

Chapter 14:

More About Classes

14.1

Instance and Static Members

Content Discussion

- * What is an inline function?
 - * state advantage/disadvantage of an inline function
- * Why static member functions are not allowed to access the instance variables of a class?

Content Discussion (cont)

- * Why static member functions are not allowed to access the instance variables of a class?
- * instance variables are created for each object.
- * a static member functions is created for the whole class. Therefore, it can be called without creating an object.
- * if the static member function were to access the an instance variable, then to which object that instance variable would belong?
 - * Therefore, by design, the static member functions have no access to the instance variables.

Content Discussion (cont)

- ✿ However, can a non-static member function have access a static member function inside the class?

Content Discussion (cont)

- * Review the staticvariable.cpp and determine the technique of the program
 - * understand default constructor call
 - * static variable declaration and definition
 - * static function call
 - * use of static variable/function by using the class name
 - * local variables in a function and destructor call

14.2

Friends of Classes

Friends of Classes

- * Friend: a function or class that is not a member of a class
 - * inside a friend class, object of the original class has access to private members of the original class
- * A friend function can be a stand-alone function or a member function of another class
 - * It is declared a friend of a class with `friend` keyword in the function prototype

friend Function Declarations

* Stand-alone function:

```
friend void setAVal(int num);  
// declares setAVal function to be  
// a friend of this class
```

* Member function of another class:

```
friend void SomeClass::setNum(int num)  
// setNum function from SomeClass  
// class is a friend of this class
```

friend Function Declarations

- * Review the attached friends.cpp program file
 - * how to create a friend function
 - * how to use super objects in friend function
- * alternative to friend function (use of accessor methods)