Commencé le	dimanche 8 novembre 2020, 13:42
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Temps mis	2 min 30 s
Note	**10,00** sur 10,00 (**100**%)

Question 1

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

What is vectorization?

Veuillez choisir une réponse :
a. It is the fact that the CPU execute linear algebra kernels (with vectors)
b. It is the fact that the memory is moved by vector
c. It is a mechanism where the CPU have special memory
d. It is the fact that a CPU can apply a single instruction to a single data
e. It is the fact that a CPU can apply a single instruction to multiple data

Feedback

Votre réponse est correcte.
La réponse correcte est : It is the fact that a CPU can apply a single instruction to multiple data

Question 2

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

A CPU with Vectorization capability:

Veuillez choisir une réponse :
a. It has several scalar registers that can be used as a vector
b. It has vector registers
c. It has no special registers but it can perform advanced operations when it is known that we work on vectors
d. It has a special working mode for linear algebra

Feedback

Votre réponse est correcte.

La réponse correcte est : It has vector registers

Question 3

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

How does Gcc select the instruction sets?

Veuillez choisir une réponse :
a. Gcc always tries to generate binary for the best known CPU by default.
b. Gcc generates binary for the CPU used for compilation by default.
c. Gcc generate generic binary by default, and options allow to change that.
d. There is not different between CPUs so there is no need to change things in the binary.

Feedback

Votre réponse est correcte.
La réponse correcte est : Gcc generate generic binary by default, and options allow to change that.

Question 4

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

The -march=X option

Veuillez choisir une réponse :
a. Allows Gcc to generate a binary for hardware X, but the binary remain compatible with any other type of CPUs.
b.
Allows Gcc to generate a binary for hardware X, and the binary might not be compatible with any other type of CPUs.
c. should be used to tell Gcc what hardware is the best.
d. Does not exist.

Feedback

Votre réponse est correcte.
La réponse correcte est :
Allows Gcc to generate a binary for hardware X, and the binary might not be compatible with any other type of CPUs.

Question 5

Correct

Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

The -mtune=X option

Veuillez choisir une réponse :
a. Tells Gcc to compile only for hardware X.
b. Tells Gcc to optimize for hardware X.
c. Tells Gcc not to compile for hardware X.
d. Tells Gcc not to optimize for hardware X.

Feedback

Votre réponse est correcte.
La réponse correcte est : Tells Gcc to optimize for hardware X.

Question 6

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

The lscpu command provides

Veuillez choisir une réponse :
a. Information about the CPU.
b. The size of the main memory.
c. Perform a ls command in the /cpu directory without the need to be root.

Feedback

Votre réponse est correcte.
La réponse correcte est : Information about the CPU.

Question 7

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

Vectorization by hand vs. Gcc auto-vectorization:

Veuillez choisir une réponse :
a. Auto-vectorization is always faster.
b. Vectorization by hand could be faster in many cases.

Feedback

Votre réponse est correcte.
La réponse correcte est : Vectorization by hand could be faster in many cases.

Question 8

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

An "Intrinsic" is

Veuillez choisir une réponse :
a. A function of high complexity.
b. A function that should be translated into a single instruction by the compiler.
c. A function that calls another compiler.
d. A Gcc option to compiler faster.

Feedback

Votre réponse est correcte.
La réponse correcte est : A function that should be translated into a single instruction by the compiler.

Question 9

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

A horizontal sum in vectorization

Veuillez choisir une réponse :
a. Is the sum of all the vector's values into a scalar.
b. Is a histogram of the sum of all the vector's values.
c. Is the sum of the values of the same horizontal axis.

Feedback

Votre réponse est correcte.
La réponse correcte est : Is the sum of all the vector's values into a scalar.

Question 10

Correct
Note de 1,00 sur 1,00
Marquer la question
Modifier la question

Texte de la question

To perform a horizontal sum, the function "hsum" does:

Veuillez choisir une réponse :
⦿a. If we have sumd = [X1, X2, X3, X4], then

valupper = [X3, X4]
rest = [X1, X2]
valval = [X1 + X3, X2 + X4]
res = [X1 + X3 + X2 + X4, X1 + X3 + X2 + X4]
return [X1 + X3 + X2 + X4]
○b. If we have sumd = [X1, X2, X3, X4], then

valupper = [X4]
rest = [X1, X2, X3]
valval = [X1 + X2 + X3 + X4]
res = [X1 + X3 + X2 + X4]
return [X1 + X3 + X2 + X4]
○c.
If we have sumd = [X1, X2, X3, X4], then

valupper = [X4]
rest = [X1]
valval = [X1 + X4]
res = [X1 + X4 + X3 + X2]
return [X1 + X3 + X2 + X4]

Feedback

Votre réponse est correcte.
La réponse correcte est : If we have sumd = [X1, X2, X3, X4], then

valupper = [X3, X4]
rest = [X1, X2]
valval = [X1 + X3, X2 + X4]
res = [X1 + X3 + X2 + X4, X1 + X3 + X2 + X4]
return [X1 + X3 + X2 + X4]