**Assembly Syntax For The 8-Bit Processor**

| **Instruction** | **OpCode** | **Description** |
| --- | --- | --- |
| NOP | 0x00 | No operation. Fetches the next operation. |
| HALT | 0x01 | Stops the computer clock. |
| LDA NUM | 0x02 | Loads register A with the given value. |
| LDA [ADDR] | 0x03 | Loads register A with the value stored in the given memory address. |
| STA [ADDR] | 0x04 | Stores the register A value in the given memory address. |
| LDB NUM | 0x05 | Loads register B with the given value. |
| LDB [ADDR] | 0x06 | Loads register B with the value stored in the given memory address. |
| STB [ADDR] | 0x07 | Stores the register B value in the given memory address. |
| ADD NUM | 0x08 | Adds the given value with the value stored in register A and stores the sum result in register A. The given number will be stored in register B. |
| ADD [ADDR] | 0x09 | Adds the value stored in the given memory address with the value stored in register A. Stores the sum result in register A. |
| SUB NUM | 0x0A | Subtracts the given value with the value stored in register A and stores the subtraction result in register A. The given number will be stored in register B. |
| SUB [ADDR] | 0x0B | Subtracts the value stored in the given memory address with the value stored in register A. Stores the subtraction result in register A. |
| OUTA | 0x0C | Sets the Output register with the register A value. |
| OUTB | 0x0D | Sets the Output register with the register B value. |
| OUT NUM | 0x0E | Sets the Output register with the given value. |
| OUT [ADDR] | 0x0F | Sets the Output register with the value stored in the given memory address. |
| JP [ADDR] | 0x10 | Jumps to the given address. |
| JPZ [ADDR] | 0x11 | Jumps to the given address if the zero flag is 1. |
| JPC [ADDR] | 0x12 | Jumps to the given address if the carry flag is 1. |