CSCE 240 HOMEWORK 5 DUE: JUN 13 2024

You must submit a zipped, **and only zipped**, archive of your homework directory, hw5. The directory must contain, at a minimum, the files and directories

- `hw5/inc/statistic.h`,
- `hw5/src/statistic.cc`,
- `hw5/inc/median.h`,
- `hw5/src/median.cc`,

Name the archive submission file hw5.zip

I will use my own makefile to compile and link to your submission files. You must submit these four files at minimum. All others will be ignored.

This assignment tests your ability to

1. Implement classes in a namespace,
2. Create and implement a class hierarchy,
3. Explore overriding methods,
4. Create a pure virtual method, while
5. Maintaining memory in an RAII environment.

Read the provided header file documentation for instructions on method behavior. You will likely want to provide the one necessary override in `hw5::Median` class to allow for a concrete child class of `hw5::Statistic`. Once you have that override in place, focus on the parent class `hw5::Statistic`.

In addition to documentation, I provide several tests which will link to your classes and provide basic illustration of class functionality. **I would suggest a more rigorous testing scheme, especially testing your assignment operator**. If you would like some guidance here, ask me in class.

The point allocation is as follows:

- Styled `hw5/inc/statistic.h`: 0.5 points
- Styled `hw5/src/statistic.cc`: 0.5 points
- Compilation of `bin/statistic.o`: 0.5 points.
- Build of `test-statistic`: 0.5 points.
- Correct behavior of `hw5::Statistic::Statistic()`: 1.0 points.
- Correct behavior of `hw5::Statistic:: Statistic()`: 1.0 points.
- Correct behavior of `hw5::Statistic::Collect(double)` 1.0 points.
- Correct behavior of `hw5::Statistic::operator=(const hw5::Statistic&)`: 1.0 points.
- Styled `hw5/inc/median.h`: 0.5 points
- Styled `hw5/src/median.cc`: 0.5 points
- Compilation of `bin/median.o`: 0.5 points.
- Build of `test-median`: 0.5 points.
- Correct behavior of `hw5::Median::Median(const hw5::Median&)` 1.0 points.
- Correct behavior of `hw5::Median::Calculate` 1.0 points.