

Ranking

Functions

Details

Data Types & Variables

Data Types
Example
sizeof and modifier
variables: declare, define , iniliaze
storage classes
rvalue lvalue

Preprocessors

#define - Macro and Function-Like Macros
Conditional Compilation
The # and ## Operators
Predefined C++ Macros
Header guard
Macro vs Inline

C/C++ Compilation

gcc/g++
Build Pipeline
Static Linking
Dynamic Linking

Memory layout

Stack, Heap, Data Segment,
Text - variable and allocation,
Call stack,
Recursion

Pointer Basic

Definition
Understand difference between pointer and normal variables
Practice

Pointers and References

Size of Pointer
Const Pointer
Pointer to Const
Const Pointer to Const
Function Pointer
Pointer vs Array?
Pointer Arithmetic?
Pointer Cast Type?
Opaque pointer (optional)
Return reference, Return pointer
Pass by Value, Pass by Reference, Pass by Pointer

Functions

Standard library functions
User-defined function
how function Work in C/C++?
Recursion?
Return reference
default parameter
return pointer
Callback
lambda function?
lambda function vs function pointer?
parameter list
Function Call? Performance compared to macros?

Class & Object

Create a Class
Create a object
Create a instance
Access Data Members and Member Functions
SizeOf Class, data Alignment
Local Class
Nested Class
Pass Objects to Function
Return Objects to Function
Method in class
Constructor, Destructor

DEV1

Struct, Union & Enumerations	Size of Struct? Data alignment Access Members of a Structure Struct & Pointer Struct & Union in Embed Function in Struct Nested Structure typedef
Constructor and Destructor	Default Constructor, Parameters Constructor, Rvalue vs Lvalue, Copy Construtor, -> Shallow copy vs Deep Copy Move Constructor, Destructor, Virtual destructor
Abstraction	Definition virtual method pure virtual method abstract class interface
Encapsulation	definition, access modifier, geter vs seter
Inheritance	definition, access modifier, constructor-destructor calling order, single inheritance, multiple inheritance, issues in multiple inheritance, diamond problem
Polymorphism	definition, virtual function, pure virtual function, overloading, overriding, compile time polymorphism, runtime polimorphism, vpoiter vs vtable, virtual destructor
Namespace & Template	
Exception Handling	Why Exception Handling? Exceptions vs Error try, catch, throw, finally standard exception libraries
Data structures and Algorithms	data structures : array, linked list, stack , queue, tree, binary tree search, self balance tree, hash function, hash table c++ data structure libraries : vector, stack, queue, map, set, list, pair, unordered_map Sorting Searching
Smart pointer	What is smart pointer ? unique pointer share pointer weak pointer
Websocket	winsock ws2
Design Pattern	MVC, Singleton, Prototype
Analyze Requirement	
High Level Design vs Low Level Design	
Assign Tasks, Review Code	

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MultiThread

Clean Code vs Debugging

What and Why Multi Thread?
Lifecycle Threading?
Basic Thread with C++
Why do we need Thread Safety?
Mutex, Semaphore, Lock, Synchronize