Cr16 assembler

This is the explanation for this cr16 assembler.

It is based on cr15 ISA.

Instruction Set:

- ADD,
- ADDI,
- SUB,
- SUBI,
- CMP,
- CMPI,
- AND,
- ANDI,
- OR,
- ORI,
- XOR,
- XORI,
- MOV,
- MOVI,
- LSH,
- LSHI,
- LUI,
- LOAD,
- STOR,
- Bcond,
- Jcond,
- JAL,
- Link,
- LDSD,
- STSD,

Rule of assembler:

1. write register without $
2. No binary number allowed, hex and decimal are allowed
3. Write hex in full format, even 0x1 should write as 0x01
4. Must follow ISA instruction.
5. r0 only store 0
6. Reg file 0x0 to 0xf are r0 to r15
7. r13 memory address
8. r14 is the number register, use for MOVI 1, (.LED), only this style,
9. Every memory address is 16-bit word
10. 32768 memory address
11. 1 instruction must be 1 memory address, no more
12. No space allowed between label name
13. Write B.label and J.label as JUC or BUC
14. Every Bcond.label, the distance between each label must be within 254 lines(including BUC).
15. Instruction cannot be the same line with the comment.
16. Only LOAD, can do example: LOAD r0, .SD(r3), or LOAD r0, .SD(r3,1) the number inside() must be decimal, can be with negative number
17. Only MOV, can do example: MOV .SD(r3),r4, or MOV .SD(r3,1),r4 the number inside() must be decimal, can be with negative number
18. Only MOVI, can do example: MOVI 1, (.LED) , can do with negative number