7.1.1

On that specific memory, the value 0x00000065 is seen after entering the value 101. This is due to the fact that the number 101 in hexadecimal is represented as 65.

7.1.2

The value 0x00000101 is shown on that memory after inputting the value 0x101 since 0x101 is represented in hexadecimal format, eliminating the requirement to convert it to hexa.

7.1.3

The value 0b101 was shown after inputting it. Because 0b101 is represented in binary, it may be translated to 0x00000005 in hexadecimal.

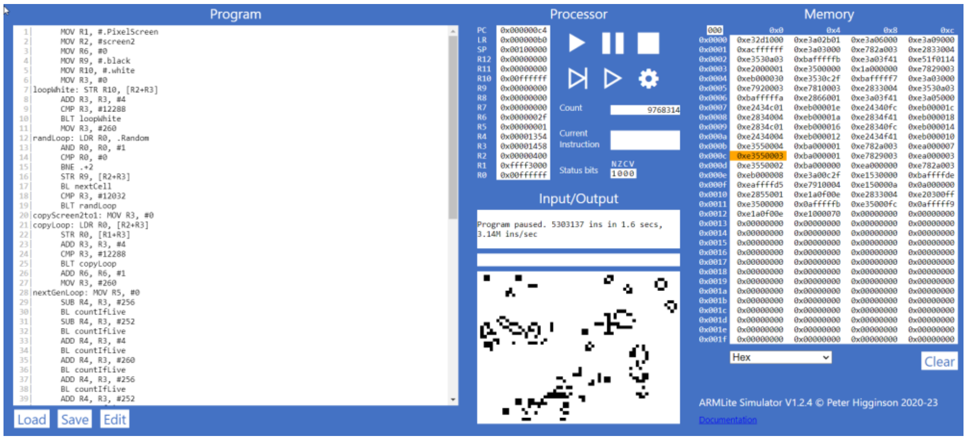
7.1.4

The rows and columns remain represented regardless of how the data is represented inside the memory box. I think it should be that way since altering how rows and columns are represented can end up requiring more space.

7.2.1

Because each memory word needs 16 bits to store it. That why the memory address offset go up in multiples of 0x4. (bytes)

7.3



7.3.1

Before loading the data to the memory grid to await execution, the assembler read the instruction and converted it into machine code.

7.3.2

According to what I've learned, the hex value that hovers everytime I move the laptop mouse to the line number corresponds to the memory location where that instruction is kept.

7.3.3

The extra spaces and blank lines won't be saved in the memory.

After the code is submitted, the comments, whether they are on their own line or on the same line as the instruction, will be coloured.

If a remark is added, the line count will go up. The rest will remain unchanged.

The first line of code will display an error if the comma is changed

7.4.1

The highlighted text on both screens indicates the line of code that will be run by the programme before it is halted

7.4.2

Every time we click the button that is highlighted in red, the programme will run line by line.

