

[Accueil](#) / [Mes cours](#) / [S15_I11_Aassembleur](#) / [Sections](#) / [QCM 18/12/23](#) / [QCM 18/12/23](#)

Commencé le Monday 18 December 2023, 09:00

État Terminé

Terminé le Monday 18 December 2023, 09:25

Temps mis 25 min 30 s

Note 9,00 sur 19,00 (47,37%)

Question **1**

Non répondue

Noté sur 0,50

How many byte(s) can be stored in the register `%r9w`?

Réponse :



La réponse correcte est : 2

Question **2**

Non répondue

Noté sur 0,50

How many byte(s) can be stored in the register `%rbp`?

Réponse :



La réponse correcte est : 8

Question **3**

Incorrect

Note de 0,00 sur 1,00

Indicate the most likely type of the data being accessed: `mov (%rdi,%rcx,8), %rax`.

- a. Array of double
- b. Array of int or unsigned int
- c. Array of long or unsigned long
- d. We can not know
- e. Array of void *
- f. Array of long long or unsigned long long

Les réponses correctes sont : Array of long long or unsigned long long, Array of void *, Array of long or unsigned long

Question 4

Non répondue

Noté sur 1,00

Indicate the most likely type of the data being accessed: `movb -8(%rbp), %dl`.

- a. char *
- b. unsigned short
- c. It is ambiguous
- d. int
- e. Array of int or unsigned int
- f. unsigned char

La réponse correcte est : unsigned char

Question 5

Non répondue

Noté sur 1,00

Indicate the most likely type of the data being accessed: `movb -8(%rbp), %edx`.

- a. char *
- b. Array of int or unsigned int
- c. It is ambiguous
- d. int
- e. unsigned short
- f. unsigned char

La réponse correcte est : It is ambiguous

Question 6

Non répondue

Noté sur 0,50

Which register is most likely to be used for the `char` data type?

- a. rdx
- b. the answer is not listed
- c. bx
- d. cl
- e. eax

La réponse correcte est : cl

Question **7**

Non répondue

Noté sur 0,50

Which register is most likely to be used for the **long** data type?

- a. the answer is not listed
- b. eax
- c. cl
- d. rdx
- e. bx

La réponse correcte est : rdx

Question 8

Partiellement correct

Note de 3,00 sur 6,00

Pick the most likely sample.

The next four questions pertain to the following four code samples.

f1

```
f1:
    subq    $8, %rsp
    call    callfunc
    movl    %eax, %edx
    leal    1(%rax,%rax,2), %eax
    testb   $1, %dl
    jne     .L3
    movl    %edx, %eax
    shrl   $31, %eax
    addl    %edx, %eax
    sarl    %eax
.L3:
    addq    $8, %rsp
    ret
```

f2

```
f2:
    pushq   %rbx
    xorl    %ebx, %ebx
.L3:
    movl    %ebx, %edi
    addl    $1, %ebx
    call    callfunc
    cmpl   $10, %ebx
    jne     .L3
    popq   %rbx
    ret
```

f3

```

f3:
    subq    $8, %rsp
    call   callfunc
    subl   $97, %eax
    cmpb   $4, %al
    ja     .L2
    movzbl %al, %eax
    jmp    *.L4(,%rax,8)
.L4:
    .quad  .L3
    .quad  .L9
    .quad  .L6
    .quad  .L7
    .quad  .L8
.L3:
    movl   $42, %edx
    jmp    .L5
.L6:
    movl   $4096, %edx
    jmp    .L5
.L7:
    movl   $52, %edx
    jmp    .L5
.L8:
    movl   $6440, %edx
    jmp    .L5
.L2:
    movl   $0, %edx
    jmp    .L5
.L9:
    movl   $61, %edx
.L5:
    movl   $.LC0, %esi
    movl   $1, %edi
    movl   $0, %eax
    call   __printf_chk
    addq   $8, %rsp
    ret
.LC0:
    .string "Sum = %d\n"

```

f4

```

f4:
    subq   $40, %rsp
    movl   $1, (%rsp)
    movl   $0, 16(%rsp)
.L2:
    leaq   16(%rsp), %rsi
    movq   %rsp, %rdi
    call   callfunc
    movl   16(%rsp), %eax
    cmpl   %eax, (%rsp)
    jne    .L2
    addq   $40, %rsp
    ret

```

Which sample contains only an if/else construct?

f4



Which sample contains a while loop?

f1



Which sample contains a for loop?

f2



Which sample contains a switch statement?

f3



La réponse correcte est :

Which sample contains only an if/else construct? → f1,

Which sample contains a while loop? → f4,

Which sample contains a for loop? → f2,

Which sample contains a switch statement? → f3

Question **9**

Incorrect

Note de 0,00 sur 1,00

What happens to the stack pointer (RSP) when a value is pushed onto the stack in x86-64 architecture?

- a. Decreases by the size of the pushed value
- b. Moves to a predefined address
- c. Increases by the size of the pushed value ✘
- d. Stays unchanged

Votre réponse est incorrecte.

La réponse correcte est :

Decreases by the size of the pushed value

Question **10**

Terminé

Non noté

After a function call, the stack is **always** unaligned.

Veillez choisir une réponse.

- Vrai
- Faux

La réponse correcte est « Faux ».

Question **11**

Correct

Note de 1,00 sur 1,00

Is the following stack pointer is aligned ?

Veillez choisir une réponse.

- Vrai
- Faux ✓

La réponse correcte est « Faux ».

Question **12**

Correct

Note de 2,00 sur 2,00

Is the following code valid according to the ABI?

```
.global main
.text
main:
    push %rbp
    mov %rsp, %rbp
    mov str, %rdi
    call puts
    mov $0, %eax
    pop %rbp
    ret

.section .data
str:
    .asciz "Hello!"
```

Veillez choisir une réponse.

- Vrai
- Faux ✓

The issue is :

`mov str, %rdi`

It copies the string's bytes in to %rdi, but puts expect a pointer.\

Correct code is :

`mov $str, %rdi`

In this case the source will as well be an immediate value but with the address of the label str which is a pointer.

La réponse correcte est « Faux ».

Question **13**

Non répondue

Noté sur 1,00

Which registers must be saved before their first use inside a function?

Veillez choisir au moins une réponse.

- rbx
- r15
- r13
- rax
- rcx
- rdi
- rdx

Votre réponse est incorrecte.

Les réponses correctes sont :

rbx,

r13,

r15

Question **14**

Correct

Note de 1,00 sur 1,00

A user assembly program pushes the syscall function address on to the stack prior calling the syscall instruction.

Veillez choisir une réponse.

- Vrai
- Faux ✓

La réponse correcte est « Faux ».

Question **15**

Correct

Note de 1,00 sur 1,00

Consider the following assembly code :

```
jge 0x4060d1
```

What is the name of the register on x86-64 that will be read by this instruction?

Réponse :



La réponse correcte est : rflags

Question **16**

Correct

Note de 1,00 sur 1,00

In one word, what is the difference applied to **.S** assembly files compared to **.s**?

Réponse : ✓

La réponse correcte est : macros

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