The following applies to examples in the segments of the video lectures from C++ For C Programmers Part B 2.10(The Inheritance Mechanism), 2.11(A Derived Class) and 2.12 (Students and Graduate Students).

The student – graduate\_student code as given in the text and lectures(if not yet modified) is outdated. It was initially meant to capture the easily understood ISA relationship between a base class (student) and a publically derived class(graduate\_student).

The code uses char\* to express certain data. This was in use in C and early versions of C++. So it is natural for a C programmer to grasp it. This functionality remains when using routines found in <cstring>. Modern C++ has moved on to the use of <string> as a basic type.

We will give code files for the code as originally displayed in early versions of the course and text and rewrite using string.

The string is a container for type character. Its interface is similar to other sequential container types.

It allows the use of iterators. Here is a small sample of its functionality.

[**size**](http://www.cplusplus.com/reference/string/string/size/)

Return length of string (public member function )

[**clear**](http://www.cplusplus.com/reference/string/string/clear/)

Clear string (public member function )

[**empty**](http://www.cplusplus.com/reference/string/string/empty/)

Test if string is empty (public member function )

**Element access**:

[**operator[]**](http://www.cplusplus.com/reference/string/string/operator%5b%5d/)

Get character of string (public member function )

[**at**](http://www.cplusplus.com/reference/string/string/at/)

Get character in string (public member function )

[**back**](http://www.cplusplus.com/reference/string/string/back/)

Access last character (public member function )

[**front**](http://www.cplusplus.com/reference/string/string/front/)

Access first character (public member function )

**Modifiers**:

[**operator+=**](http://www.cplusplus.com/reference/string/string/operator+=/)

Append to string (public member function )

[**append**](http://www.cplusplus.com/reference/string/string/append/)

Append to string (public member function )

[**swap**](http://www.cplusplus.com/reference/string/string/swap/)

Swap string values (public member function )

[**pop\_back**](http://www.cplusplus.com/reference/string/string/pop_back/)

Delete last character (public member function )

**String operations**:

[**c\_str**](http://www.cplusplus.com/reference/string/string/c_str/)

Get C string equivalent (public member function )

[**find**](http://www.cplusplus.com/reference/string/string/find/)

Find content in string (public member function )

[**compare**](http://www.cplusplus.com/reference/string/string/compare/)

Compare strings (public member function )

[**operator+**](http://www.cplusplus.com/reference/string/string/operator+/)

Concatenate strings (function )

[**operator>>**](http://www.cplusplus.com/reference/string/string/operator%3E%3E/)

Extract string from stream (function )

[**operator<<**](http://www.cplusplus.com/reference/string/string/operator%3C%3C/)

Insert string into stream (function )

[**getline**](http://www.cplusplus.com/reference/string/string/getline/)

Get line from stream into string (function )