

Unit 07_010 – C Functions

1. Why is C a "low level, high level language?"
2. What does the following code mean in C? How many bytes would be needed (remember to include the null character)

```
char * s = "Hello"
```

3. Write the assembler code in the .data section that would create the equivalent of `char * s = "Hello"`. It was not covered explicitly in the video, but you should be able to figure out the answer.
4. What does the puts command do?
5. What is %d in the printf function?
6. What is %x in the printf statement?
7. How can the %x format specifier be used so that it is clear the output is in hex?

Unit 07_020 – Farewell, start

8. What command may be used for linking to replace the ld command?
9. What label needs to be changed in order to use gcc as a linker?
10. What else can gcc with assembler in addition to linking?

11. What is the command you would use to assemble and link your program?
 12. What is `gasm`?
 13. In software development, do you need to dig through documentation yourself, or can you depend on Google and AI to do the searching for you?
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Unit 07_030 – `puts`

Video Length 8:00

14. What does the `puts` function do in C? How many arguments does `puts` take?
15. How are parameters passed to functions in x86-64 assembler?
16. What is the order of register use for sending arguments to function calls?
17. Assume the a variable called `sentence` is defined as a null terminated string. Write the code needed to call `puts` from assembler. Do not worry about the return value.

18. What does the `$` mean in `movq $message, rdi`?
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Unit 07_040 – `printf`

Video Length 11:15

19. Why do we need to clear the `rax` register before calling `printf`?

20. The following line shows a printf statement in C. Write the equivalent in assembler.

```
int age = 22;  
  
printf("He is %d years old\n", age);
```

21. Why do strings require a \$ before the variable name?

22. What format specifier is used for each of the following?

- integer displayed in decimal:
- integer displayed in hex:
- string:

23. Suppose you were going to call printf with 6 arguments. What registers would you use? (show them in order)

If you have any lingering questions or problems, please write them here or see me.

