|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| R- format | 4bit | 3bit | 3bit | 3bit | 3bit |
| Add | 0111(7) | Read1 | Read2 | Dest | EMPTY |
| Sub | 1001(9) | Read1 | Read2 | Dest | EMPTY |
| Or | 1000(8) | Read1 | Read2 | Dest | EMPTY |
| And | 1010(A) | Read1 | Read2 | Dest | EMPTY |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| I-format | 4bit | 3bit | 3bit | 4bit | 2bit |
| Addi | 0101(5) | Read | Dest | const | EMPTY |
| Subi | 1011(B) | Read | Dest | const | EMPTY |
| Ori | 0110(6) | Read | Dest | const | EMPTY |
| Andi | 1100(C) | Read | Dest | const | EMPTY |
| Lw | 0001(1) | MemBase | WriteReg | Offset-const | EMPTY |
| Sw | 0010(2) | MemBase | ReadReg | Offset-const | EMPTY |
| beq | 0011(3) | Read1 | Read2 | Pc-offset-const | |

|  |  |  |  |
| --- | --- | --- | --- |
| JUMP | 4bit | 8bit | 4bit |
| j | 0100(8) | Address-const | EMPTY |

Addi r1=r0+3 : 504C output: 3

Addi r2=r1+5 : 5294 output: 8

Add r3=r1+r2 : 7298 output: 11

Sub r4 = r3-r2 : 96A0 output: 3

Subi r5 = r4-2 : B948 output: 1

Ori r5 = r4|2 : 6948 output: 3

AND r6 = r4&r5 : A970 output: 3

Andi r7 = r6 &1 : CDC4 output: 1

Sw 1(0)=r2 : 2084 output: 8

Lw r1 = 1(0) 1044 r1=8 (writedata)

OR r7 = r5|r6 : 8bb8 output: 3

Beq r0,r1->5 : 3045 NO JUMP

Addi r1=r0+0 : 5040 output: 0

Beq r0,r1->5 : 3045 branch+5

J 22 : 4220 output: jump to 22