**Notes**:

* For option#5, you must enter four digits.
* ncurses successfully implemented.

**Compile: gcc -o slc3.exe slc3.c -lncurses**

**Run: ./slc3.exe** [input file]

**Initially open.**

user@HPdesktop ~

$ **./slc3.exe**

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x0000│

│R1: x0000 x3001: x0000│

│R2: x0000 x3002: x0000│

│R3: x0000 x3003: x0000│

│R4: x0000 x3004: x0000│

│R5: x0000 x3005: x0000│

│R6: x0000 x3006: x0000│

│R7: x0000 x3007: x0000│

│ x3008: x0000│

│ x3009: x0000│

│ x300A: x0000│

│PC: x3000 IR: x0000 x300B: x0000│

│A: x0000 B: x0000 x300C: x0000│

│MAR: x3000 MDR: x0000 x300D: x0000│

│CC: N:0 Z:0 P:0 x300E: x0000│

│ x300F: x0000│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- │

│ │

│ │

│ │

│ │

│ │

└───────────────────────────────────────┘

**Get a file name, select option 1.**

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x5020│

│R1: x0000 x3001: x5FE0│

│R2: x0000 x3002: x1FE2│

│R3: x0000 x3003: x2217│

│R4: x0000 x3004: x2417│

│R5: x0000 x3005: x1642│

│R6: x0000 x3006: x5842│

│R7: x0000 x3007: x9A7F│

│ x3008: x0803│

│ x3009: x5260│

│ x300A: x0404│

│PC: x3000 IR: x0000 x300B: x0E04│

│A: x0000 B: x0000 x300C: x103F│

│MAR: x3000 MDR: x0000 x300D: x1C07│

│CC: N:0 Z:0 P:0 x300E: x0401│

│ x300F: x3A0D│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- 1

│Input: 1 │

│Specify file name: **HW3.hex**

│

│

│ │

└───────────────────────────────────────┘

**Get a file name, command line argument.**

user@HPdesktop ~

$ **./slc3.exe HW3.hex**

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x5020│

│R1: x0000 x3001: x5FE0│

│R2: x0000 x3002: x1FE2│

│R3: x0000 x3003: x2217│

│R4: x0000 x3004: x2417│

│R5: x0000 x3005: x1642│

│R6: x0000 x3006: x5842│

│R7: x0000 x3007: x9A7F│

│ x3008: x0803│

│ x3009: x5260│

│ x300A: x0404│

│PC: x3000 IR: x0000 x300B: x0E04│

│A: x0000 B: x0000 x300C: x103F│

│MAR: x3000 MDR: x0000 x300D: x1C07│

│CC: N:0 Z:0 P:0 x300E: x0401│

│ x300F: x3A0D│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- │

│ │

│ │

│ │

│ │

│ │

└───────────────────────────────────────┘

**First 5 Steps, select option 3.**

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x5020│

│R1: x0000 x3001: x5FE0│

│R2: x0000 x3002: x1FE2│

│R3: x0000 x3003: x2217│

│R4: x0000 x3004: x2417│

│R5: x0000 x3005: x1642│

│R6: x0000 x3006: x5842│

│R7: x0000 x3007: x9A7F│

│ x3008: x0803│

│ x3009: x5260│

│ x300A: x0404│

│PC: x3001 IR: x5020 x300B: x0E04│

│A: x0000 B: x0000 x300C: x103F│

│MAR: x3000 MDR: x5020 x300D: x1C07│

│CC: N:0 Z:1 P:0 x300E: x0401│

│ x300F: x3A0D│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- 3

│Input: **3** │

│

│

│

│ │

└───────────────────────────────────────┘

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x5020│

│R1: x0000 x3001: x5FE0│

│R2: x0000 x3002: x1FE2│

│R3: x0000 x3003: x2217│

│R4: x0000 x3004: x2417│

│R5: x0000 x3005: x1642│

│R6: x0000 x3006: x5842│

│R7: x0000 x3007: x9A7F│

│ x3008: x0803│

│ x3009: x5260│

│ x300A: x0404│

│PC: x3002 IR: x5FE0 x300B: x0E04│

│A: x0000 B: x0000 x300C: x103F│

│MAR: x3001 MDR: x5FE0 x300D: x1C07│

│CC: N:0 Z:1 P:0 x300E: x0401│

│ x300F: x3A0D│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- 3

│Input: **3** │

│

│

│

│ │

└───────────────────────────────────────┘

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x5020│

│R1: x0000 x3001: x5FE0│

│R2: x0000 x3002: x1FE2│

│R3: x0000 x3003: x2217│

│R4: x0000 x3004: x2417│

│R5: x0000 x3005: x1642│

│R6: x0000 x3006: x5842│

│R7: x0002 x3007: x9A7F│

