Program: ['SWAP B B', 'ROR D', 'MOV G A', 'SHR C', 'NOT', 'SUB D F J', 'CLR', 'MOV E B', 'LOADI 172', 'SUB G C', 'MUL D', 'LOADI 120', 'ROR C', 'ADD A C', 'LOADI 79', 'MOV B A', 'SUB F A', 'ROL H', 'DIV E B', 'LOADI 91', 'MUL E', 'DEC G', 'CLR H', 'INC', 'LOADI 166', 'SWAP FG', 'NOTD', 'ADDEI', 'PUSHD', 'SWAPFG', 'DIVJ', 'PUSHG', 'SUB H', 'DEC', 'XOR J', 'ADD B', 'SWAP F', 'CLR', 'SHL', 'ADD A', 'DEC', 'ROR G', 'NOT H', 'ROL', 'DEC D', 'POP I', 'DEC E', 'DIV A I', 'XOR J C B', 'SHR', 'ROL E', 'XOR J F', 'DIV A C', 'XOR H J C', 'MUL C G', 'NOT A', 'XOR B', 'XOR C D E', 'OR D E', 'PUSH I', 'LOADI 23', 'DEC', 'LOADI 230', 'CLR', 'SWAP F A', 'AND B E', 'DIV G', 'NOT', 'DEC D', 'SUB B I', 'SHR', 'SWAP I', 'AND H', 'SHR A', 'INC', 'DIV C D', 'ADD D F', 'SWAP E A', 'NOT', 'XOR G C J', 'INC', 'DIV C H D', 'SHL', 'ROL', 'POP I', 'OR I E', 'POP F', 'AND A', 'ADD D J B', 'POP G', 'NOT J', 'SWAP F', 'SUB C B', 'SHL', 'SUB E', 'POP E', 'POP A', 'ADD I', 'MUL I', 'LOADI 175', 'XOR C B', 'ADD H H', 'DIV H', 'ROL B', 'DEC D', 'SWAP A', 'DEC J', 'ADD J', 'CLR C', 'ROR D', 'SHL G', 'SWAP H C', 'CLR D', 'MOV A G', 'POP C', 'SUB C H', 'MOV D A', 'PUSH E', 'ROL', 'LOADI 22', 'ADD I G B', 'LOADI 229', 'ROR', 'LOADI 61', 'AND F D', 'XOR B H F', 'CLR C', 'PUSH A', 'SHR D', 'SWAP J', 'SHL B', 'XOR A A H', 'ROR H', 'SHR', 'INC B', 'CLR H', 'AND J F', 'MOV H B', 'DIV D I H', 'SUB E C', 'ROR G', 'CLR', 'DEC B', 'INC E', 'MUL J I', 'NOT', 'SUB I', 'DEC H', 'SHL C', 'SHR D', 'MOV A C', 'ADD A', 'LOADI 144', 'SHL', 'LOADI 51', 'SUB I B E', 'ADD C H E', 'LOADI 168', 'SHL B', 'NOT G', 'MUL D F B', 'SHL B', 'OR I B', 'MOV E H', 'ROR', 'DIV B I H', 'SUB J J C', 'SHR', 'ROR D', 'MUL H', 'NOT', 'DEC', 'SUB A I C', 'NOT I', 'AND A', 'DEC I', 'POP J', 'NOT H', 'DIV G', 'AND B', 'INC A', 'ROL C', 'DEC B', 'SHR C', 'NOT', 'MOV F E', 'POP I', 'DIV I C F', 'NOT', 'ROL A', 'SUB J', 'CLR B', 'ADD J', 'NOT', 'DIV F H', 'AND J C', 'LOADI 132', 'INC I', 'MUL H H D', 'SWAP E H', 'SWAP E', 'DIV I C', 'POP D', 'SWAP A', 'DIV D H E', 'POP F', 'INC', 'POP C', 'XOR A', 'AND G F', 'CLR I', 'AND E', 'XOR B', 'XOR G I', 'SUB A G I', 'SUB H', 'LOADI 215', 'ROL A', 'XOR J B J', 'SHL B', 'MOV C G', 'CLR C', 'ADD A A', 'POP F', 'DEC', 'SUB F', 'INC', 'ROR', 'XOR D D', 'ADD C F', 'SUB G C', 'ADD D', 'POP H', 'DEC I', 'SWAP I J', 'MOV E C', 'XOR F EH', 'DIV GBA', 'DEC', 'SHRC', 'MOV JF', 'ORH', 'MULBF', 'ROL', 'OR E', 'DIV A A', 'NOT A', 'MOV D E', 'INC', 'MOV F F', 'HLT']

State at step 0:

