New Beginnings
Practice Module I (Summer 2018)
Tuesdays and Thursdays
10:30AM-2:30M

Goals

1. Introduce students to the fundamental concepts of computing.
    a. Problem solving, the design of algorithms for solutions, and the translation of tested algorithms into the grammar of a high-level computer language.
2. Introduce data types, variables, conditionals, loops, functions, arrays, pointers, dynamic memory, linear linked lists, recursion, and multi-dimensional arrays
3. Introduce data abstraction and building implementations of abstract data types(ADT).
    a. Abstractions include lists of several types, stacks, queues, trees, binary trees, B-trees and graphs. Recursion and key transformation (hashing) are examined.

Texts

A Book on C, Fourth Edition by Al Kelly and Ira Pohl, 1997 [as low as $13.00 + shipping on Amazon (used)]

Daily Schedule

10:30-12:20 Lecture
12:20-13:00 Break
13:00-14:30 Lecture/Lab

Grading

This is a Pass/No Pass class. At the end of the term, your programming proficiency exam will determine if we recommend for you to move forward to the Fall Term of New Beginnings.

Calendar

DATE	TOPICS	NOTES
July 3 (Tuesday)	Orientation – programming tools What's a computer and how do I program one?	SSH, Linux, vi Johnniac
July 5 (Thursday)	C syntax, Data Types and Control Flow	KP Chap 2, 3 & 4
July 10 (Tuesday)	Data Types, Control Flow and Functions	KP Chap 3, 4 & 5
July 12 (Thursday)	Arrays and Strings	KP Chap 6
July 17 (Tuesday)	Pointers and Dynamic Memory	KP Chap 6
July 19 (Thursday)	Structures and Unions	KP Chap 9
July 24 (Tuesday)	Structures and Lists	KP Chap 10
July 26 (Thursday)	More Structures and List Processing (lists)	KP Chap 10
July 31 (Tuesday)	I/O and Arrays of Structs	KP Chap 11
August 2 (Thursday)	More Structures and List Processing (trees)	KP Chap 10
August 7 (Tuesday)	**Proficiency Demonstration**	
August 9 (Thursday)	Structures & List Processing – stacks & queues	KP Chap 10
August 14 (Tuesday)	Trees	KP Chap 10
August 16 (Thursday)	Searching and Sorting	KP Sections 6.7, 6.9, 8.5, 8.15
August 21 (Tuesday)	Object Oriented Programming and C++	http://preview.tinyurl.com/ycgsvojd
August 23 (Thursday)	Project Work – FAB 88-03	
August 28 (Tuesday)	C++	KP Chap 13
August 30 (Thursday)	C++	
September 4 (Tuesday)	Other Paradigms – Logic Programming	KP Chap 13
September 6 (Thursday)	Other Paradigms – Logic Programming	KP Chap 13
September 11 (Tuesday)		
September 13 (Thursday)	Final Proficiency Demonstration (10:15-12:05)	