R1 takes the number that will have its ones counted. R2 is the counter that contains the number of ones in R1.

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| --- | --- | --- |
| Comment/Remark | HEX | Assembly Instruction |
| R1 lower immediate has the value 0xf | 7909 | ORI R1,R0,0XF |
| R2 has the value 0 | 1000 | ADD R2,R0,R0 |
| R3 lower immediate has the value 0X1 | 0b09 | ORI R3,R0,0X1 |
| Anding R1 with R3 and store the value in R6 | b321 | AND R6,R1,R3 |
| Comparing R6 value with R0 and branch to next if true(R6==R0?) | 10d2 | BEQ R6,R0,next |
| Increment the value of R2 by 1 and store it in R2 itself | 0a44 | ADDI R2,R2,1 |
| R1 value multiplied by 2 and stored in R1 itself | 092d | SRLI R1,R1,1 |
| Comparing R1 and R0 values and branches to (for) if true (R1!=R0?) | e033 | BNE R1, R0,for |
| Jump to terminate | 0018 | j terminate |

“Count Ones” instructions