PC: 0 ACC: 251 IR: HLT

Registers: {'A': 241, 'B': 4, 'C': 157, 'D': 9, 'E': 213, 'F': 24, 'G': 234, 'H': 55,

```
'I': 227, 'J': 73}
State at step 1:
PC: 1
ACC: 251
IR: SWAP B B
Registers: {'A': 241, 'B': 4, 'C': 157, 'D': 9, 'E': 213, 'F': 24, 'G': 234, 'H': 55,
'I': 227, 'J': 73}
State at step 2:
PC: 2
ACC: 251
IR: ROR D
Registers: {'A': 241, 'B': 4, 'C': 157, 'D': 9, 'E': 213, 'F': 24, 'G': 234, 'H': 55,
'I': 227, 'J': 73}
State at step 3:
PC: 3
ACC: 251
IR: MOV G A
Registers: {'A': 241, 'B': 4, 'C': 157, 'D': 132, 'E': 213, 'F': 24, 'G': 234, 'H':
55, 'I': 227, 'J': 73}
State at step 4:
PC: 4
ACC: 251
IR: SHR C
Registers: {'A': 241, 'B': 4, 'C': 157, 'D': 132, 'E': 213, 'F': 24, 'G': 241, 'H':
55, 'I': 227, 'J': 73}
State at step 5:
PC: 5
ACC: 251
IR: NOT
Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 213, 'F': 24, 'G': 241, 'H':
55, 'I': 227, 'J': 73}
State at step 6:
PC: 6
```

ACC: 4

IR: SUB D F J

Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 213, 'F': 24, 'G': 241, 'H': 55, 'I': 227, 'J': 73}

State at step 7:

PC: 7 ACC: 4 IR: CLR

Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 213, 'F': 24, 'G': 241, 'H': 55, 'I': 227, 'J': 108}

State at step 8:

PC: 8 ACC: 0

IR: MOV E B

Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 213, 'F': 24, 'G': 241, 'H': 55, 'I': 227, 'J': 108}

State at step 9:

PC: 9 ACC: 0

IR: LOADI 172

Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 4, 'F': 24, 'G': 241, 'H': 55, 'I': 227, 'J': 108}

State at step 10:

PC: 10 ACC: 172 IR: SUB G C

Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 4, 'F': 24, 'G': 241, 'H': 55, 'I': 227, 'J': 108}

State at step 11:

PC: 11 ACC: 172 IR: MUL D

Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 4, 'F': 24, 'G': 163, 'H': 55, 'I': 227, 'J': 108}

State at step 12:

PC: 12 ACC: 255 IR: LOADI 120

Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 4, 'F': 24, 'G': 163, 'H': 55,

'I': 227, 'J': 108}

State at step 13:

PC: 13 ACC: 120 IR: ROR C

Registers: {'A': 241, 'B': 4, 'C': 78, 'D': 132, 'E': 4, 'F': 24, 'G': 163, 'H': 55,

'I': 227, 'J': 108}

State at step 14:

PC: 14 ACC: 120 IR: ADD A C

Registers: {'A': 241, 'B': 4, 'C': 39, 'D': 132, 'E': 4, 'F': 24, 'G': 163, 'H': 55,

'I': 227, 'J': 108}

State at step 15:

PC: 15 ACC: 120 IR: LOADI 79

Registers: {'A': 255, 'B': 4, 'C': 39, 'D': 132, 'E': 4, 'F': 24, 'G': 163, 'H': 55,

'I': 227, 'J': 108}

State at step 16:

PC: 16 ACC: 79

IR: MOV B A

Registers: {'A': 255, 'B': 4, 'C': 39, 'D': 132, 'E': 4, 'F': 24, 'G': 163, 'H': 55,

'I': 227, 'J': 108}

State at step 17:

PC: 17 ACC: 79 IR: SUB F A

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 4, 'F': 24, 'G': 163, 'H':

55, 'I': 227, 'J': 108}

State at step 18:

PC: 18

ACC: 79

IR: ROL H

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 4, 'F': 0, 'G': 163, 'H': 55,

'I': 227, 'J': 108}

State at step 19:

PC: 19 ACC: 79

IR: DIV E B

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 4, 'F': 0, 'G': 163, 'H': 110,

'I': 227, 'J': 108}

State at step 20:

PC: 20 ACC: 79

IR: LOADI 91

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 0, 'F': 0, 'G': 163, 'H': 110,

'I': 227, 'J': 108}

State at step 21:

PC: 21 ACC: 91

IR: MUL E

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 0, 'F': 0, 'G': 163, 'H': 110,

'I': 227, 'J': 108}

State at step 22:

PC: 22 ACC: 0 IR: DEC G

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 0, 'F': 0, 'G': 163, 'H': 110,

'I': 227, 'J': 108}

State at step 23:

PC: 23 ACC: 0 IR: CLR H

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 0, 'F': 0, 'G': 162, 'H': 110,

'I': 227, 'J': 108}

State at step 24:

PC: 24 ACC: 0 IR: INC

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 0, 'F': 0, 'G': 162, 'H': 0,

'I': 227, 'J': 108}

State at step 25:

PC: 25 ACC: 1

IR: LOADI 166

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 0, 'F': 0, 'G': 162, 'H': 0,

'I': 227, 'J': 108}

State at step 26:

PC: 26 ACC: 166

IR: SWAP F G

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 0, 'F': 0, 'G': 162, 'H': 0,

'I': 227, 'J': 108}

State at step 27:

PC: 27

ACC: 166 IR: NOT D

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 132, 'E': 0, 'F': 162, 'G': 0, 'H': 0,

'I': 227, 'J': 108}

State at step 28:

PC: 28 ACC: 166 IR: ADD E I

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 0, 'F': 162, 'G': 0, 'H': 0,

'I': 227, 'J': 108}

State at step 29:

PC: 29 ACC: 166 IR: PUSH D

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 162, 'G': 0, 'H':

