Week 4 – Software
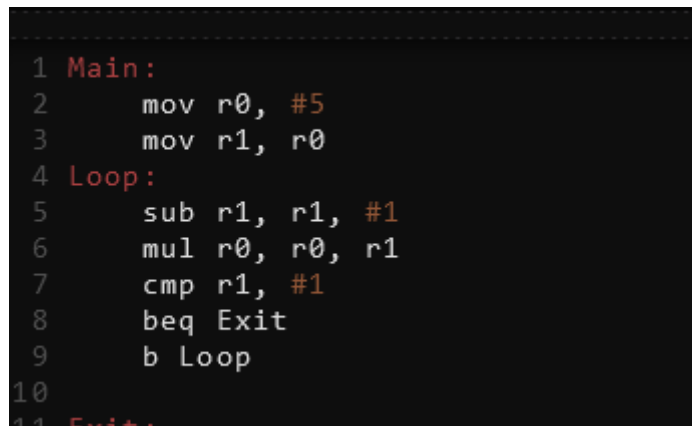
Student number:

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Assignment 4.1: ARM assembly

Screenshot of working assembly code of factorial calculation:

```
1 Main:
2     mov r0, #5
3     mov r1, r0
4 Loop:
5     sub r1, r1, #1
6     mul r0, r0, r1
7     cmp r1, #1
8     beq Exit
9     b Loop
10
11  Exit:
```

Bonus point assignment – week 4

Like the factorial example, you can also implement the calculation of a power of 2 in assembly. For example you want to calculate 2^4 = 16. Use iteration to calculate the result. Store the result in r0.

```
Main:

mov r1, #2

mov r2, #4


Loop:


End:
```

Complete the code. See the PowerPoint slides of week 4.

Screenshot of the completed code here.

```
 1  Main:
 2  mov r1, #2
 3  mov r2, #4
 4
 5  Loop:
 6      mul r4, r1, r1
 7      add r0, r4
 8      add r3, #1
 9      cmp r3, r2
10      beq End
11      b Loop
12
13  End:
```

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