ICS4 Exam Review

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| Counting     * Decimal, binary, hex * ASCII/unicode * Character mapping * Bits and bytes       Algorithms     * What’s an algorithm * Binary vs. linear searches * Sort algorithms * Algorithm efficiency (run time and computational complexity analysis, order of growth, best/worst cases) * Recursive algorithms (e.g. merge sort)       Code Maintenance and Testing     * Test suites * Black box vs. Glass Box * Assert * Internal documentation (doc comments, docstrings, block comments, line comments) * External documentation (Help files, training materials, user manuals)   General Python Things   * Basic math and comparisons * Logic operators: &&, ||, ! * Data types * User input * Conditionals * Variables (local vs global) * Loops, iterating over lists   Topics in Computer Science   * Cryptography * Algorithm bias * Ethics (plagiarism, privacy, team projects) | Project Planning/ UMLs     * Flow diagram * Use case diagram * Pseudocode * Gantt chart * Planning stages * Managing source code, version control       File I/O     * Creating, reading, and writing to/from external files       Python Lists     * length of strings and arrays/lists * iteration * indices * mutating lists (appending, removing, replacing, etc.)       Matrices     * basic operations * applications   Modular Design     * functions, classes (parameters/arguments, methods, attributes) * advantages * OOP   Review past quizzes and assignments and content on the class site |