

Rain VM Code Format

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In Rain VM, each word is composed of 4 bytes. Words are represented in big-endian format.

There are 32 registers.

1. How programs are executed

The first byte of an input program denotes the *byte version*. There is a correspondence between byte versions and *dominant versions*.

Byte Version	Dominant Version
0	unused
1	0.1.0

If the dominant version of the first byte does not match the version of Rain VM, the execution of the program halts.

After passing the version check, then the body of the program is executed. The first byte of the body contains an opcode. An opcode is the 5 most significant bits. Currently, the available opcodes are 0, indicating “move” instruction, 1, indicating “halt” instruction, 2, indicating “add” instruction, and 3, indicating “bnz” (*branch if not zero*) instruction. *The result register*, R0, is a special register whose content is treated as the output of the execution. Reading instructions until reaching a “halt” instruction, and then the execution ends successfully.