Session 1 knowledge check

開始しました: 3月 29日 18.06

小テストの指示

問題 1 1 点

Why is C++ preferred for high-frequency trading systems?

- ○ Easier syntax compared to other programming languages
- ○ Better web development frameworks
- ○ Faster execution speed and low-level hardware access
- ○ More extensive standard library than other languages

問題 2 1 点

What is a key advantage of compiled languages like C++ over interpreted languages like Python for system performance?

- ○ Compiled languages are easier to learn
- ○ Interpreted languages have better community support
- ○ Compiled languages typically execute faster due to upfront compilation to machine code
- ○ Interpreted languages offer more robust error handling

問題 3 1 点

In C++, what is the difference between using `#include` and `import` directives?

- ○ #include imports libraries at runtime, whereas import does it at compile-time
- ○ #include only copies the header file's content, while import also includes the module's implementation
- ○ import is used exclusively for static libraries, whereas #include is for dynamic libraries
- ○ No difference, they are interchangeable

問題 4 1 点

Which data type should be carefully chosen to avoid precision errors in financial calculations?

- Integer
- Character
- Boolean
- Floating-point

問題 5 1 点

Why might `auto` be used cautiously in function signatures?

- Increases compilation time significantly
- Can make the code less readable by obscuring the type information
- It's not supported in standard C++
- Leads to dynamically typed variables which are slower

問題 6 1 点

How does proper memory management in C++ benefit program stability?

- Reduces the program's reliance on third-party libraries
- Prevents memory leaks and undefined behavior by managing dynamic memory
- Makes the program run faster on all hardware
- Eliminates the need for garbage collection

問題 7 1 点

What is the primary benefit of using references over pointers in function parameters?

- References allow for direct manipulation of passed arguments without using de

○
References significantly speed up the execution time

○
Pointers are not supported in modern C++

○
References can be reassigned to point to other variables

問題 8 1 点

Why is it important to initialize variables in C++?

○
To prevent compilation errors

○
To avoid runtime errors due to undefined behavior from uninitialized variables

○
Initialization is not necessary in modern C++

○
To make the code more readable

問題 9 1 点

What does the size of an array need to be in C++ at the time of declaration?

○
Dynamically determined based on the system's available memory

○
Specified explicitly or determined at compile-time for static arrays

○
Not required; C++ arrays are dynamic like in Python

○
Double the expected number of elements for safety

問題 10 1 点

In the context of pointers and memory management, what is a crucial practice to avoid memory leaks in C++?

○
Using only static memory allocation

○
Limiting the scope of pointers to small functions

○
Ensuring every allocated memory block is eventually freed

○
Avoiding the use of pointers entirely

問題 11 1 点

What is the result of pointer arithmetic such as `ptr + 1` where `ptr` is a pointer to an integer and `sizeof(int)` is 4 bytes?

○
The pointer moves to the next byte in memory.

○
The pointer moves 4 bytes forward to point to the next integer.

○
The pointer value itself increases by 1.

○
The pointer value itself increases by 1.

問題 12 1 点

Which of the following is a correct way to declare a pointer to a char variable?

○
char ptr = &var;

○
char* ptr = &var;

○
ptr char = &var;

○
char& ptr = var;

問題 13 1 点

When a function expects a pointer argument, what can you pass to it?

○
The value of a variable only.

○
The address of a variable using the & operator.

○
Another function as a callback.

○
A constant value like 5 or 10.

問題 14 1 点

How do you access the value stored at the memory address a pointer is pointing to?

Using the & operator before the pointer name.

By simply using the pointer name without any operator.

Using the * operator before the pointer name.

By incrementing the pointer with +1.

問題 15 1 点

What does it mean if a pointer is declared as `void*`?

It can only point to void functions.

It is an uninitialized pointer and cannot be used.

It is a generic pointer that can point to any data type.

It points to a memory location that holds no data.

問題 16 1 点

Which of the following statements correctly initializes an array of pointers to integers?

int* arr[10];

int (*arr)[10] = new int[10];

int arr* = new int[10];

int& arr[10] = new int[10];

問題 17 1 点

Considering an integer array `int arr[] = {10, 20, 30, 40, 50};`, what does the expression `*(arr + 3)` evaluate to?

10

20

○
40

○
An address of the third element in the array

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