



[https://s3.amazonaws.com/piazza-resources/iixlh9wbyf1s8/ik052dkhqx7f2/midterm_exam_topics.txt?](https://s3.amazonaws.com/piazza-resources/iixlh9wbyf1s8/ik052dkhqx7f2/midterm_exam_topics.txt?AWSAccessKeyId=AKIAIEDNRLJ4AZKBW6HA&Expires=1458558348&Signature=eCaupEy%2BIFM2zHVYJy4oKK4qYX0%3D)

[AWSAccessKeyId=AKIAIEDNRLJ4AZKBW6HA&Expires=1458558348&Signature=eCaupEy%2BIFM2zHVYJy4oKK4qYX0%3D](https://s3.amazonaws.com/piazza-resources/iixlh9wbyf1s8/ik052dkhqx7f2/midterm_exam_topics.txt?AWSAccessKeyId=AKIAIEDNRLJ4AZKBW6HA&Expires=1458558348&Signature=eCaupEy%2BIFM2zHVYJy4oKK4qYX0%3D)

Midterm Review Topics - CS12/12V

Object Oriented Design:

- Classes
 - Encapsulation
 - Construction
 - private vs public
 - accessor vs mutator functions
 - const member functions
 - const return type
 - implicit vs explicit parameters
 - Initialization lists (make sure you can implement these)
 - Separate compilation (how does -c affect compilation? when do you use it?)
 - Inclusion guards
 - friend functions
 - classes using classes

structs:

- how is it different than a class?
- what's going on in memory, what is stored for each object?
- vector of structs, how to access object's data

File I/O (Streams)

- open, close
- verify open
- input methods (know the rules, how they work, types of arguments needed)
 - >>
 - getline
 - get
- why pass istream/ostream to operator>>/operator<< functions by reference?
- stringstream

Pointers

- address of operator
- dereference (*) operator

Arrays

- array initialization
- [] operator

Sorting & Searching

- Selection sort (with array or vector)

Operator Overloading

- global functions vs member functions (how many parameters/which is implicit parameter?)
- friend functions

Programming Assignments

- Command-line arguments
- preprocessor directives (What does #include "Class.h" do?, #define?)
- Be able to code any part of LABS 1 - 5, PROGRAMS 1 - 3