

CS320 (C Programming) Challenge Exam Preparation Notes

Textbook for Reference:

Johnsonbaugh, Richard & Kalin, Martin (1996). *Applications Programming in ANSI C (3rd edition)*. Upper Saddle River: Prentice-Hall. ISBN: 0-02-361141-3.

The CS320 exam consists of 2 parts.

The first part is a written exam. You will have 3 hours to complete the written exam.

The second part is a take-home programming exam. You will have 2 weeks to complete the programs. Your programs should be coded using an ANSI C compiler (Dev-C++ is recommended) in CONSOLE mode.

The Dev-C++ compiler may be downloaded free from:

<http://www.bloodshed.net/dev/devcpp.html>

You must design and write the program code and return it to the testing office in the allotted time. The program will include required code documentation standards.

The CS320 exam may cover any of the following C Programming topics:

- Design, implementation, testing, and debugging a program that uses:
 - Storage classes and types for constant and variable declaration
 - Arithmetic Computations
 - Structured Input/Output
 - Conditional and iterative control structures
 - Definition and usage of functions with proper parameter passing
 - Recursion
 - Text data file I/O
 - Enumerated data types
 - One-dimensional, parallel, and multi-dimensional Arrays
 - List sorting
 - Ordered and un-ordered list searching
 - Declaration and usage of structures and arrays of structures
 - Declaration and usage of dynamic data variables (using pointers)
 - Pointer implementation of linked lists
 - Command line arguments
 - Stacks and/or Queues.
- Structure charting, flowcharting, and using a high-level programming language to implement algorithms and solutions to problems, using top-down design.
- Use of structured (functional) decomposition to break a program into smaller pieces
- Identification of the deficiencies in the design and implementation of a program
- Program testing