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| Compute the sum of 5,4,3,2,1  We have 3 place holders  D= data  M = memory location  A= value/constant  We need  A counter that begins at 5 and decreases down to 0  A location to store value accumulated (sum)   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Intr | A | M | D | sum | Ctr | | set | 5 |  |  | 0 | ctr=5\* | |  |  | ctr=5  sum=sum+ctr  ctr=ctr-1 | 5 | 5  (0+5) | ctr=4 | |  |  | ctr=4  sum=sum+ctr  ctr=ctr-1 | 4 | 9  (5+4) | ctr=3 | |  |  | ctr=3  sum=sum+ctr  ctr=ctr-1 | 3 | 12  (9+3) | ctr=2 | |  |  | ctr=2  sum=sum+ctr  ctr=ctr-1 | 2 | 14  (12+2) | ctr=1 | |  |  | ctr=1  sum=sum+ctr  ctr=ctr-1 | 1 | 15  (14+1) | ctr=0 | |  |  | i=0 | 0 |  |  | | //Pseudocode is a compact and informal high-level description of a computer programming algorithm  //that uses the structural conventions of a programming language, but is intended for human reading rather than machine reading.  **// Write the pseudocode for the algorithm on the left (Add 5+...+1). Generally it compute the sum of a number from the upper bound (5) to the lower bound (1)**  Declare the initial addend, i, with initial value of 5  Declare a sum, sum, with initial value of 0  LOOP  Load memory location i  Assign value of i to Data  If Data is equal to 0, jump to END; if not, continue to next instruction  Load memory location sum  Add Data to sum  Load memory location i  Decrement i by 1  Jump to LOOP  END  Load memory location END  Jump to a halt |
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