

Exam 2: Friday, 12/14/18 from 1:00pm - 3:00pm

In LC-A1 for Last Names Starting A through O

In LC-B1 for Last Names Starting P through Z

Exam 2 is worth 15% of the final grade

Topics: C++ Stuff

Final From Last Semester

- Write a C++ class (dynamic array class)
- Q 1. write the .h file
- Q 2-X write the methods for the class as if in the .cpp file

include the copy constructor might be asked in a multiple choice as:

Which of the following is the method prototype for the copy constructor:

- MyClass();
- MyClass (MyClass param);
- MyClass (const MyClass& param);

Makefiles and make utility

Big 3:

Copy Constructor

Overloaded Assignment op

Destructor

When the copy constructor gets called?

- when initializing a variable based on another instance of the same type

```
MyClass inst1;
```

```
MyClass inst2 ( inst1 ); // call the copy constructor
```

```
MyClass inst3 = inst1; // call the copy constructor
```

- When making a pass-by-value parameter call

```
void function1 ( MyClass param );
```

```
// in main( ):
```

```
MyClass inst4;
```

```
function1 ( inst4 ); // copy constructor called
```

- When having a return of a instance from a function

```
MyClass function2 ( );
```

```
// in main ( )
```

```
MyClass inst5;
```

```
inst5 = function2( ); // copy constructor called
```

Destructor:

```
~MyClass( );
```

called whenever an instance goes out of scope or is deallocate dynamically

Overloaded assignment op

code of:

```
MyClass& MyClass::operator= ( const MyClass& param);  
{  
    if ( this != &param ) // handles "self assignment" case a = a;  
    {  
        // deallocate the current instance in this  
  
        // make a copy of param into this  
    }  
    return *this; // handles cascading assignments: a = b = c = d;  
}
```

Syntax for inherited classes:

```
class MyClass2 : public MyClass
{ // MyClass2 inherits the data members and method of MyClass except constructors
  ...
}
```

After hinting at writing linked list methods in C++, what should you be thinking about:

- Remember that all data members should be private!
- If a method is "indicated for internal use only" , it should also be private

insert a value into the list (at the front, at the end, in order)

remove a value from a list

remove all occurrences of a value from a list

check if a value exists in a list

count the number of occurrences of a value in a list

count the number of items in the list

get the nth item from a list

print out the values in a list

print out the values in a list backwards

Recursive code:

1. Identify the base cases
2. Identify the recursive cases