0, 'I': 227, 'J': 108}

State at step 30:

PC: 30 ACC: 123

IR: SWAP F G

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 162, 'G': 0, 'H':

0, 'I': 227, 'J': 108}

State at step 31:

PC: 31 ACC: 123 IR: DIV J

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 0, 'G': 162, 'H':

0, 'I': 227, 'J': 108}

State at step 32:

PC: 32 ACC: 1

IR: PUSH G

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 0, 'G': 162, 'H':

0, 'I': 227, 'J': 108}

State at step 33:

PC: 33 ACC: 162 IR: SUB H

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 0, 'G': 162, 'H':

0, 'I': 227, 'J': 108}

State at step 34:

PC: 34 ACC: 162 IR: DEC

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 0, 'G': 162, 'H':

0, 'I': 227, 'J': 108}

State at step 35:

PC: 35 ACC: 161 IR: XOR J

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 0, 'G': 162, 'H':

0, 'I': 227, 'J': 108}

State at step 36:

PC: 36 ACC: 205 IR: ADD B

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 0, 'G': 162, 'H':

0, 'I': 227, 'J': 108}

State at step 37:

PC: 37 ACC: 255 IR: SWAP F

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 0, 'G': 162, 'H':

0, 'I': 227, 'J': 108}

State at step 38:

PC: 38 ACC: 0 IR: CLR

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 255, 'G': 162,

'H': 0, 'I': 227, 'J': 108}

State at step 39:

PC: 39 ACC: 0 IR: SHL

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 255, 'G': 162,

'H': 0, 'I': 227, 'J': 108}

State at step 40:

PC: 40 ACC: 0 IR: ADD A

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 255, 'G': 162,

'H': 0, 'I': 227, 'J': 108}

State at step 41:

PC: 41 ACC: 255 IR: DEC

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 255, 'G': 162,

'H': 0, 'I': 227, 'J': 108}

State at step 42:

PC: 42 ACC: 254 IR: ROR G

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 255, 'G': 162,

'H': 0, 'I': 227, 'J': 108}

State at step 43:

PC: 43 ACC: 254 IR: NOT H

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 255, 'G': 81, 'H':

0, 'I': 227, 'J': 108}

State at step 44:

PC: 44 ACC: 254 IR: ROL

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 255, 'G': 81, 'H':

255, 'I': 227, 'J': 108}

State at step 45:

PC: 45 ACC: 253 IR: DEC D

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 123, 'E': 227, 'F': 255, 'G': 81, 'H':

255, 'I': 227, 'J': 108}

State at step 46:

PC: 46 ACC: 253 IR: POP I

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 122, 'E': 227, 'F': 255, 'G': 81, 'H':

255, 'I': 227, 'J': 108}

State at step 47:

PC: 47 ACC: 253 IR: DEC E Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 122, 'E': 227, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 108}

State at step 48:

PC: 48 ACC: 253 IR: DIV A I

Registers: {'A': 255, 'B': 255, 'C': 39, 'D': 122, 'E': 226, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 108}

State at step 49:

PC: 49 ACC: 253

IR: XOR J C B

Registers: {'A': 1, 'B': 255, 'C': 39, 'D': 122, 'E': 226, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 108}

State at step 50:

PC: 50 ACC: 253 IR: SHR

Registers: {'A': 1, 'B': 75, 'C': 39, 'D': 122, 'E': 226, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 108}

State at step 51:

PC: 51 ACC: 126 IR: ROL E

Registers: {'A': 1, 'B': 75, 'C': 39, 'D': 122, 'E': 226, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 108}

State at step 52:

PC: 52 ACC: 126 IR: XOR J F

Registers: {'A': 1, 'B': 75, 'C': 39, 'D': 122, 'E': 197, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 108}

State at step 53:

PC: 53 ACC: 126 IR: DIV A C

Registers: {'A': 1, 'B': 75, 'C': 39, 'D': 122, 'E': 197, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 147}

State at step 54:

PC: 54 ACC: 126

IR: XOR H J C

Registers: {'A': 0, 'B': 75, 'C': 39, 'D': 122, 'E': 197, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 147}

State at step 55:

PC: 55 ACC: 126 IR: MUL C G

Registers: {'A': 0, 'B': 75, 'C': 108, 'D': 122, 'E': 197, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 147}

State at step 56:

PC: 56 ACC: 126 IR: NOT A

Registers: {'A': 0, 'B': 75, 'C': 255, 'D': 122, 'E': 197, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 147}

State at step 57:

PC: 57 ACC: 126 IR: XOR B

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 122, 'E': 197, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 147}

State at step 58:

PC: 58 ACC: 53

IR: XOR C D E

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 122, 'E': 197, 'F': 255, 'G': 81, 'H': 255, 'I': 253, 'J': 147}

State at step 59:

PC: 59

ACC: 53

IR: OR DE

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 122, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 60:

PC: 60 ACC: 53

IR: PUSH I

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 61:

PC: 61

ACC: 253

IR: LOADI 23

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 62:

PC: 62

ACC: 23

IR: DEC

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 63:

PC: 63

ACC: 22

IR: LOADI 230

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 64:

PC: 64

ACC: 230

IR: CLR

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 65:

PC: 65 ACC: 0

IR: SWAP F A

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 66:

