

HW 2-1

Due Sep 2 at 3:30pm **Points** 12.5 **Questions** 5 **Available** until Sep 2 at 3:30pm **Time Limit** None

This quiz was locked Sep 2 at 3:30pm.

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	1,628 minutes	11.5 out of 12.5

Score for this quiz: **11.5** out of 12.5

Submitted Sep 1 at 8pm

This attempt took 1,628 minutes.

▶

Correct!

Correct!

Correct!

Correct!

Correct!

You Answered

Question 1

1 / 1 pts

Match the below terms with their definitions.

.data section

This section is normally used

.bss section

is used for defining data stor

.ascii directive

directive expects zero or mor

.asciz directive

each string is followed by an

.word directive

expects zero or more expres

.long directive

expects zero or more expres

Correct Answer

expects zero or more expressions, separated by commas. Each expression is assembled into the next 8 bytes. If no expressions are given, then the address counter is not advanced and no bytes are reserved.

Correct!

.align directivePads the location counter (in ▼**Question 2**

0 / 1 pts

What does ".align 2" do in GNU ARM assembly?

Ensure that every "variable" following this directive is on a 2 byte boundary

Answer 1:

Correct Answer

Pads the location counter (in the current subsection) to a 2 byte storage boundary.

You Answered

Ensure that every "variable" following this directive is on a 2 byte boundary

Question 3

1 / 1 pts

Assembly language has four main elements. What are they?

Correct!

☒ comments

Correct!

☒ instructions

Correct!

☒ labels☐ registers

Correct!

☒ directives

- ☐ data
- ☐ lines of code

Question 4

1 / 1 pts

What is the total memory, in bytes, allocated for the following variables?

.word expressions
.long expressions

For the ARM processor, these two directives do exactly the same thing. They expect zero or more expressions, separated by commas. They will emit four bytes for each expression given. If no expressions are given, then the address counter is not advanced and no bytes are reserved.

```
1 var1: .word 23
2 var2: .long 0xC
3 expr: .ascii ">>"
```

Correct!

10

Correct Answers 10 (with margin: 0)

Question 5

8.5 / 8.5 pts

Complete the below memory map for the 3 variables shown in problem 2.5. This is the exact same problem that I worked in class on the whiteboard. Don't forget the note in problem 2.5 regarding .long.

EXPLICIT INSTRUCTIONS. Left column is only addresses, each column afterward is a single byte in which you put the **2-digit hex value** that is stored there. The uppermost (left) address is 0x00404000. You must preface your addresses with 0x. Hint: Just copy/paste the first address that I provide and use as a template). Addresses must show all 8 hex digits (NO EXCEPTIONS). Remember memory is in little-endian which affects all non-strings, non-char, variables. Fill any unused bytes in memory with 00.

MEMORY

0x00404000	17	00	00	00	0C	00	00	00



0x00404008	3E	3E	00	00	00	00	00	00
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Answer 1:

Correct! 17

Answer 2:

Correct! 00

Answer 3:

Correct! 00

Answer 4:

Correct! 00

Answer 5:

Correct! 0C

Answer 6:

Correct! 00

Answer 7:

Correct! 00

Answer 8:

Correct! 00

Answer 9:

Correct! 0x00404008

Answer 10:

Correct! 3E

Answer 11:

Correct! 3E

Answer 12:

Correct! 00

Answer 13:



Correct!

00

Answer 14:

Correct!

00

Answer 15:

Correct!

00

Answer 16:

Correct!

00

Answer 17:

Correct!

00

Quiz Score: **11.5** out of 12.5