**OUR NEW CUSTOM INSTRUCTION:**

**R-TYPE LOAD**

In the normal MIPS instruction set architecture, we always felt like we suffered from the lack of a load instruction that takes the value in a specified register as its offset value. The existence of such instruction would make iterating through arrays in loops much easier. Hence, we present R-Type Load: the ultimate instruction that simplifies traversals in arrays like never seen before.

**Machine Code:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **111111** | **00000** | **00100** | **00000** | **00000** | **00000** |
| opcode | rs: register that contains the base address | rd: register that contains the offset value | rt: write register | shamt: shift amount (always 0 for this instruction) | funct: (always 0 in 16-bit MIPS) |

**MIPS Assembly:**

**myIns $0, $4, $0**

This code takes the memory base address from $0, offset from $4 and the address of the write register from $0, and loads the desired value into the write register.