## YALE UNIVERSITY DEPARTMENT OF COMPUTER SCIENCE

CPSC 427: Object-Oriented Programming

Handout #11 December 12, 2018

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## Study Guide to the Final Exam

## **Exam Topics**

You are responsible for the topics covered in the whole course. Emphasis will be on the material since the midterm: Lecture notes 13–25, the accompanying class demos, and the concepts used in homework assignments 3–8.

Not everything in the lecture notes was covered in class, but you should read any slides that were skipped over to make sure you have a general understanding of what they are about.

## Index to the Lecture Notes

Below is a list of all sections and subsections from the lecture notes along with links to the files where they appear. You can use this as a high-level overview of the course.

| 1  | Abou                                  | t This Course             | [lecture 01]                      |
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| 2  | Topics to be Covered                  |                           | [lecture 01]                      |
| 3  | Kinds of Programming                  |                           | $\underline{[\text{lecture }01]}$ |
| 4  | Why                                   | C++?                      | [lecture 01]                      |
| 5  | C++ Programming Standards             |                           | $\underline{[\text{lecture }01]}$ |
| 6  | Task                                  | List                      | [lecture 02]                      |
| 7  | C++                                   | Overview                  | [lecture 02]                      |
|    | 7.1                                   | C++ Language Design Goals | [lecture 02]                      |
|    | 7.2                                   | Comparison of C and C++   | [lecture 02]                      |
| 8  | 8 Building a Project                  |                           | [lecture 02]                      |
|    | 8.1                                   | C/C++ Compilation Model   | [lecture 02]                      |
|    | 8.2                                   | Project management        | $\overline{[\text{lecture }02]}$  |
|    | 8.3                                   | A sample project          | [lecture 02]                      |
| 9  | 9 Integrated Development Environments |                           |                                   |
| 10 | 10 Submission Instructions [lectur    |                           |                                   |
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|    | 11.1                                  | Program specification     | [lecture 03]                      |
|    | 11.2                                  | Monolithic solution       | [lecture 03]                      |
|    | 11.3                                  | Modular solution in C     | [lecture 03]                      |
|    | 11.4                                  | Modular solution in C++   | [lecture 03]                      |
| 12 | 2 Classes                             |                           | [lecture 03]                      |
|    | 12.1                                  | Header file               | [lecture 03]                      |
|    | 12.2                                  | Implementation file       | [lecture 03]                      |

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|    | 12.3 Main program 12.4 Building InsertionSortCpp | $\frac{[\text{lecture } 03]}{[\text{lecture } 03]}$ |  |
| 13 | Problem Set 2 Preview                            |   |  |
| 14 | C++ I/O  |   |  |
| 15 | End of File and I/O Errors                       |   |  |
| 16 | Functions and Methods                            | [lecture 05]  |  |
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|    | 16.2 Choosing Parameter Types                    | [lecture 05]  |  |
|    | 16.3 The Implicit Argument                       | [lecture 05]  |  |
| 17 | Derivation                                       | $\underline{[\text{lecture }05]}$                   |  |
| 18 | Objects of Class Types                           | [lecture 05]  |  |
| 19 | Construction, Initialization, and Destruction    | $\underline{[\text{lecture } 06]}$                  |  |
| 20 | Reference Types                                  | $\underline{[\text{lecture } 06]}$                  |  |
| 21 | Reference Types (cont.)                          | $\underline{[\text{lecture }07]}$                   |  |
| 22 | Etudes in Coding                                 | $\underline{[\text{lecture }08]}$                   |  |
| 23 | Problem Set 1 Design Issues                      | $\underline{[\text{lecture }08]}$                   |  |
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| 25 | Following Specifications                         | $\underline{[\text{lecture } 09]}$                  |  |
| 26 | Bytes and Characters                             | $\underline{[\text{lecture } 09]}$                  |  |
| 27 | Overview of PS3                                  | [lecture  09]                                       |  |
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|    | 28.1 Stack class                                 | [lecture 10]  |  |
|    | 28.2 Brackets class                              | [lecture 10]  |  |
|    | 28.3 Main file                                   | [lecture 10]  |  |
| 29 | Storage Management                               | [lecture 10]  |  |
| 30 | Copying and Assignment                           | [lecture 11]  |  |
| 31 | Custody of Objects                               | [lecture 11]  |  |
| 32 | Move Semantics                                   | [lecture 11]  |  |
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| 38 | Polymorphic Derivation                           |   |  |
| 39 | Uses of Polymorphism                             | $\underline{[\text{lecture }15]}$                   |  |
| 40 | Introduction to the C++ Standard Library         | $\underline{[\text{lecture }15]}$                   |  |
| 41 | Remarks on Upcoming Assignment PS5               | $\underline{[\text{lecture } 16]}$                  |  |

| 42 | Remarks on PS4-Consensus               | [lecture 16]                       |
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| 49 | Linear Data Structure Demo             | [lecture 18]                       |
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| 71 | Function-Like Constructs               | $\underline{[\text{lecture }25]}$  |
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