

# Hack Assembly Language Compiler

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- What is Hack Assembly?
  - There are some documents on the internet.
  - [Introduction to Hack Assembly Language](#)
  - [Assembly Language Tricks for the HACK computer](#)
- This is a simple compiler that can compile JLang to Hack Assembly.
- This compiler implement these functions:
  - assembly optimization
    - dead code elimination
    - operation combine
    - duplicate operation elimination
  - stack frame
    - return address
    - function arguments
    - return value
  - loop & conditions
    - with variable life cycle in a block.
  - builtin library
    - output
      - draw rectangle
      - draw number
      - draw chars
      - clear screen
    - input
      - read keys
    - math
      - abs
      - lowbit
      - xor
      - multiply
      - divide
      - mod
      - min
      - max
    - memory
      - allocate
      - free