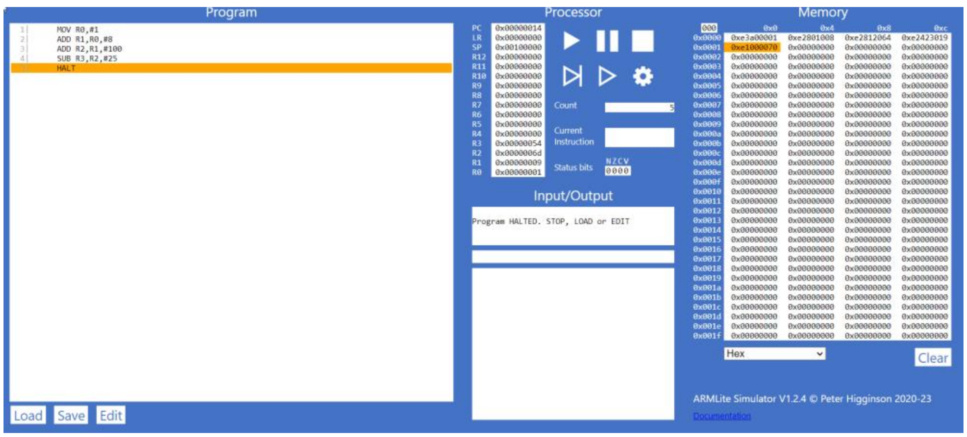
7.4.3

The processor paused just before the line with the breakpoint

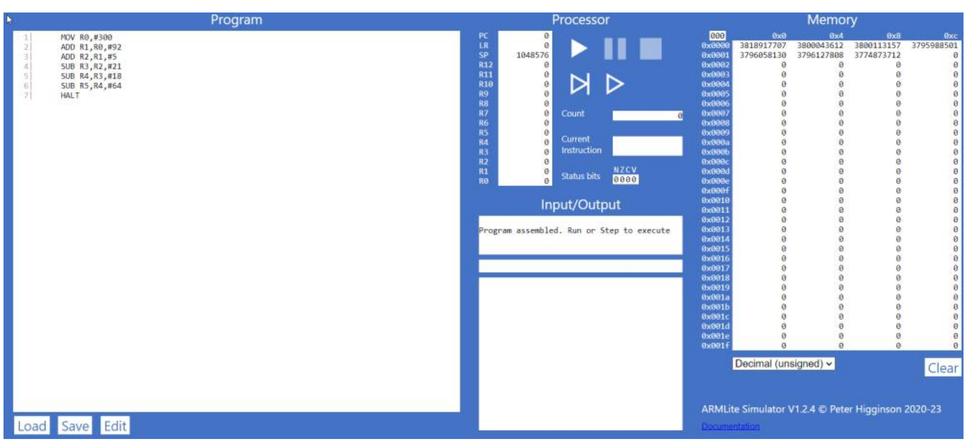
7.5.1

First, the instruction will load the value 1 into register 0. The value in R0 will then be added to one, and the result will be stored in reg01

