

CMSC 132: Object-Oriented Programming II



Final Exam & Summary

Department of Computer Science
University of Maryland, College Park

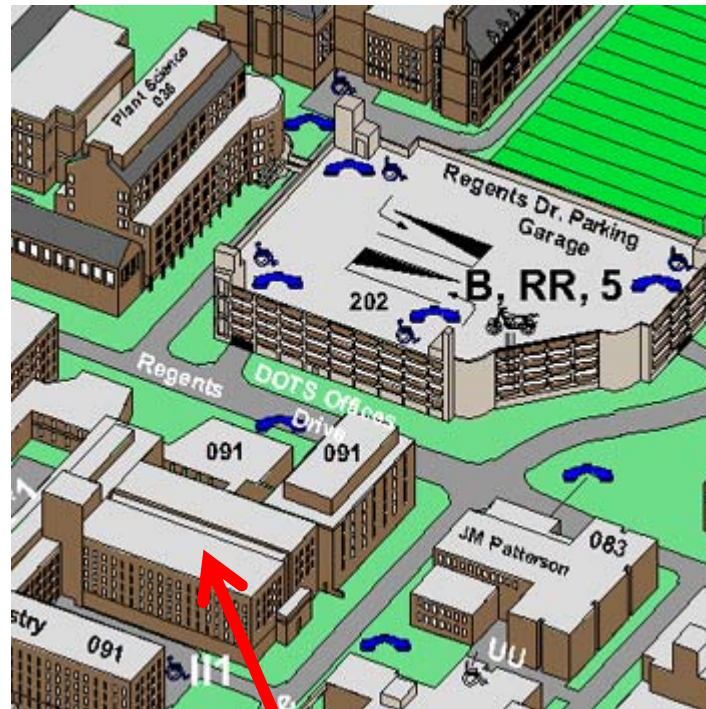
Final Exam Location

■ Time

- Friday
- Dec 14th
- 4-6pm

■ Place

- Chemistry 1407
- CHM (Bldg 091)



Final Exam Topics

- **50% topics from midterm 1 & 2**
 - Algorithms, data structures, complexity
 - Software engineering, OO design
 - Multithreading & synchronization in Java
- **50% new topics**
 - Networking & networking support in Java
 - Sorting algorithms
 - Algorithm strategies
 - Design patterns
 - Effective Java
 - Advanced trees

Question Formats

- **True/ false**
- **Fill-in-the-blank**
 - **Short answers expected**
- **Multiple choice**
- **Analyze complexity**
- **Apply algorithms**
- **Design OO solution in UML**
- **Write code**

CMSC 132 Summary

- **We covered**
 - Object-oriented software development
 - Algorithms & data structures
- **Provided brief glimpse of CS applications**
 - Human computer interfaces (GUIs)
 - Machine learning (Markov models)
 - High performance computing (Multithreading)
 - Networking, compression, databases
- **Hope you improved**
 - Programming skills (coding, testing, debugging)

What Comes Next?

- **CMSC 212 – Low level programming**
 - **Treating references as memory addresses (in C)**
- **CMSC 250 – Discrete structures**
 - **Simple discrete math & proofs**
- **CMSC 311 – Computer Organization**
 - **How computers work**
- **CMSC 330 – Programming Languages**
 - **Different programming languages & paradigms**
- **CMSC 351 – Algorithms**
 - **Analyze & prove complexity of algorithms**

What Comes Next?

- **Building computer systems**
 - 411 architecture, 412 operating system, 414 security, 417 networking, 430 compilers
- **Building software**
 - 433 programming technologies, 434 human-computer interfaces, 435 software engineering
- **Theory of computing**
 - 420 data structures, 451 advanced algorithms, 452 computation theory, 456 cryptology
- **Applications**
 - 421 artificial intelligence, 423 bioinformatics, 424 databases, 426 image processing, 427 graphics

Computer Science

■ Very interesting

- Once you get beyond basic programming
- Improvements in software tools make it increasingly easy to provide a lot of functionality with little code

■ Useful in many fields

- Engineering, physical sciences, biological sciences
- Information management for businesses (\$\$)

■ In high demand

- Always in top 10 in # of open job positions
- \$52K average starting salary for 2007 grads
- **Skilled** software professionals always in demand

A Reminder

- **Fill in class evaluations**

- <https://www.courseevalum.umd.edu/portal>

- **Deadline Dec 12**

- **Help us improve the course...**

Finally...

Good luck on Exam

Have a nice Xmas!