**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.*

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| **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 | add $1, $0, $0 | 0000\_0820 | 4 | 0 | 0 | 00000820 | 0 | 0 | 0 |  |  |
| 1 | addi $4, $0, 10 | 0404\_000A | 8 | 0 | 0 | 0000000A | 0000000A | 00000001 | 0000000A |  |  |
| 2 | add $2, $0, $0 | 0000\_1020 | 12 | 0 | 0 | 00001020 | 0 | 2 | 0 |  |  |
| 3 | add $5, $0, $0 | 0000\_2820 | 10 | 0 | 0 | 00002820 | 0 | 0 | 0 | 9 |  |
| 4 | beq $1, $4, 9 | 1024\_0009 | 14 | 1 | 2 | 00000009 | 9 | 0 | 9 |  |  |
| 5 | lw $3, 40($2) {1} | 0843\_0028 | 18 | 0 | 0 | 00000028 | 28 | 1 | 1 |  |  |
| 6 | lw $6, 40($2) | 0846\_0028 | 1c | 0 | 0 | 00000028 | 28 | 1 | 1 |  |  |
| 7 | addi $7, $0, 1 | 0407\_0001 | 20 | 0 | 0 | 00000001 | 1 | 0 | 1 |  |  |
| 8 | and $6, $6, $7 | 00C7\_3024 | 24 | 1 | 1 | 00003824 | 1 | 1 | 1 |  |  |
| 9 | beq $7, $6, 1 | 10E6\_0001 | 28 | 1 | 1 | 00000001 | 0 | 0 | 0 | 1 |  |
| 10 | addi $1, $1, 1 | 0421\_0001 | 30 | 0 | 0 | 00000001 | 1 | 0 | 1 |  |  |
| 11 | addi $2, $2, 4 | 0442\_0004 | 34 | 0 | 0 | 00000004 | 4 | 0 | 4 |  |  |
| 12 | j 4 | 1C00\_0004 | 38 | x | x | x | x | x | x |  | 4 |

