CS 150 Lecture 25 Exercises

Complete each of the exercises below and upload to Canvas before the deadline.

Exercise 1 - Defining Classes

Complete this [**date.h**](https://codecheck.it/files/1911112022a71beo4qwko6d6zdnp8pwfcjl) file so that the main program compiles, links and runs.

| *Screenshot of the tested code passing.* |
| --- |

Exercise 2 - Implementing Members - writing Stubs

Open **date.cpp** and [stub the member functions](https://codecheck.it/files/1911112146b0lq7w81ct4j5bwcp3ozoqm9p) so that main compiles links and runs.

| *Screenshot of the tested code passing.* |
| --- |

Exercise 3 - The Data Member

Data members are used to store the date. The C language has a type for this, **time\_t**, is defined inside **<ctime>**. Add a data member [to your header](https://codecheck.it/files/19111121364qu6i3g304z9vicn75r6sd1xd) and check it.

| *Screenshot of the tested code and the passing score.* |
| --- |

Exercise 4 - time, strftime and Today

The **default constructor** is used to initialize all of the data members. The function **time()** queries the system clock and returns the current time as a **time\_t**. The **gmtime()** library function converts that timestamp to calendar time (a **struct** **tm**), and the **strftime()** function prints calendar time as a custom string. Use these library functions to [implement the default constructor and the **toString()** member function](https://codecheck.it/files/19111122012spocv51enf1qqjnf0vi1d7p8). [Reference](https://en.cppreference.com/w/cpp/chrono/c/strftime).

| *Screenshot of the tested code and the passing score.* |
| --- |

Exercise 5 - The Working Constructor

How do we create a **Date** object that represents Christmas? We have to write a **working constructor**: one that allows us to supply values for day, month and year. Of course, since our data is not stored as month, day, year, we have to convert it.

That's where the [structure **tm**](https://en.cppreference.com/w/cpp/chrono/c/tm), defined in the **<ctype>** header, comes in. It contains members for day, month and year (as well as several others). In addition, we can convert between our **time\_t** data and the calendar type **tm**, using the functions **mktime()** and **gmtime(**). Use these library facilities to [write the working constructor](https://codecheck.it/files/19111224342ukdn7qzfm1dz5oma86u5megx), and then to create the **Date** **christmas**, and to print it.

| *Screenshot of the tested code and the passing score.* |
| --- |