PC: 66 ACC: 0

IR: AND B E

Registers: {'A': 255, 'B': 75, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 67:

PC: 67 ACC: 0

IR: DIV G

Registers: {'A': 255, 'B': 1, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 68:

PC: 68 ACC: 0 IR: NOT

Registers: {'A': 255, 'B': 1, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 69:

PC: 69 ACC: 255 IR: DEC D

Registers: {'A': 255, 'B': 1, 'C': 255, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

State at step 70:

PC: 70 ACC: 255 IR: SUB B I

Registers: {'A': 255, 'B': 1, 'C': 255, 'D': 254, 'E': 133, 'F': 255, 'G': 81, 'H':

255, 'I': 253, 'J': 147}

```
State at step 71:
PC: 71
ACC: 255
IR: SHR
Registers: {'A': 255, 'B': 0, 'C': 255, 'D': 254, 'E': 133, 'F': 255, 'G': 81, 'H':
255, 'I': 253, 'J': 147}
State at step 72:
PC: 72
ACC: 127
IR: SWAP I
Registers: {'A': 255, 'B': 0, 'C': 255, 'D': 254, 'E': 133, 'F': 255, 'G': 81, 'H':
255, 'I': 253, 'J': 147}
State at step 73:
PC: 73
ACC: 253
IR: AND H
Registers: {'A': 255, 'B': 0, 'C': 255, 'D': 254, 'E': 133, 'F': 255, 'G': 81, 'H':
255, 'I': 127, 'J': 147}
State at step 74:
PC: 74
ACC: 253
IR: SHR A
Registers: {'A': 255, 'B': 0, 'C': 255, 'D': 254, 'E': 133, 'F': 255, 'G': 81, 'H':
255, 'I': 127, 'J': 147}
State at step 75:
PC: 75
ACC: 253
IR: INC
Registers: {'A': 127, 'B': 0, 'C': 255, 'D': 254, 'E': 133, 'F': 255, 'G': 81, 'H':
255, 'I': 127, 'J': 147}
State at step 76:
PC: 76
ACC: 254
IR: DIV C D
Registers: {'A': 127, 'B': 0, 'C': 255, 'D': 254, 'E': 133, 'F': 255, 'G': 81, 'H':
```

255, 'I': 127, 'J': 147}

```
State at step 77:
PC: 77
ACC: 254
IR: ADD DF
Registers: {'A': 127, 'B': 0, 'C': 1, 'D': 254, 'E': 133, 'F': 255, 'G': 81, 'H':
255, 'I': 127, 'J': 147}
State at step 78:
PC: 78
ACC: 254
IR: SWAP E A
Registers: {'A': 127, 'B': 0, 'C': 1, 'D': 255, 'E': 133, 'F': 255, 'G': 81, 'H':
255, 'I': 127, 'J': 147}
State at step 79:
PC: 79
ACC: 254
IR: NOT
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 255, 'E': 127, 'F': 255, 'G': 81, 'H':
255, 'I': 127, 'J': 147}
State at step 80:
PC: 80
ACC: 1
IR: XOR G C J
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 255, 'E': 127, 'F': 255, 'G': 81, 'H':
255, 'I': 127, 'J': 147}
State at step 81:
PC: 81
ACC: 1
IR: INC
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 255, 'E': 127, 'F': 255, 'G': 81, 'H':
255, 'I': 127, 'J': 80}
State at step 82:
PC: 82
ACC: 2
IR: DIV C H D
```

Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 255, 'E': 127, 'F': 255, 'G': 81, 'H':

```
255, 'I': 127, 'J': 80}
State at step 83:
PC: 83
ACC: 2
IR: SHL
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 0, 'E': 127, 'F': 255, 'G': 81, 'H': 255,
'I': 127, 'J': 80}
State at step 84:
PC: 84
ACC: 4
IR: ROL
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 0, 'E': 127, 'F': 255, 'G': 81, 'H': 255,
'I': 127, 'J': 80}
State at step 85:
PC: 85
ACC: 8
IR: POP I
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 0, 'E': 127, 'F': 255, 'G': 81, 'H': 255,
'I': 127, 'J': 80}
State at step 86:
PC: 86
ACC: 8
IR: OR I E
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 0, 'E': 127, 'F': 255, 'G': 81, 'H': 255,
'I': 8, 'J': 80}
State at step 87:
PC: 87
ACC: 8
IR: POP F
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 0, 'E': 127, 'F': 255, 'G': 81, 'H': 255,
'I': 127, 'J': 80}
State at step 88:
PC: 88
```

ACC: 8 IR: AND A

```
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 0, 'E': 127, 'F': 8, 'G': 81, 'H': 255, 'I':
127, 'J': 80}
State at step 89:
PC: 89
ACC: 0
IR: ADD D J B
Registers: {'A': 133, 'B': 0, 'C': 1, 'D': 0, 'E': 127, 'F': 8, 'G': 81, 'H': 255, 'I':
127, 'J': 80}
State at step 90:
PC: 90
ACC: 0
IR: POP G
Registers: {'A': 133, 'B': 80, 'C': 1, 'D': 0, 'E': 127, 'F': 8, 'G': 81, 'H': 255,
'I': 127, 'J': 80}
State at step 91:
PC: 91
ACC: 0
IR: NOT J
Registers: {'A': 133, 'B': 80, 'C': 1, 'D': 0, 'E': 127, 'F': 8, 'G': 0, 'H': 255, 'I':
127, 'J': 80}
State at step 92:
PC: 92
ACC: 0
IR: SWAP F
Registers: {'A': 133, 'B': 80, 'C': 1, 'D': 0, 'E': 127, 'F': 8, 'G': 0, 'H': 255, 'I':
127, 'J': 175}
State at step 93:
PC: 93
ACC: 8
IR: SUB C B
Registers: {'A': 133, 'B': 80, 'C': 1, 'D': 0, 'E': 127, 'F': 0, 'G': 0, 'H': 255, 'I':
127, 'J': 175}
State at step 94:
PC: 94
```

