1. Add.type

Add.s32 rd,rs,rt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1000000000 | Rs 10 | Rt 10 | Rd 10 |  |

Add.s32 rt, rs, immediate

|  |  |  |  |
| --- | --- | --- | --- |
| 1000000001 | Rs 10 | Rt 10 | Immediate 32 |

Add.f32 rd, rs, rt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1000000010 | rs | rt | rd |  |

Add.f32 rt, rs, immediate

|  |  |  |  |
| --- | --- | --- | --- |
| 1000000011 | rs | rd | immediate |

1. Sub.type

sub.s32 rd, rs, rt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1100000000 | rs 10 | rt 10 | Rd 10 |  |

sub.s32 rt, rs, immediate

|  |  |  |  |
| --- | --- | --- | --- |
| 1100000001 | rs 10 | rt 10 | Immediate 32 |

sub.f32 rd, rs, rt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1100000010 | rs | rt | rd |  |

sub.f32 rt, rs, immediate

|  |  |  |  |
| --- | --- | --- | --- |
| 1100000011 | rs | rt | immediate |

1. Mul.type

mul.s32 rd, rs, rt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1110000000 | Rs 10 | Rt 10 | Rd 10 |  |

mul.s32 rt, rs, immediate

|  |  |  |  |
| --- | --- | --- | --- |
| 1110000001 | Rs 10 | Rt 10 | Immediate 32 |

mul.f32 rd, rs, rt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1110000010 | rs | rt | rd |  |

mul.f32 rt, rs, immediate

|  |  |  |  |
| --- | --- | --- | --- |
| 1110000011 | rs | rt | immediate |

1. Abs.type

Abs.s32 rt, rs

|  |  |  |  |
| --- | --- | --- | --- |
| 1111000000 | rs | rt |  |

Abs.f32 rt, rs

|  |  |  |  |
| --- | --- | --- | --- |
| 1111000001 | rs | rt |  |

1. Neg.type

neg.s32 rt, rs

|  |  |  |  |
| --- | --- | --- | --- |
| 1111100000 | rs | rt |  |

neg.f32 rt, rs

|  |  |  |  |
| --- | --- | --- | --- |
| 1111100001 | rs | rt |  |

1. Min.type

min.s32 rd, rs, rt

|  |  |  |  |
| --- | --- | --- | --- |
| 1111110000 | rs | rt | rd |

min.f32 rd, rs, rt

|  |  |  |  |
| --- | --- | --- | --- |
| 1111110010 | rs | rt | rd |

1. Max.type

max.s32 rd, rs, rt

|  |  |  |  |
| --- | --- | --- | --- |
| 1111111000 | rs | rt | rd |

max.f32 rd, rs, rt

|  |  |  |  |
| --- | --- | --- | --- |
| 1111111001 | rs | rt | rd |

1. not.type

not.b32 rt, rs

|  |  |  |  |
| --- | --- | --- | --- |
| 1000000100 | rs | rt |  |

1. and.type

and.b32 rd, rs, rt

|  |  |  |  |
| --- | --- | --- | --- |
| 1000001000 | rs | rt | rd |

1. or.type

or.b32 rd, rs, rt

|  |  |  |  |
| --- | --- | --- | --- |
| 1000001100 | rs | rt | rd |

1. sll.type

sll.b32 rd, rs, rt

|  |  |  |  |
| --- | --- | --- | --- |
| 1000010000 | rs | rt | rd |

rd = rs << rt

1. St.shared（不区分，都是32位）

sw.shared rt, rs, immediate

|  |  |  |  |
| --- | --- | --- | --- |
| 1010000000 | rs | rt | immediate |

rt->[rs+immediate]

1. Ld.shared

lw.shared rt, rs, immediate

|  |  |  |  |
| --- | --- | --- | --- |
| 1010000001 | rs | rt | immediate |

rt <-[rs+immediate]

1. Bar.sync

Bar.sync d

|  |  |
| --- | --- |
| 1111111110 | d |

**ALU运算功能表**

|  |  |  |
| --- | --- | --- |
| 操作码 | 功能 | 描述 |
| 00000 | Y = A + B | S32加 |
| 00001 | Y = A + B | F32 加 |
| 00010 | Y = A - B | S32 减 |
| 00011 | Y = A - B | F32 减 |
| 00100 | Y = A \* B | S32 乘 |
| 00101 | Y = A \* B | F32 乘 |
| 00110 | Y = abs(A) | S32 绝对值 |
| 00111 | Y = fabs(A) | F32 绝对值 |
| 01000 | Y = -A | S32 相反数 |
| 01001 | Y = -A | F32的相反数 |
| 01010 | Y = max(A,B) | S32 大数 |
| 01011 | Y = max(A,B) | F32 大数 |
| 01100 | Y = min(A,B) | S32 小数 |
| 01101 | Y = min(A,B) | F32 小数 |
| 10000 | Y = ~A | B32 逻辑非 |
| 10001 | Y = A & B | 逻辑与 |
| 10010 | Y = A | B | 逻辑或 |
| 10011 | Y = A << B | A左移B位 |