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Armenian Code Academy

“Intermediate C++” course

OOP

- User defined types, structs and classes, member functions, access control, const-correctness
- Special members: constructors, destructors, copy-assignment, etc.
- Exceptions, exception safety, RAII
- Operator overloading
- Inheritance, virtual functions, polymorphism. Elements of object-oriented design, design patterns
- Function templates and class templates

STL

- Separation of containers and algorithms, the iterator pattern, iterator categories
- Sequential containers: list, deque, vector, etc. Iterator invalidation
- Associative containers: map, set, unordered_map, unordered_set
- The algorithms library. Iterator ranges. Algorithms with output ranges, Algorithms with predicates. Lambda-expressions.

Miscellaneous

- Arrays, pointers and references and relationship thereof. Pointers and const
- The C++ compilation model. Header and source files, declarations and definitions. The One Definition Rule.
- Regular expressions
- Introduction to multithreading
- Introduction to GUI programming with Qt
- Data Structures: lists, trees, graphs. Basic algorithms on graphs.