

OOP Final Project

Due Monday, May 8

For the following project, you can work in groups of 3 (or less if you wish). Previously in the class you have written improvements to the IntArray class. The IntArray class is similar to the vector class in the standard library. In this project, you will reproduce the `std::vector` class, including templates, typedefs, member functions and related non-member functions.

A full description of the properties of `std::vector` can be found at <https://en.cppreference.com/w/cpp/container/vector>

You should try to include **all the functionality of the vector class** except the following:

- (1) You don't need to worry about allocators (just use the **new** operator when you need to allocate memory).
- (2) Do not implement any features associated with C++ 23.
- (3) For the various typedefs that you need, make the simplest choices that you can (for example, `typedef T* pointer`).
- (4) You should call your class something like `my_vector`. This class **cannot** use `std::vector` for its data member or in any of its member functions.
- (5) You may not be able to reproduce all of the vector class, but you should turn in whatever you have completed by the project deadline.

You must email me your solutions as follows. Only one final email per team. The email must say who the team members are. You must have a test program. All of your code must be in a single file.