Computer Science 2510 - Lab 8

Readings

- Class Notes
- Textbook: Chapter 19

Objectives

- To become familiar with vectors and templates.

Notes

- Most of the exercises in this lab were taken from the "Drill" section of Chapter 19 of the textbook (Bjarne Stroustrup, *Programming - Principles and Practice Using C++*, Second edition, Addison-Wesley, 2014, ISBN 978-0-321-99278-9.)

Lab Exercises

1. Chapter 19 Drills

Remember to test after each step.

1.1. Define `template<typename T> struct S { T val; };`.

1.2. Add a constructor, so that you can initialize with a `T`.

1.3. Define variables of types `S<int>`, `S<char>`, `S<double>`, `S<string>`, and `S<vector<int>>`; initialize them with values of your choice.

1.4. Read those values and print them.

1.5. Add a function template `get()` that returns a reference to `val`.

1.6. Put the definition of `get()` outside the class.

1.7. Make `val` private.

1.8. Do 4 again using `get()`.

1.9. Add a `set()` function template so that you can change `val`.

1.10. Replace `set()` with an `S<T>::operator=(const T&)`. Hint: Much simpler than Section 19.2.5.

1.11. Provide `const` and non-`const` versions of `get()`.

1.12. Define a function `template<typename T> read_val(T& v)` that reads from `cin` into `v`.

1.13. Use `read_val()` to read into each of the variables from 3 except the `S<vector<int>>` variable.

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