Assignment 2

# divide.bin photo

Text, letter

Description automatically generated

# divide.bin text

0011000000000000 ; Start at x3000

1010 011 000001110 ; Loading R3 with the address that holds x4000 (Current Address x3000)

1010 100 000001110 ; Loading R4 with the address that holds x4001 (Current Address x3001)

0101 110 110 1 00000 ; Assigning 0 to R6 (Current Address x3002)

1001 100 100 111111; Not R4 to be used in the subtraction (Current Address x3003)

0001 100 100 1 00001; R4 2's Complement needed for the subtraction (Current Address x3004)

0001 011 011 0 00 100 ; R3 <- R3-R4 (now R3 + (-R4)) (Current Address x3005)

0000 100 000000010; Break to address x3009 if R3 < 0 (negative) (Current Address x3006)

0001 110 110 1 00001 ; R6 <- R6+1 (Current Address x3007)

0000 001 111111100 ; Break to Address x3004 where we get the 2's complement for R4 (Current Address x3008)

0001 100 100 1 11111 ; Add -1 to R4 (will get R4 back to the way it was before doing the step in x3005) (Current Address x3009)

1001 100 100 111111 ; Not R4 to return it to the way it was before doing changing it for the step at x3005 (Current Address x300A)

0001 011 011 0 00 100; R3 <- R3+R4 (Current Address x300B)

1011 110 000000100; Store R6 indirectly in x5000 (Current Address x300C)

1011 110 000000100; Store R3 indirectly in x5001 (Current Address x300D)

1111 0000 00011001; HALT

0100000000000000 ; x4000

0100000000000001 ; x4001

0101000000000000 ; x5000

0101000000000001 ; x5001

# Registers when quotient is 0

Graphical user interface, text, application

Description automatically generated

Graphical user interface, application, table

Description automatically generated

# Registers when remainder is 0

Table

Description automatically generated

Graphical user interface, application, table

Description automatically generated

# Registers when the remainder is positive

Table

Description automatically generated with medium confidence

Graphical user interface, application, table

Description automatically generated