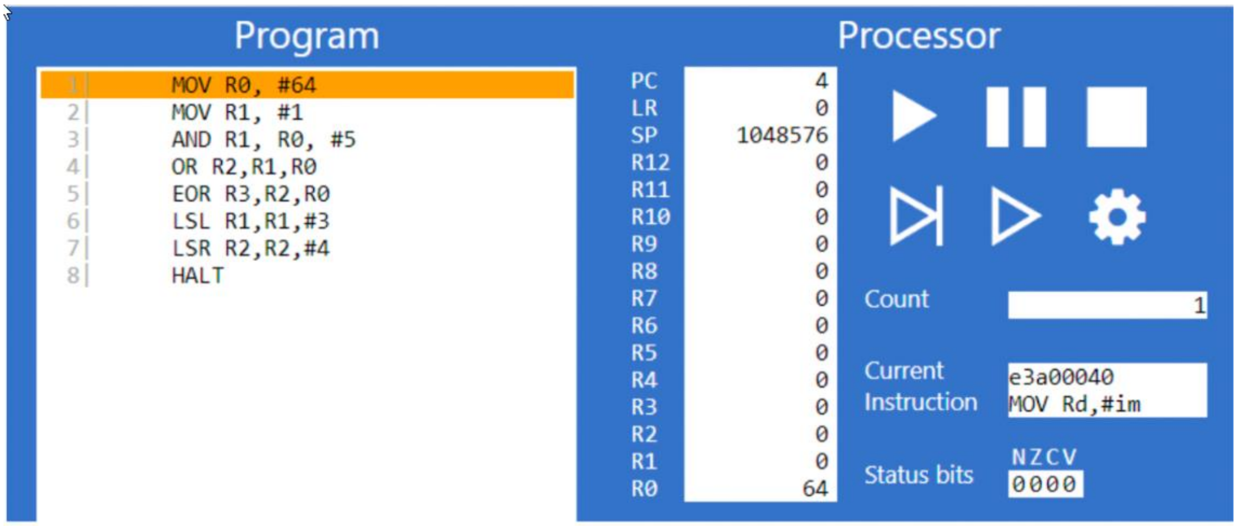
7.5.2



7.5.3

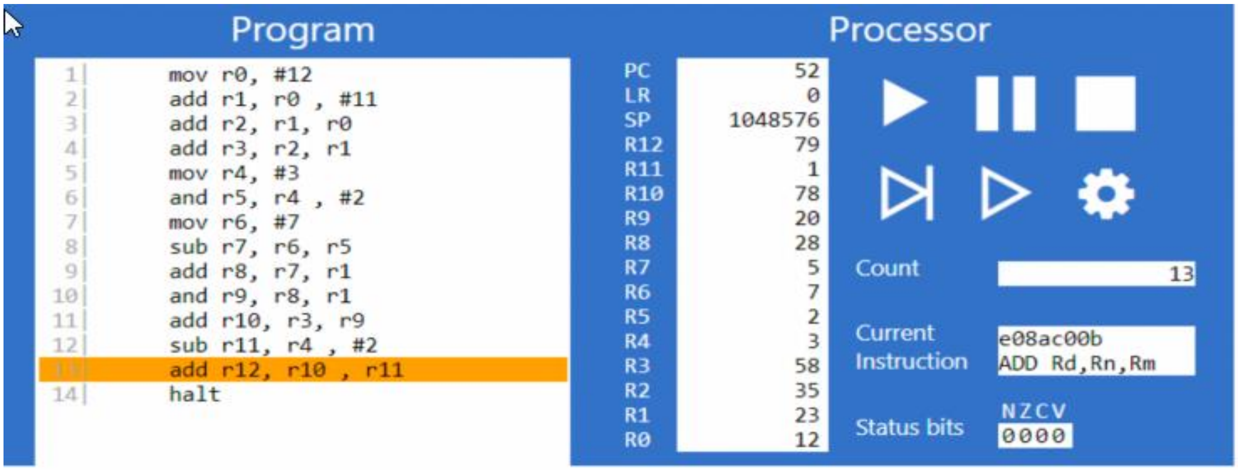


7.5.4



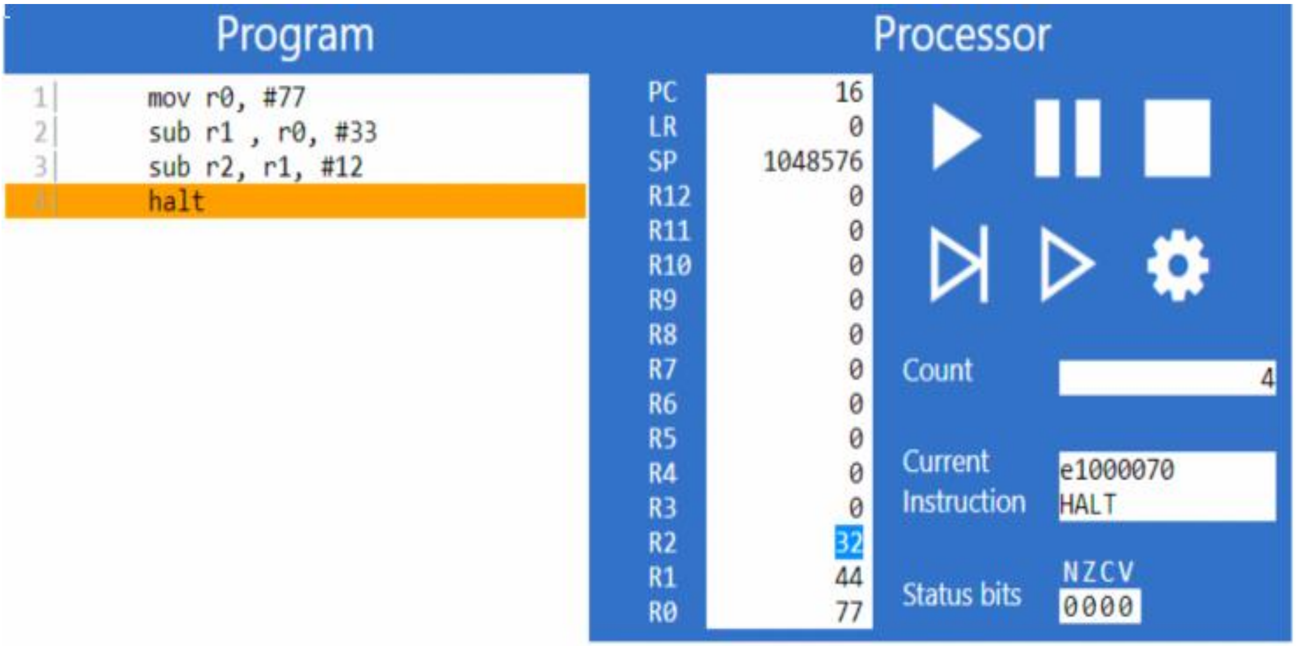
Instruction	***Decimal value of the destination register after executing this instruction***	***Binary value of the destination register after executing this instruction***
MOV R0, #64	64	01000000
MOV R1, #1	1	0000001
AND R1, R0, #5	0	0000000
OR R2,R1,R0	64	01000000
EOR R3,R2,R0	0	0000000
LSL R1,R1,#3	0	0000000
LSR R2,R2,#4	4	00000100

7.5.5



Instruction	***Decimal value of the destination register after executing this instruction***	***Binary value of the destination register after executing this instruction***
MOV R0, #12	12	00001100
ADD R1, R0, #11	23	0010111
ADD R2,R1,R0	35	0100011
ADD R3 , R2, R1	58	0111010
MOV R4,#3	3	0000011
