

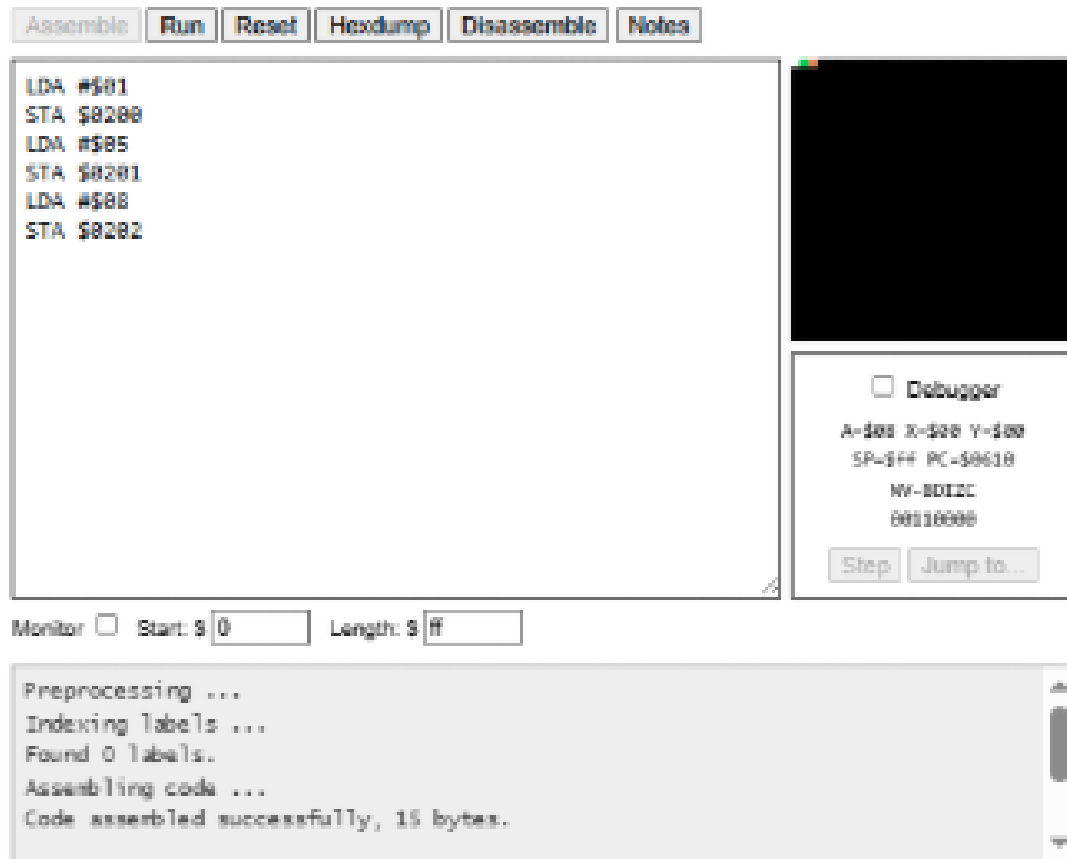
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CS130

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Lab Exercise 1 — Easy 6502

Step 1 — Change three pixel colors



Step 2 — Pixel at \$05FF (bottom-right)

AssembleRunResetHexdumpDisassembleNotes

```
LDA #$81
STA $8280

LDA #$85
STA $8281

LDA #$8E
STA $85FF
```

☐ Debugger

A=\$00 X=\$00 Y=\$00
SP=\$FF PC=\$0012
NV-BDIZC
00110000

StepJump to...

Monitor ☐ Start: \$ 0 Length: \$ FF

Preprocessing ...
Indexing labels ...
Found 0 labels.
Assembling code ...
Code assembled successfully, 15 bytes.

Step 3 — 16-color palette from \$0400

AssembleRunResetHexdumpDisassembleNotes

```
LDX #$00
loop:
  TXA
  STA $0400,X
  INX
  CPX #$10
  BNE loop
BRK
```

☐ Debugger

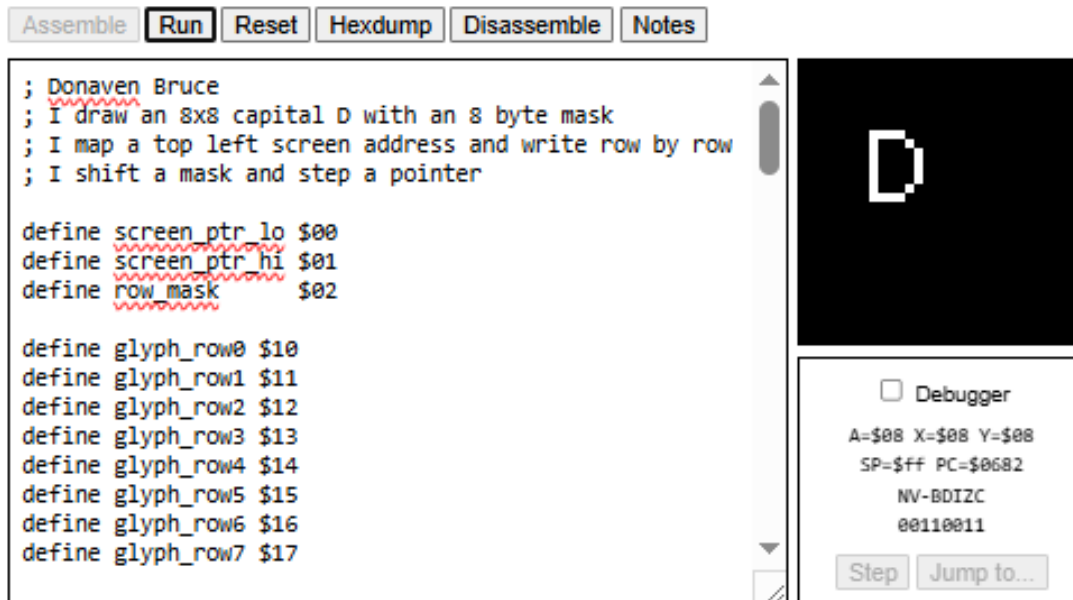
A=\$0f X=\$10 Y=\$00
SP=\$ff PC=\$060c
NV-BDIZC
00110011

StepJump to...

Monitor ☐ Start: \$ 0 Length: \$ ff

Preprocessing ...
Indexing labels ...
Found 1 label.
Assembling code ...
Code assembled successfully, 12 bytes.

Step 4 — Initial “D” Font height: 17 pixels.



Step 5 — Branching with BNE

Result: X decremented 5 times (08 → 07 → 06 → 05 → 04 → 03). Final X = \$03. Total Step presses = 23.

AssembleRunResetHexdumpDisassembleNotes

```
LDX #$08
decrement:
DEX
STX $0200
CPX #$03
BNE decrement
STX $0201
BRK
```

☒ Debugger

A=\$00 X=\$03 Y=\$00
SP=\$ff PC=\$060e
NV-BDIZC
00110011

StepJump to...

Step 6 — Replace BNE with BEQ

Result: X decremented 1 time (08 → 07). Final X = \$07. Total Step presses = 7.

AssembleRunResetHexdumpDisassembleNotes

```
LDX #$08
decrement:
DEX
STX $0200
CPX #$03
BEQ decrement
STX $0201
BRK
```

☒ Debugger

A=\$00 X=\$07 Y=\$00
SP=\$ff PC=\$060e
NV-BDIZC
00110001

StepJump to...

Monitor ☐ Start: \$ 0 Length: \$ ff