│ x3008: x0803│

│ x3009: x5260│

│ x300A: x0404│

│PC: x3003 IR: x1FE2 x300B: x0E04│

│A: x0000 B: x0000 x300C: x103F│

│MAR: x3002 MDR: x1FE2 x300D: x1C07│

│CC: N:0 Z:0 P:1 x300E: x0401│

│ x300F: x3A0D│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- 3

│Input: **3** │

│

│

│

│ │

└───────────────────────────────────────┘

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x5020│

│R1: x0005 x3001: x5FE0│

│R2: x0000 x3002: x1FE2│

│R3: x0000 x3003: x2217│

│R4: x0000 x3004: x2417│

│R5: x0000 x3005: x1642│

│R6: x0000 x3006: x5842│

│R7: x0002 x3007: x9A7F│

│ x3008: x0803│

│ x3009: x5260│

│ x300A: x0404│

│PC: x3004 IR: x2217 x300B: x0E04│

│A: x0000 B: x0000 x300C: x103F│

│MAR: x301B MDR: x2217 x300D: x1C07│

│CC: N:0 Z:0 P:1 x300E: x0401│

│ x300F: x3A0D│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- 3

│Input: **3** │

│

│

│

│ │

└───────────────────────────────────────┘

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x5020│

│R1: x0005 x3001: x5FE0│

│R2: x0019 x3002: x1FE2│

│R3: x0000 x3003: x2217│

│R4: x0000 x3004: x2417│

│R5: x0000 x3005: x1642│

│R6: x0000 x3006: x5842│

│R7: x0002 x3007: x9A7F│

│ x3008: x0803│

│ x3009: x5260│

│ x300A: x0404│

│PC: x3005 IR: x2417 x300B: x0E04│

│A: x0000 B: x0000 x300C: x103F│

│MAR: x301C MDR: x2417 x300D: x1C07│

│CC: N:0 Z:0 P:1 x300E: x0401│

│ x300F: x3A0D│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- 3

│Input: **3** │

│

│

│

│ │

└───────────────────────────────────────┘

**Display Memory, option 5.**

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x3000: x5020│

│R1: x0005 x3001: x5FE0│

│R2: x0019 x3002: x1FE2│

│R3: x001E x3003: x2217│

│R4: x0000 x3004: x2417│

│R5: x0000 x3005: x1642│

│R6: x0000 x3006: x5842│

│R7: x0002 x3007: x9A7F│

│ x3008: x0803│

│ x3009: x5260│

│ x300A: x0404│

│PC: x3006 IR: x1642 x300B: x0E04│

│A: x0000 B: x0000 x300C: x103F│

│MAR: x3005 MDR: x1642 x300D: x1C07│

│CC: N:0 Z:0 P:1 x300E: x0401│

│ x300F: x3A0D│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- 5

│Input: 5

│Push Q to return to main menu.

│New Starting Address: x**300F**

│

│ │

└───────────────────────────────────────┘

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x300F: x3A0D│

│R1: x0005 x3010: xF025│

│R2: x0019 x3011: x0000│

│R3: x001E x3012: x0000│

│R4: x0000 x3013: x0000│

│R5: x0000 x3014: x0000│

│R6: x0000 x3015: x0000│

│R7: x0002 x3016: x0000│

│ x3017: x0000│

│ x3018: x0000│

│ x3019: x0000│

│PC: x3006 IR: x1642 x301A: x0000│

│A: x0000 B: x0000 x301B: x0005│

│MAR: x3005 MDR: x1642 x301C: x0019│

│CC: N:0 Z:0 P:1 x300E: x0000│

│ x301E: x0000│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- │

│ │

│ │

│ │

│ │

│ │

└───────────────────────────────────────┘

**Display Memory, option 5, option q.**

┌───────────────────────────────────────┐

│Welcome to the LC-3 Simulator Simulator│

│Registers Memory │

│R0: x0000 x300F: x3A0D│

│R1: x0005 x3010: xF025│

│R2: x0019 x3011: x0000│

│R3: x001E x3012: x0000│

│R4: x0000 x3013: x0000│

│R5: x0000 x3014: x0000│

│R6: x0000 x3015: x0000│

│R7: x0002 x3016: x0000│

│ x3017: x0000│

│ x3018: x0000│

│ x3019: x0000│

│PC: x3006 IR: x1642 x301A: x0000│

│A: x0000 B: x0000 x301B: x0005│

│MAR: x3005 MDR: x1642 x301C: x0019│

│CC: N:0 Z:0 P:1 x300E: x0000│

│ x301E: x0000│

│Select: 1) Load, 3) Step │

│ 5) Display Mem, 9) Exit │

│ ------------------------------------- 5

│Input: 5 │

│Push Q to return to main menu.

│New Starting Address: x**q**

│Returning to main menu.

│ │

└───────────────────────────────────────┘