# Homework #1 – Class Date

In this assignment you are asked to implement a Date class representing a month, day, and year. The following UML class diagram shows all attributes and behaviors for class Date.
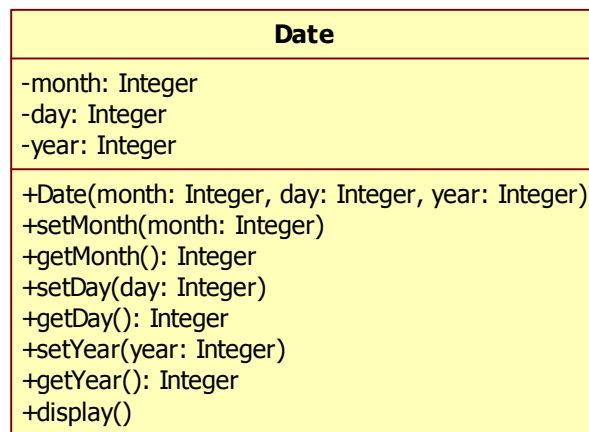
| Date |
|---|
| -month: Integer<br>-day: Integer<br>-year: Integer |
| +Date(month: Integer, day: Integer, year: Integer)<br>+setMonth(month: Integer)<br>+getMonth(): Integer<br>+setDay(day: Integer)<br>+getDay(): Integer<br>+setYear(year: Integer)<br>+getYear(): Integer<br>+display() |

*Figure 1. UML class diagram for class Date*

1. **(2 points)** Create a class `Date` that includes three pieces of information as private data members – a month (type `int`), a day (type `int`) and a year (type `int`).
2. **(1 point)** Provide a public `set` and a `get` function for each data member (`setMonth`, `getMonth`, `setDay`, `getDay`, `setYear`, `getYear`).
3. **(1 point)** Provide a public constructor with three parameters that uses the parameters to initialize the three data members.
4. **(2 point)** Assume that the values provided for the year and day are always correct, but ensure that the month value provided to the constructor and `setMonth` is in the range 1-12; if it isn't, set the month to 1 and output an error message to `cerr` indicating that there was an attempt to set an invalid month value.
5. **(1 point)** Provide a member function `display` that outputs to `cout` the month, day, and year separated by forward slashes (/) (e.g. "6/4/2011").
6. **(2 points)** Write a test program that demonstrates class `Date`'s capabilities. Your test program should call all of class `Date`'s public functions.
7. **(1 point)** Make sure your source code is well-commented, consistently formatted, uses no magic numbers/values, follows a consistent style, and is ANSI-compliant.

**Place all source code and a screen capture of the output produced by your program in a single Word or PDF document. Submit this document.**