

CSE1301 Computer Programming: Lecture 35 Revision

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Topics

- Type of questions
- What do you need to know?
- About the exam
- Exam technique
- Staff consultation
- Revision Drop-in Center
- Sample questions

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Types of Questions

- Mid-Semester Test
 - multiple-choice questions
 - coding/programming questions
- Sample Past Exam
 - short-answer questions
 - coding/programming questions
 - sample solutions on the web and in class
 - *no True/False questions on 2005 exam*

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Types of Questions (cont)

- A small number of questions from past papers will be made available on the web.

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About the Exam

- 10 minutes reading time
- 3 hours duration
- 180 total marks
- No calculators, books, notes, etc.

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Exam Structure

- 30 Multiple Choice (30 x 1 mark)
- 20 Short Answer (20 x 2 marks)
- Longer Questions
 - Algorithms, flowcharts, structure charts, test data, program execution, output, debugging
 - Coding/programming questions

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What Do You Need to Know?



Coverage:

- All lectures, practicals, tutorials and readings

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Overview

- Gates
 - AND, OR, NOT
- Binary representation
 - bit, byte, word
 - integer: decimal to binary, unsigned, signed magnitude, 2's complement, excess-*k*
 - float: IEEE standard
 - precision, under/overflow
 - floating point arithmetic

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Overview (cont)

- Values
- Variables
- Types
 - **char, int, float, const, typedef, struct**
 - arrays (2-dim), strings, **int** for “Boolean”
- Operations
 - initialization
 - arithmetic, Boolean expressions, precedence
 - string library functions

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Overview (cont)

- Pointer Basics
 - when to use **&** and *****
- Structures
 - definition vs. instance
 - accessing members/elements
 - pointers to structs
 - array of structures
 - structures within structures

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Overview (cont)

- Flow of control
 - Flow diagrams/charts
- Selection
 - **if...else**
 - nested selection
 - cascaded selection
- Iteration
 - **while, for, break**
 - nested loops

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Overview (cont)

- Functions
 - Prototypes
 - Definition
 - Parameters
 - actual, formal, arrays, structs, pointers
 - Return values
 - Variable scope
 - Recursion

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Overview (cont)

- Streams
 - `stdio`, `stderr`, `stdout`
- `printf()` and `scanf()`
 - conversion specifiers
 - return values
 - the `&` operator
- Files
 - `fopen()`, `fclose()`, `fprintf()`, `fscanf()`

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Overview (cont)

- Software Engineering
 - development process
 - design: top-down, bottom-up
 - structure chart: control and data coupling
 - test data
 - *(not included: Bingo)*

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Overview (cont)

- Lists
 - a list as an array
 - operations
 - addition, deletion, search
- Searching
 - linear search, binary search
- Sorting
 - selection sort, insertion sort, bubble sort
- Complexity
 - Big-O notation

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Exam Technique

- Don't Panic
- Make use of reading time
- Go for the marks → Attempt the questions in the order that gives the best result
- There is no penalty for incorrect answers to multiple choice questions (educated guess).
- Don't spend too much time on any question
 - Approximately 1 minute per mark
- Indicate clearly which question you are attempting
- Don't forget to write (correctly) your ID! 16

All the best for the Exam



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