ACC: 8

IR: SHL

Registers: {'A': 133, 'B': 80, 'C': 0, 'D': 0, 'E': 127, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 175}

State at step 95:

PC: 95 ACC: 16 IR: SUB E

Registers: {'A': 133, 'B': 80, 'C': 0, 'D': 0, 'E': 127, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 175}

State at step 96:

PC: 96 ACC: 0 IR: POP E

Registers: {'A': 133, 'B': 80, 'C': 0, 'D': 0, 'E': 127, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 175}

State at step 97:

PC: 97 ACC: 0 IR: POP A

Registers: {'A': 133, 'B': 80, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 175}

State at step 98:

PC: 98 ACC: 0 IR: ADD I

Registers: {'A': 0, 'B': 80, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 175}

State at step 99:

PC: 99 ACC: 127 IR: MUL I

Registers: {'A': 0, 'B': 80, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 175}

State at step 100:

PC: 100

ACC: 255

IR: LOADI 175

Registers: {'A': 0, 'B': 80, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127,

'J': 175}

State at step 101:

PC: 101 ACC: 175 IR: XOR C B

Registers: {'A': 0, 'B': 80, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127,

'J': 175}

State at step 102:

PC: 102 ACC: 175 IR: ADD H H

Registers: {'A': 0, 'B': 80, 'C': 80, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127,

'J': 175}

State at step 103:

PC: 103 ACC: 175 IR: DIV H

Registers: {'A': 0, 'B': 80, 'C': 80, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127,

'J': 175}

State at step 104:

PC: 104 ACC: 0 IR: ROL B

Registers: {'A': 0, 'B': 80, 'C': 80, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127,

'J': 175}

State at step 105:

PC: 105 ACC: 0 IR: DEC D

Registers: {'A': 0, 'B': 160, 'C': 80, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I':

127, 'J': 175}

State at step 106:

PC: 106 ACC: 0

IR: SWAP A

Registers: {'A': 0, 'B': 160, 'C': 80, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 175}

State at step 107:

PC: 107 ACC: 0 IR: DEC J

Registers: {'A': 0, 'B': 160, 'C': 80, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 175}

State at step 108:

PC: 108 ACC: 0 IR: ADD J

Registers: {'A': 0, 'B': 160, 'C': 80, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 174}

State at step 109:

PC: 109 ACC: 174 IR: CLR C

Registers: {'A': 0, 'B': 160, 'C': 80, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 174}

State at step 110:

PC: 110 ACC: 174 IR: ROR D

Registers: {'A': 0, 'B': 160, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 174}

State at step 111:

PC: 111 ACC: 174 IR: SHL G

Registers: {'A': 0, 'B': 160, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127, 'J': 174}

State at step 112:

PC: 112 ACC: 174

IR: SWAP H C

Registers: {'A': 0, 'B': 160, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 255, 'I': 127,

'J': 174}

State at step 113:

PC: 113 ACC: 174 IR: CLR D

Registers: {'A': 0, 'B': 160, 'C': 255, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 114:

PC: 114 ACC: 174 IR: MOV A G

Registers: {'A': 0, 'B': 160, 'C': 255, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 115:

PC: 115 ACC: 174 IR: POP C

Registers: {'A': 0, 'B': 160, 'C': 255, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 116:

PC: 116 ACC: 174 IR: SUB C H

Registers: {'A': 0, 'B': 160, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 117:

PC: 117 ACC: 174 IR: MOV D A

Registers: {'A': 0, 'B': 160, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

```
State at step 118:
```

PC: 118 ACC: 174 IR: PUSH E

Registers: {'A': 0, 'B': 160, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 119:

PC: 119 ACC: 0 IR: ROL

Registers: {'A': 0, 'B': 160, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 120:

PC: 120 ACC: 0

IR: LOADI 22

Registers: {'A': 0, 'B': 160, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 121:

PC: 121 ACC: 22

IR: ADD I G B

Registers: {'A': 0, 'B': 160, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 122:

PC: 122 ACC: 22

IR: LOADI 229

Registers: {'A': 0, 'B': 127, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 123:

PC: 123 ACC: 229 IR: ROR

Registers: {'A': 0, 'B': 127, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

```
'J': 174}
```

State at step 124:

PC: 124 ACC: 242

IR: LOADI 61

Registers: {'A': 0, 'B': 127, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 125:

PC: 125 ACC: 61

IR: AND F D

Registers: {'A': 0, 'B': 127, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 126:

