# C++ 11, Part 4 of 4: Arrays, Strings, and Functions

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**Meet the expert:** Peter Thorsteinson has been working for two decades in many areas of Microsoft-based software development technologies, including all the latest languages, frameworks, and tools. He has been involved in several large scale software development projects and has authored and co-authored several books and courses relating to ASP.NET, AJAX, JavaScript, WPF, WCF, WF, ADO.NET, and LINQ. Peter is currently focusing on ASP.NET MVC, jQuery, Task Parallel Library, Windows Azure, and SharePoint Development.

**Prerequisites:** This course assumes that students have some rudimentary understanding of general programming concepts. Watching Parts 1 and 2 in this series will be helpful. As with any such course, the more experience you bring to the course, the easier it will be to understand the material that is presented. As a result, if you know C# or Java, that might be somewhat helpful.

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**Course description:** Learn how arrays are defined, accessed, manipulated, and iterated over. Discover how to use and work with character data with strings and how C++ handles copying and string reference semantics under the covers while processing string data. Take a look at how to define functions and what libraries of useful functions exist out of the box along with control structures and looping constructs.

**Course outline:**

**Arrays**
- Introduction
- Demo: Arrays
- Demo: Initialization and Passing Arrays
- Demo: Multidimensional Arrays
- Summary

**Standard Library Strings**
- Introduction
- Demo: The String Class
- Demo: Const References
- Demo: Different Behavior
- Summary

**More Standard Library Strings**
- Introduction
- Demo: Raw String Literals
- Demo: String Methods
- Demo: Sharing Addresses
- Summary

**Functions**
- Introduction
- Demo: Function Basics
- Demo: Methods
- Demo: Inline and Recursive Functions
- Summary

**More Functions**
- Introduction
- Demo: Review
- Demo: Coor Class
- Demo: Lambda Functions
- Demo: Lambda Functions Cont.
- Summary

**Function Pointers**
- Introduction
- Demo: Calling Functions
- Demo: Using Function Pointers
- Demo: Function References
- Summary

**Control Statements**
- Introduction
- Demo: Compound Statements
- Demo: If Statements
- Demo: While and Do While Loops
- Demo: For Loops
- Summary