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| 13 | beq $1, $4, 9 | 1024\_0009 | 14 |  |  |  |  |  |  | 9 |  |
| 14 | lw $3, 40($2) {4} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 15 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 16 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 17 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 18 | beq $7, $6, 1 | 10E6\_0001 | 28 |  |  |  |  |  |  | 1 |  |
| 19 | add $5, $5, $3 | 00A3\_2820 | 2c |  |  |  | 4 |  | 4 |  |  |
| 20 | addi $1, $1, 1 | 0421\_0001 | 30 |  |  |  |  |  |  |  |  |
| 21 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 22 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |
| 23 | beq $1, $4, 9 | 1024\_0009 |  |  |  |  |  |  |  | 9 |  |
| 24 | lw $3, 40($2) {5} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 25 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 26 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 27 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 28 | beq $7, $6, 1 | 10E6\_0001 |  |  |  |  |  |  |  | 1 |  |
| 28 | addi $1, $1, 1 | 0421\_0001 |  |  |  |  |  |  |  |  |  |
| 29 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 30 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |
| 31 | beq $1, $4, 9 | 1024\_0009 |  |  |  |  |  |  |  | 9 |  |
| 32 | lw $3, 40($2) {7} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 33 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 34 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 35 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 36 | beq $7, $6, 1 | 10E6\_0001 |  |  |  |  |  |  |  | 1 |  |
| 37 | addi $1, $1, 1 | 0421\_0001 |  |  |  |  |  |  |  |  |  |
| 38 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 39 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |
| 40 | beq $1, $4, 9 | 1024\_0009 |  |  |  |  |  |  |  | 9 |  |
| 41 | lw $3, 40($2) {8} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 42 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 43 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 44 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 45 | beq $7, $6, 1 | 10E6\_0001 |  |  |  |  |  |  |  | 1 |  |
| 46 | add $5, $5, $3 | 00A3\_2820 |  |  |  |  | C |  |  |  |  |
| 47 | addi $1, $1, 1 | 0421\_0001 |  |  |  |  |  |  |  |  |  |
| 48 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 49 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |
| 50 | beq $1, $4, 9 | 1024\_0009 |  |  |  |  |  |  |  | 9 |  |
| 51 | lw $3, 40($2) {6} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 52 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 53 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 54 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 55 | beq $7, $6, 1 | 10E6\_0001 |  |  |  |  |  |  |  | 1 |  |
| 56 | add $5, $5, $3 | 00A3\_2820 |  |  |  |  | 12 |  |  |  |  |
| 57 | addi $1, $1, 1 | 0421\_0001 |  |  |  |  |  |  |  |  |  |
| 58 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 59 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |
| 60 | beq $1, $4, 9 | 1024\_0009 |  |  |  |  |  |  |  | 9 |  |
| 61 | lw $3, 40($2) {2} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 62 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 63 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 64 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 65 | beq $7, $6, 1 | 10E6\_0001 |  |  |  |  |  |  |  | 1 |  |
| 66 | add $5, $5, $3 | 00A3\_2820 |  |  |  |  | 14 |  |  |  |  |
| 67 | addi $1, $1, 1 | 0421\_0001 |  |  |  |  |  |  |  |  |  |
| 68 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 69 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |
| 70 | beq $1, $4, 9 | 1024\_0009 |  |  |  |  |  |  |  | 9 |  |
| 71 | lw $3, 40($2) {39} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 72 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 73 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 74 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 75 | beq $7, $6, 1 | 10E6\_0001 |  |  |  |  |  |  |  | 1 |  |
| 76 | addi $1, $1, 1 | 0421\_0001 |  |  |  |  |  |  |  |  |  |
| 77 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 78 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |
| 79 | beq $1, $4, 9 | 1024\_0009 |  |  |  |  |  |  |  | 9 |  |
| 80 | lw $3, 40($2) {52} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 81 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 82 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 83 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 84 | beq $7, $6, 1 | 10E6\_0001 |  |  |  |  |  |  |  | 1 |  |
| 85 | add $5, $5, $3 | 00A3\_2820 |  |  |  |  | 48 |  |  |  |  |
| 86 | addi $1, $1, 1 | 0421\_0001 |  |  |  |  |  |  |  |  |  |
| 87 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 88 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |
| 89 | beq $1, $4, 9 | 1024\_0009 |  |  |  |  |  |  |  | 9 |  |
| 90 | lw $3, 40($2) {11} | 0843\_0028 |  |  |  |  |  |  |  |  |  |
| 91 | lw $6, 40($2) | 0846\_0028 |  |  |  |  |  |  |  |  |  |
| 92 | addi $7, $0, 1 | 0407\_0001 |  |  |  |  |  |  |  |  |  |
| 93 | and $6, $6, $7 | 00C7\_3024 |  |  |  |  |  |  |  |  |  |
| 94 | beq $7, $6, 1 | 10E6\_0001 |  |  |  |  |  |  |  | 1 |  |
| 95 | addi $1, $1, 1 | 0421\_0001 |  |  |  |  |  |  |  |  |  |
| 96 | addi $2, $2, 4 | 0442\_0004 |  |  |  |  |  |  |  |  |  |
| 97 | j 4 | 1C00\_0004 |  |  |  |  |  |  |  |  | 4 |

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| 98 | beq $1, $4, 9 | 1024\_0009 | 14 |  |  |  |  |  |  | 9 |  |
| 99 | sll $5, $5, 2 | 0005\_28A2 | 3c |  |  |  | 120 |  |  |  |  |
| 100 | sw $5, 80($0) | 0C05\_0050 | 44 |  |  |  |  | 120 | 120 |  |  |
| 101 | lw $15, 80($0) | 080F\_0050 |  |  |  |  |  |  |  |  |  |
| 102 | add $15, $15, $0 | 01E0\_7820 |  |  |  |  |  |  |  |  |  |