**MIPS Instructions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **R-Type** | | | **opcode** | **rs** | **rt** | **rd** | **shamt** | **funct** |
| **(6-bits)** | **(5-bits)** | **(5-bits)** | **(5-bits)** | **(5-bits)** | **(6-bits)** |
| 1 | add | add | 000000 |  |  |  |  | 100000 |
| 2 | subtract | sub | 000000 |  |  |  |  | 100010 |
| 3 | and | and | 000000 |  |  |  |  | 100100 |
| 4 | or | or | 000000 |  |  |  |  | 100101 |
| 5 | set less than | slt | 000000 |  |  |  |  | 101010 |
| 6 | shift left logical | sll | 000000 |  |  |  |  | 000000 |
| 7 | shift right logical | srl | 000000 |  |  |  |  | 000010 |
| 8 | jump register | jr | 000000 |  |  |  |  | 001000 |
|  |  |  |  |  |  |  |  |  |
| **I-Type** | | | **opcode** | **rs** | **rt** | **2’s complement immediate** | | |
| **(6-bits)** | **(5-bits)** | **(5-bits)** | **(16-bits)** | | |
| 9 | Load word | lw | 100011 |  |  |  |  |  |
| 10 | Store word | sw | 101011 |  |  |  |  |  |
| 11 | Branch if equal | beq | 000100 |  |  |  |  |  |
| 12 | Add immediate | addi | 001000 |  |  |  |  |  |
| 13 | or immediate | ori | 001101 |  |  |  |  |  |
| 14 | Branch if not equal | bne | 000101 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **J-Type** | | | **opcode** | **Jump target** | | | | |
| **(6-bits)** | **(26-bits)** | | | | |
| 15 | jump | j | 000010 |  | | | | |
|  |  |  |  |  | | | | |