PC: 126 ACC: 61

IR: XOR BHF

Registers: {'A': 0, 'B': 127, 'C': 174, 'D': 0, 'E': 0, 'F': 0, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 127:

PC: 127 ACC: 61 IR: CLR C

Registers: {'A': 0, 'B': 127, 'C': 174, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I':

127, 'J': 174}

State at step 128:

PC: 128 ACC: 61 IR: PUSH A

Registers: {'A': 0, 'B': 127, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,

'J': 174}

State at step 129:

PC: 129 ACC: 0 IR: SHR D Registers: {'A': 0, 'B': 127, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 174}

State at step 130:

PC: 130 ACC: 0

IR: SWAP J

Registers: {'A': 0, 'B': 127, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 174}

State at step 131:

PC: 131 ACC: 174 IR: SHL B

Registers: {'A': 0, 'B': 127, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

State at step 132:

PC: 132 ACC: 174

IR: XOR A A H

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

State at step 133:

PC: 133 ACC: 174 IR: ROR H

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

State at step 134:

PC: 134 ACC: 174 IR: SHR

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

State at step 135:

PC: 135 ACC: 87

```
IR: INC B
```

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

State at step 136:

PC: 136 ACC: 87 IR: CLR H

Registers: {'A': 0, 'B': 255, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

State at step 137:

PC: 137 ACC: 87 IR: AND J F

Registers: {'A': 0, 'B': 255, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

State at step 138:

PC: 138 ACC: 87

IR: MOV H B

Registers: {'A': 0, 'B': 255, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

State at step 139:

PC: 139 ACC: 87

IR: DIV DIH

Registers: {'A': 0, 'B': 255, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 255, 'I': 127, 'J': 0}

State at step 140:

PC: 140 ACC: 87 IR: SUB E C

Registers: {'A': 0, 'B': 255, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'J': 0}

,

State at step 141:

PC: 141

```
ACC: 87
IR: ROR G
Registers: {'A': 0, 'B': 255, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 142:
PC: 142
ACC: 87
IR: CLR
Registers: {'A': 0, 'B': 255, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 143:
PC: 143
ACC: 0
IR: DEC B
Registers: {'A': 0, 'B': 255, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 144:
PC: 144
ACC: 0
IR: INC E
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 145:
PC: 145
ACC: 0
IR: MUL J I
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 146:
PC: 146
ACC: 0
IR: NOT
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
```

State at step 147:

'J': 0}

```
PC: 147
ACC: 255
IR: SUB I
```

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127, 'G': 0, 'H': 0, 'I': 127, 'G': 0, 'H': 0, 'I': 127, 'G': 0, 'B': 1

'J': 0}

State at step 148:

PC: 148 ACC: 128 IR: DEC H

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,

'J': 0}

State at step 149:

PC: 149 ACC: 128 IR: SHL C

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,

'J': 0}

State at step 150:

PC: 150 ACC: 128 IR: SHR D

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,

'J': 0}

State at step 151:

PC: 151 ACC: 128 IR: MOV A C

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,

'J': 0}

State at step 152:

PC: 152 ACC: 128 IR: ADD A

Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,

'J': 0}

```
State at step 153:
PC: 153
ACC: 128
IR: LOADI 144
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 154:
PC: 154
ACC: 144
IR: SHL
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 155:
PC: 155
ACC: 32
IR: LOADI 51
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 156:
PC: 156
ACC: 51
IR: SUB I B E
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 1, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 157:
PC: 157
ACC: 51
IR: ADD C H E
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 158:
PC: 158
ACC: 51
IR: LOADI 168
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
```

```
State at step 159:
PC: 159
ACC: 168
IR: SHL B
Registers: {'A': 0, 'B': 254, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 160:
PC: 160
ACC: 168
IR: NOT G
Registers: {'A': 0, 'B': 252, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 0, 'H': 0, 'I': 127,
'J': 0}
State at step 161:
PC: 161
ACC: 168
IR: MUL D F B
Registers: {'A': 0, 'B': 252, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I':
127, 'J': 0}
State at step 162:
PC: 162
ACC: 168
IR: SHL B
Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127,
'J': 0}
State at step 163:
PC: 163
ACC: 168
IR: OR I B
Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127,
'J': 0}
State at step 164:
PC: 164
ACC: 168
```

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127,

IR: MOV E H

```
'J': 0}
```

State at step 165:

PC: 165 ACC: 168 IR: ROR

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 166:

PC: 166 ACC: 84

IR: DIV B I H

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 167:

PC: 167 ACC: 84

IR: SUB J J C

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 168:

PC: 168 ACC: 84 IR: SHR

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 169:

PC: 169 ACC: 42 IR: ROR D

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 170:

PC: 170 ACC: 42 IR: MUL H

```
Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}
```

State at step 171:

PC: 171 ACC: 0 IR: NOT

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 172:

PC: 172 ACC: 255 IR: DEC

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 173:

PC: 173 ACC: 254 IR: SUB A I C

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 174:

PC: 174 ACC: 254 IR: NOT I

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 175:

PC: 175 ACC: 254 IR: AND A

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 128, 'J': 0}

State at step 176:

PC: 176 ACC: 0

```
IR: DEC I
```

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 128, 'J': 0}

State at step 177:

PC: 177 ACC: 0 IR: POP J

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 178:

