

CS 250 Exam Topics

Vocabulary

Implementation (.cpp) vs Interface (.h)

constructor

friend

operator

overload

Why not declare all data members public in a class?

What is a constructor?

When does a constructor get called?

What is a default constructor?

Explain what happens in the constructor for RationalSet. Why is this code necessary?

What does it mean to have an overloaded constructor?

How does the compiler decide which constructor to call when you have overloaded constructors?

How do you provide default arguments to a constructor?

You have been asked to write a piece of software that will allow you to read in 10 coordinate points (x, y) from a file and display a blue circle at that location on the screen.

Design a class Point (write only the interface) that your software will use to represent the points.

Design a class PointSet (write only the interface) that your software could use to store all the points.

How is a static data member different than a regular data member in a class?

How is a friend function different from a member function?

Why does operator>> need to be a friend function?

Write code to overload the + operator for Point. This operator should add the xs and ys of two points together to generate a new Point.

What is the difference between procedural and object-oriented programming?

What is the difference between a class and an object?

Remember, class declarations (interfaces) are stored in a header while member function definitions are stored in a class implementation file (.cpp). Why do we separate out the interface in a .h file and the implementation in a .cpp file?

What is overloading? What can be overloaded?

If class X declares function f as a friend, does function f become a member of class X.

Consider the following class declaration and program segment. Assuming z has been properly initialized, answer each question below.

```
class Foo
{
    private:
        int x;
        int y;
        static int z;
    public:
        Foo ()
        {
            x = y = z;
        }
        static void set (int value)
        {
            z = value;
        }
};

// program segment
Foo cFoo1, cFoo2[5];
cout << "Spring Break" << endl;
```

- How many separate instances of the x member exist right before Spring Break is printed out?
- How many separate instances of the z member exist right before Spring Break is printed out?
- How many times is the constructor called during the execution of the above program segment?
- How would you initialize z to a value?

Make sure you understand DNA and DNASet. You need to be able to write code without your notes.

Operator overloading.

Look over problems specified in the lecture notes. There are many good test type questions.