Tuesday, September 3, 2024 3:58 PM

Advanced C++ Hands-on Training Syllabus for SW Algorithm Team

C++ Object oriented Programming
- Class & Object
- Constructor and destructor(different types..e.g explicit)
- Access Modifier
- Encapsulation
- Friend function and Friend classes
- Class-object design using SOLID principles

C++ Inheritance and polymorphism
- Public, private and protected inheritance
- Multiple, Multilevel and Hierarchical Inheritance
- Polymorphism using Dynamic Binding

C++ Functions
- Function Overloading
- Inline function
- Virtual Function
- Abstract class and pure virtual function
- Constexpr and Consteval Functions

C++ Pointers and References
- RAII (Resource Acquisition is Initialization)
- Smart pointer
- Memory management:new,delete
- Safe pointer conversions
- Static and Dynamic cast

C++ Templates
- Function and Class Template
- Using array template
- STL- Sequential Containers(Array,Vector,Stack,List,Queue, Dque,Priority Que)
- STL- Associative Containers (Map,set,Multimap,Multiset)
- STL - Iterators,algorithms,functors

C++ Additional topics,
- Function template
- Class template
- Exception handling
- Type conversion operator
- Lambda Expression
- Move Semantics
- Namespace
- Assets and buffers

C++ Generic Algorithm Development

Start with Basic algorithm development - Searching, Sorting
Introduction to design patterns
Apply design patterns to solve problems- through hands-on programming