PC: 178 ACC: 0 IR: NOT H

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 0, 'I': 127, 'J': 0}

State at step 179:

PC: 179 ACC: 0 IR: DIV G

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 180:

PC: 180 ACC: 0 IR: AND B

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 181:

PC: 181 ACC: 0 IR: INC A

Registers: {'A': 0, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 182:

PC: 182

```
ACC: 0
```

IR: ROL C

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 183:

PC: 183 ACC: 0 IR: DEC B

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 184:

PC: 184 ACC: 0 IR: SHR C

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 185:

PC: 185 ACC: 0 IR: NOT

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 186:

PC: 186 ACC: 255 IR: MOV F E

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 127, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 187:

PC: 187 ACC: 255 IR: POP I

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 255, 'H': 255, 'I': 127, 'J': 0}

State at step 188:

```
PC: 188
ACC: 255
IR: DIV I C F
Registers: {'A'
```

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 0, 'G': 255, 'H': 255, 'I': 255, 'J': 0}

State at step 189:

PC: 189 ACC: 255 IR: NOT

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 255, 'G': 255, 'H': 255, 'I': 255, 'J': 0}

State at step 190:

PC: 190 ACC: 0 IR: ROL A

Registers: {'A': 1, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 255, 'G': 255, 'H': 255, 'I': 255, 'J': 0}

State at step 191:

PC: 191 ACC: 0 IR: SUB J

Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 255, 'G': 255, 'H': 255, 'I': 255, 'J': 0}

State at step 192:

PC: 192 ACC: 0 IR: CLR B

Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 255, 'G': 255, 'H': 255, 'I': 255, 'J': 0}

State at step 193:

PC: 193 ACC: 0 IR: ADD J

Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 255, 'G': 255, 'H': 255, 'I': 255, 'J': 0}

```
State at step 194:
PC: 194
ACC: 0
IR: NOT
Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 255, 'G': 255, 'H': 255, 'I':
255, 'J': 0}
State at step 195:
PC: 195
ACC: 255
IR: DIV F H
Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 255, 'G': 255, 'H': 255, 'I':
255, 'J': 0}
State at step 196:
PC: 196
ACC: 255
IR: AND J C
Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 1, 'G': 255, 'H': 255, 'I': 255,
'J': 0}
State at step 197:
PC: 197
ACC: 255
IR: LOADI 132
Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 1, 'G': 255, 'H': 255, 'I': 255,
'J': 0}
State at step 198:
PC: 198
ACC: 132
IR: INC I
Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 1, 'G': 255, 'H': 255, 'I': 255,
'J': 0}
State at step 199:
PC: 199
ACC: 132
IR: MUL H H D
Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 0, 'E': 0, 'F': 1, 'G': 255, 'H': 255, 'I': 255,
'J': 0}
```

```
State at step 200:
```

PC: 200 ACC: 132

IR: SWAP E H

Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 255, 'E': 0, 'F': 1, 'G': 255, 'H': 255, 'I':

255, 'J': 0}

State at step 201:

PC: 201 ACC: 132 IR: SWAP E

Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 1, 'G': 255, 'H': 0, 'I':

255, 'J': 0}

State at step 202:

PC: 202 ACC: 255 IR: DIV I C

Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 255, 'E': 132, 'F': 1, 'G': 255, 'H': 0, 'I':

255, 'J': 0}

State at step 203:

PC: 203 ACC: 255 IR: POP D

Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 255, 'E': 132, 'F': 1, 'G': 255, 'H': 0, 'I':

255, 'J': 0}

State at step 204:

PC: 204 ACC: 255 IR: SWAP A

Registers: {'A': 2, 'B': 0, 'C': 0, 'D': 255, 'E': 132, 'F': 1, 'G': 255, 'H': 0, 'I':

255, 'J': 0}

State at step 205:

PC: 205 ACC: 2

IR: DIV DHE

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 132, 'F': 1, 'G': 255, 'H': 0,

```
'I': 255, 'J': 0}
```

State at step 206:

PC: 206 ACC: 2

IR: POP F

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 1, 'G': 255, 'H': 0, 'I': 255, 'J': 0}

State at step 207:

PC: 207 ACC: 2 IR: INC

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 2, 'G': 255, 'H': 0, 'I': 255, 'J': 0}

State at step 208:

PC: 208 ACC: 3 IR: POP C

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 2, 'G': 255, 'H': 0, 'I': 255, 'J': 0}

State at step 209:

PC: 209 ACC: 3 IR: XOR A

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 255, 'H': 0, 'I': 255, 'J': 0}

State at step 210:

PC: 210 ACC: 252 IR: AND G F

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 255, 'H': 0, 'I': 255, 'J': 0}

State at step 211:

PC: 211 ACC: 252 IR: CLR I Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I': 255, 'J': 0}

State at step 212:

PC: 212 ACC: 252 IR: AND E

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I': 0, 'J': 0}

State at step 213:

PC: 213 ACC: 252 IR: XOR B

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I': 0, 'J': 0}

State at step 214:

PC: 214 ACC: 252 IR: XOR G I

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I': 0, 'J': 0}

State at step 215:

PC: 215 ACC: 252 IR: SUB A G I

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I': 0, 'J': 0}

State at step 216:

PC: 216 ACC: 252 IR: SUB H

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I': 253, 'J': 0}

State at step 217:

