Ext\_Imm** | **ALURes** | **MemData** | **WD** | **BranchAddr** | **JumpAddr** |
| 0 | LW $t0, 4($zero) | X"8c080004" | X"00000004" | X"00000000" | X"00000005" | X"00000004" | X"00000004" | X"00000005" | X"00000005" |  |  |
| 1 | ADDI $t1, $zero, 0 | X"20090000" | X"00000008" | X"00000000" | X"00000000" | X"00000000" | X"00000000" | X"00000002" | X"00000000" |  |  |
| 2 | ADDI $t2, $zero, 8 | X"200a0008" | X"0000000C" | X"00000000" | X"00000008" | X"00000008" | X"00000008" | X"00000007" | X"00000008" |  |  |
| 3 | BEQ $t0, $zero, 10 | X"1100000a" | X"00000010" | X"00000005" | X"00000000" | X"0000000a" | X"00000005" | X"00000005" | X"00000005" | X"00000038" | X"04000028" |
| 4 | LW $t3, 0($t2) | X"8d4b0000” | X"00000014" | X"00000008" | X"00000007" | X"00000000" | X"00000008" | X"00000007" | X"00000007" |  |  |
| 5 | SRA $t4, $t3, 31 | X"016067c7" | X"00000018" | X"00000007" | X"00000000" | X"000067c7" | X"00000000" | X"00000002 " | X"00000000" |  |  |
| 6 | BEQ $t4, $zero, 1 | X"11800001" | X"0000001C" | X"00000000" | X"00000000" | X"00000001" | X"00000000" | X"00000002 " | X"00000000" | X"00000020" | X"06000004" |
| 7 | J 11 | X"0800000b" | X"00000020" | X"00000000" | X"00000000" | X"0000000b" | X"00000000" | X"00000000" | X"00000000" | X"0000004c" | X"0000002c" |
| 8 | ANDI $t5, $t3, 1 | X"316d0001" | X"00000024" | X"00000007" | X"00000001" | X"00000001" | X"00000001" | X"00000002" | X"00000001" |  |  |
| 9 | BEQ $t5, $zero, 1 | X"11a00001" | X"00000028" | X"00000001" | X"00000000" | X"00000001" | X"00000001 " | X"00000002 " | X"00000001" | X"0000002c" | X"06800004" |
| 10 | ADDI $t1, $t1, 1 | X"21290001" | X"0000002C" | X"00000000" | X"00000000" | X"00000001" | X"00000001 " | X"00000002" | X"00000001" |  |  |
| 11 | ADDI $t2, $t2, 4 | X"214a0004" | X"00000030" | X"00000008" | X"00000008" | X"00000004" | X"0000000c" | X"fffffffd" | X"0000000c" |  |  |
| 12 | ADDI $t0, $t0, -1 | X"2108ffff" | X"00000034" | X"00000005" | X"00000005" | X"ffffffff" | X"00000004" | X"00000005" | X"00000004" |  |  |
| 13 | J 3 | X"08000003" | X"00000038" | X"00000000" | X"00000000" | X"00000003" | X"00000000" | X"00000002" | X"00000000" | X"00000044" | X"0000000c" |
| 14 | SW $t1, 0($zero) | X"ac090000" | X"0000003c" | X"00000000" | X"00000002" | X"00000000" | X"00000000" | X"00000002 " | X"00000000" |  |  |
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URL: <https://drive.google.com/file/d/1OgoST1-tEe1cbUdNk_VKr6NHq3zVfs83/view?usp=sharing>