

## **Week 1 - Pointer, Arrays, and Structs**

[Introduction to Structs](#)

[Arrays \(Part I\)](#)

[Header files](#)

[C++ Makefile Tutorial](#)

[Review of Pointers](#)

[Review of Structures](#)

[POINTERS in C++ - YouTube](#)

[Arrays in C++ - YouTube](#)

[C++ Header Files - YouTube](#)

[How to Create a Simple Makefile - YouTube](#)

[Intro to Object-oriented Programming](#)

## **Week 2 - File I/O & Intro to OOP**

[Basic file I/O](#)

[Input/output with files](#)

[Classes Tutorial](#)

[Working with Files - YouTube](#)

[Tips for File Handling - YouTube](#)

[Writing Custom File Structures - YouTube](#)

[Reading Custom File Structures - YouTube](#)

[CLASSES in C++ - YouTube](#)

[CLASSES vs STRUCTS in C++ - YouTube](#)

### **Week 3 - Class Constructors**

[Constructors](#)

[Constructors in C++ - YouTube](#)

[The "this" keyword in C++ - YouTube](#)

[CONST in C++ - YouTube](#)

[Static for Classes and Structs in C++ - YouTube](#)

### **Week 4 - The Big Three**

[The copy constructor](#)

[Special members](#)

[Destructors in C++ - YouTube](#)

[Copying and Copy Constructors in C++ - YouTube](#)

[UML Class Diagram Tutorial - YouTube](#)

### **Week 5 - Inheritance & Operator Overloading**

[Introduction to operator overloading](#)

[Friend functions and classes](#)

[Friendship and inheritance](#)

[Inheritance in C++ - YouTube](#)

[Visibility in C++ - YouTube](#)

[Operators & Operator Overloading in C++ - YouTube](#)

[Friend functions in C++ - YouTube](#)

## **Week 6 - Virtual Functions and Exceptions**

[Virtual Functions](#)

[Exceptions](#)

[Polymorphism](#)

[More Exceptions](#)

[Virtual Functions in C++ - YouTube](#)

[Virtual Destructors in C++ - YouTube](#)

[Dynamic Casting in C++ - YouTube](#)

[Interfaces in C++ \(Pure Virtual Functions\) - YouTube](#)

[Exceptions - YouTube](#)

[More Exceptions Examples - YouTube](#)

## **Week 7 - Standard Template Library**

[Function templates](#)

[Templates](#)

[Containers](#)

[Templates in C++ - YouTube](#)

[Dynamic Arrays in C++ \(std::vector\) - YouTube](#)

[Iterators in C++ - YouTube](#)

## **Week 8 - Iterators and Algorithms**

[Containers library](#)

[Iterators](#)

[Algorithms](#)

[Iterators in C++ - YouTube](#)

[The "auto" keyword in C++ - YouTube](#)

## **Week 9 - Sorting and Linked Lists**

[Sorting - VisuAlgo](#)

[Bubble sort - Wikipedia](#)

[Selection sort - Wikipedia](#)

[Insertion sort - Wikipedia](#)

[Merge sort - Wikipedia](#)

[Linked List \(Single, Doubly - VisuAlgo](#)

## **Week 10 - Big O Notation**

[Big O Notation](#)

[Big-O Algorithm Complexity Cheat Sheet](#)