

Lab 3

Course: CSE 165

Section: 02L & 03L

Due: Sunday, October 3, at 11:59 pm

All the exercises below are selected from the textbook: Thinking in C++ (volume 1).

1. [Exercise-4 on Page 299] Write two classes, each of which has a member function that takes a pointer to an object of the other class. Create instances of both objects in `main()` and call the aforementioned member function in each class. [\[20 points\]](#)
2. [Exercise-7 on Page 300] Modify Exercise 6 so that `Nest` and `Egg` each contain private data. Grant friendship to allow the enclosing classes access to this private data. [\[20 points\]](#)
3. [Exercise-14 on Page 300] Create a `StackOfInt` class (a stack that holds ints) using the “Cheshire cat” technique that hides the low-level data structure you use to store the elements in a class called `StackImp`. Implement two versions of `StackImp`: one that uses a fixed-length array of `int`, and one that uses a `vector<int>`. Have a preset maximum size for the stack so you don’t have to worry about expanding the array in the first version. Note that the `StackOfInt.h` class doesn’t have to change with `StackImp`. [\[25 points\]](#)
4. [Exercise-6 on Page 326] Modify the `Handle.h`, `Handle.cpp`, and `UseHandle.cpp` files at the end of Chapter 5 to use constructors and destructors. [\[15 points\]](#)
5. [Exercise-9 on Page 656] Inherit a class `StringVector` from `vector<void*>` and redefine the `push_back()` and `operator[]` member functions to accept and produce `string*`. [\[20 points\]](#)

Requirements:

- * Usage of spaces, blank lines, indentation, and comments for readability
- * Descriptive names of variables, functions, structs, classes, and objects (if any)
- * Appropriate usage of structs, classes, and objects (if any)

Late Penalties:

- * 10-point deduction per day late until zero