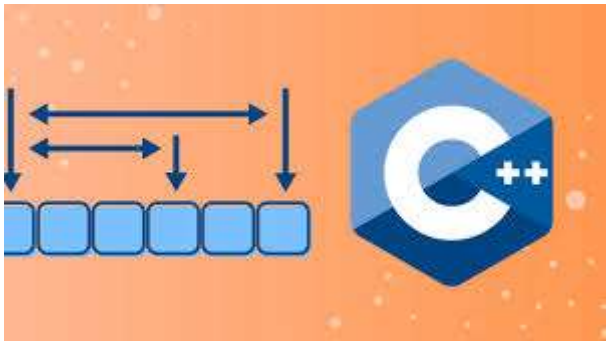
Week 2

Posted Mar 10, 2025 11:39 AM

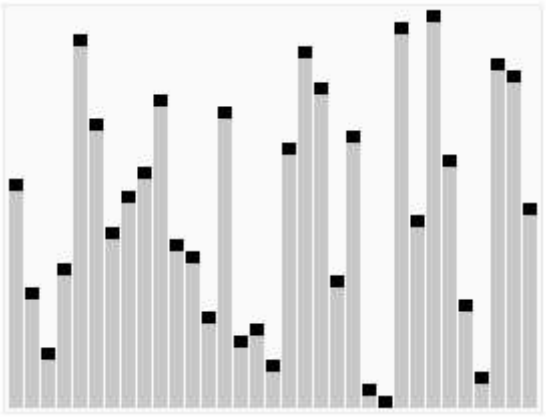


I've seen that you have all jumped into the zyBooks platform and are inching your way into becoming programmers!! You'll find that those lessons all build upon each other and your knowledge will grow as each week passes.

Last week, the lessons introduced you to the basics of C++ programming, and how to set up the environment and compile code. Then we dove headfirst into running actual programs with the concepts we just learned (flowcharts, pseudocode, arrays, and vectors).

The activities and labs in zybooks hopefully get you all warmed up for real challenges next. (For week 2 you should start section 3 of zybooks, please follow the link in the class modules)

During week 2, we will be looking over the different algorithms and how we can use them in our programming. Constructing them, iterating over them, and storing and retrieving complex structures within them are fundamental techniques that you will use throughout your programming career.



This week in algorithms: selection sort, insertion sort, quicksort, merge sort... oh my...

As you work through this module, you will take advantage of these ADTs to investigate some of the many sorting algorithms you will encounter: Selection Sort, Insertion Sort, Quicksort, and Merge Sort. You will also briefly explore the world of recursion, in which a function calls itself! I'll have some video lectures for you regarding recursion and sorting using recursion.

here are some refs for quick sort and merge sort:

https://www.geeksforgeeks.org/quick-sort/?ref=lbp

https://www.geeksforgeeks.org/merge-sort/?ref=lbp

In the week 2 assignment, you will implement two vector sorting algorithms (aka selection sort vs. quick sort) and compare the running time between the two. please read the assignment rubrics carefully here:

https://learn.snhu.edu/d2l/le/content/1115992/viewContent/19033965/View

Don't forget these useful resources:

Video: Selection Sort in 3 Minutes opens in new window (2:42)
This video demonstrates how a selection sort works.

Video: Insertion Sort in 2 Minutes opens in new window (2:18)
This video demonstrates how an insertion sort works.

Video: Quicksort

Reading: Choosing the Right Data Structure to Solve Problems opens in new window
This resource provides advice for choosing the correct data structures and algorithms for specific situations.

Reading: Know Thy Complexities! opens in new window
This resource discusses the Big-O complexities of common algorithms. An accessible version is also available on the Big-O Cheat Sheet opens in new window website.

If you are interested in getting live help from tutors and coaches, we offer a variety of workshops and drop-ins. Here is a link with the complete schedule and more information:

https://my.snhu.edu/Offices/COCE/AcademicSupport/Pages/Academic-Support-Homepage.aspx