PC: 217 ACC: 252 IR: LOADI 215

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I': 253, 'J': 0}

State at step 218:

PC: 218 ACC: 215 IR: ROL A

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I': 253, 'J': 0}

State at step 219:

PC: 219 ACC: 215 IR: XOR J B J

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I':

253, 'J': 0}

State at step 220:

PC: 220 ACC: 215 IR: SHL B

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I':

253, 'J': 0}

State at step 221:

PC: 221 ACC: 215 IR: MOV C G

Registers: {'A': 255, 'B': 0, 'C': 3, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I':

253, 'J': 0}

State at step 222:

PC: 222 ACC: 215 IR: CLR C

Registers: {'A': 255, 'B': 0, 'C': 2, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I':

253, 'J': 0}

State at step 223:

PC: 223

ACC: 215

IR: ADD A A

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I':

253, 'J': 0}

State at step 224:

PC: 224 ACC: 215 IR: POP F

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 2, 'G': 2, 'H': 0, 'I':

253, 'J': 0}

State at step 225:

PC: 225 ACC: 215 IR: DEC

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 215, 'G': 2, 'H': 0,

'I': 253, 'J': 0}

State at step 226:

PC: 226 ACC: 214 IR: SUB F

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 215, 'G': 2, 'H': 0,

'I': 253, 'J': 0}

State at step 227:

PC: 227 ACC: 0 IR: INC

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 215, 'G': 2, 'H': 0,

'I': 253, 'J': 0}

State at step 228:

PC: 228 ACC: 1 IR: ROR

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 215, 'G': 2, 'H': 0,

'I': 253, 'J': 0}

State at step 229:

PC: 229 ACC: 128

IR: XOR D D

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 255, 'E': 255, 'F': 215, 'G': 2, 'H': 0,

'I': 253, 'J': 0}

State at step 230:

PC: 230 ACC: 128 IR: ADD C F

Registers: {'A': 255, 'B': 0, 'C': 0, 'D': 0, 'E': 255, 'F': 215, 'G': 2, 'H': 0, 'I':

253, 'J': 0}

State at step 231:

PC: 231 ACC: 128 IR: SUB G C

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 255, 'F': 215, 'G': 2, 'H': 0,

'I': 253, 'J': 0}

State at step 232:

PC: 232 ACC: 128 IR: ADD D

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 255, 'F': 215, 'G': 0, 'H': 0,

'I': 253, 'J': 0}

State at step 233:

PC: 233 ACC: 128 IR: POP H

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 255, 'F': 215, 'G': 0, 'H': 0,

'I': 253, 'J': 0}

State at step 234:

PC: 234 ACC: 128 IR: DEC I

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 255, 'F': 215, 'G': 0, 'H': 128,

'I': 253, 'J': 0}

State at step 235:

PC: 235 ACC: 128 IR: SWAP I J

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 255, 'F': 215, 'G': 0, 'H': 128,

'I': 252, 'J': 0}

State at step 236:

PC: 236 ACC: 128 IR: MOV E C

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 255, 'F': 215, 'G': 0, 'H': 128,

'I': 0, 'J': 252}

State at step 237:

PC: 237 ACC: 128

IR: XOR F E H

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 128,

'I': 0, 'J': 252}

State at step 238:

PC: 238 ACC: 128

IR: DIV G B A

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 252}

State at step 239:

PC: 239 ACC: 128 IR: DEC

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 252}

State at step 240:

PC: 240 ACC: 127 IR: SHR C

Registers: {'A': 255, 'B': 0, 'C': 215, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 252}

State at step 241:

PC: 241 ACC: 127 IR: MOV J F

Registers: {'A': 255, 'B': 0, 'C': 107, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 252}

State at step 242:

PC: 242 ACC: 127 IR: OR H

Registers: {'A': 255, 'B': 0, 'C': 107, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}

State at step 243:

PC: 243 ACC: 127 IR: MUL B F

Registers: {'A': 255, 'B': 0, 'C': 107, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}

State at step 244:

PC: 244 ACC: 127 IR: ROL

Registers: {'A': 255, 'B': 0, 'C': 107, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}

State at step 245:

PC: 245 ACC: 254 IR: OR E

Registers: {'A': 255, 'B': 0, 'C': 107, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}

State at step 246:

PC: 246 ACC: 255 IR: DIV A A

Registers: {'A': 255, 'B': 0, 'C': 107, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}

State at step 247:

PC: 247 ACC: 255 IR: NOT A

Registers: {'A': 1, 'B': 0, 'C': 107, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0, 'I':

0, 'J': 215}

State at step 248:

PC: 248 ACC: 255 IR: MOV D E

Registers: {'A': 254, 'B': 0, 'C': 107, 'D': 0, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}

State at step 249:

PC: 249 ACC: 255 IR: INC

Registers: {'A': 254, 'B': 0, 'C': 107, 'D': 215, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}

State at step 250:

PC: 250 ACC: 255 IR: MOV F F

Registers: {'A': 254, 'B': 0, 'C': 107, 'D': 215, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}

State at step 251:

PC: 251 ACC: 255 IR: HLT

Registers: {'A': 254, 'B': 0, 'C': 107, 'D': 215, 'E': 215, 'F': 215, 'G': 0, 'H': 0,

'I': 0, 'J': 215}