Set Global X (i.e. R2) to X_START

Initialize Display Buffer

Start

Done

Initialize ROW_LOOP_COUNTER to BITMAP_WIDTH (i.e. 7)

Is SCROLL LOOP COUNTER > 0?

TODO (task 3): Initialize ROW_LOOP_COUNTER to BITMAP_WIDTH for 2nd char

Load starting address for char B into R3

Second Char: TODO (task 2): Update x (R0) and y (R1) for next char i.e. B

Load ROW_LOOP_COUNTER from memory, decrement it and store back

Update x (i.e. R0) to move to beginning column; i.e. subtract BITMAP_WIDTH

Increment y (i.e. R1) by 1 to go to next row

Todo (task 1): Load COLUMN LOOP_COUNTER from memory, decrement it and store back

Is COLUMN LOOP COUNTER > 0?

TODO (task 1): Conditionally Call TRAP x40 based on value read in R4 (i.e. when R4 is 1) to display the block

TODO (task 1): Increment x (i.e. R0) by 1 to move to to next column

TODO (task 1): Increment R3 to read next bitmap value

TODO (task 3): Update Global X for scrolling

Row_loop starts: Initialize COLUMN LOOP_COUNTER to BITMAP_WIDTH (i.e. 7)

Column_loop starts: TODO (task 1): Load Bitmap value to R4 using the address in R3

TODO (task 1): Load COLUMN LOOP_COUNTER from memory, decrement it and store back

Is COLUMN LOOP COUNTER > 0?

Set Global X (i.e. R2) to Global X (i.e. R2)

Set starting y-coordinate for first character (i.e. R1) to Y_START (i.e. 6)

Load starting bitmap address (BITMAP_CHAR_A) for first character into R3

Initialize ROW_LOOP_COUNTER to BITMAP_WIDTH (i.e. 7)

Is ROW LOOP COUNTER > 0?

Yes

No

Yes

No

Set starting x-coordinate for first character (i.e. R0) to Global X (i.e. R2)

Clear Display Area (on start of next iteration)

Start

TODO (task 3): Load SCROLL LOOP COUNTER from memory, decrement it and store back

First character: Set starting x-coordinate for first character (i.e. R0) to Global X (i.e. R2)

TODO (task 2): Initialize ROW_LOOP_COUNTER to BITMAP_WIDTH for 2nd char

TODO (task 2): ROW and COLUMN loops similar to first char

TODO (task 3): Update Global X for scrolling

Row_loop starts: Initialize COLUMN_LOOP_COUNTER to BITMAP_WIDTH (i.e. 7)

Increment y (i.e. R1) by 1 to go to next row

Update x (i.e. R0) to move to beginning column; i.e. subtract BITMAP_WIDTH

TODO (task 1): Increment x (i.e. R0) by 1 to move to next column

TODO (task 1): Increment R3 to read next bitmap value