AND R5,R4,#2	2	0000010
MOV R6, #7	7	00000111
SUB R7,R6,R5	5	00000101
ADD R8,R7,R1	28	00011100
AND R9, R8, R1	30	00010100
ADD R10,R3,R9	78	01001110
SUB R11, R4, #2	1	00000001
ADD R12,R10,R11	79	01001111

7.5.6



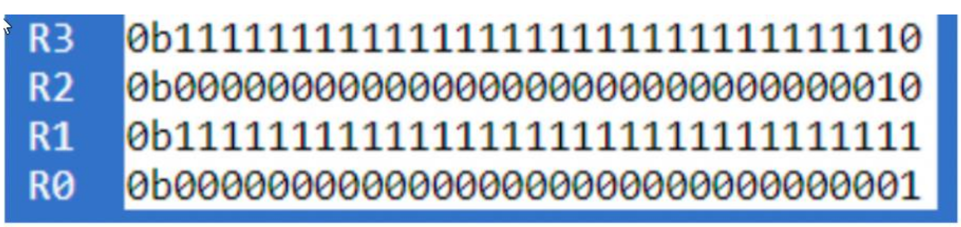
Instruction	*Decimal value of the destination register after executing this instruction*	*Binary value of the destination register after executing this instruction*
MOV R0, #77	77	1001101
SUB R1, R0, #33	44	101100
SUB R2,R1,#12	32	100000

7.6.1

Value is represented in decimals (signed)

7.6.3

The answer is to flip negative integer from its positive equivalent in binary, then add 1



7.6.4

Program

```
MOV R0, #3
MVN R2, R0
ADD R1, R2, #1
HALT
```

PC	28
LR	0
SP	1048576
R12	0
R11	0
R10	0
R9	0
R8	0
R7	0
R6	0
R5	0
R4	0
R3	0
R2	-4
R1	-3
R0	3