

# Tutorial 5

W22 – COMP 1006/1406 – Introduction to Computer Science II

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## Objectives

Practice using abstract things and the Comparable interface.

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## Notes

Exercise 1 is asking you to think about the problem at hand (which is Exercise 2). You will need to read up on enums in Java and think about how you can modify the provided enum class so it can be easily used in Exercise 2.

Exercise 2 is asking you to override the **toString()** and **compareTo()** methods in the Date class.

Note: you must be using Java 14 (or higher) for the Date class to compile.

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Submit your **MyDate.java** file to Brightspace.

### EXTRA READING:

The provided Date class uses a **switch expression** in one of its constructors. This is different than using a **switch statement**. For more information on the various ways that you can use switch (including some new ways in Java 17), check out

<https://medium.com/@javatechie/the-evolution-of-switch-statement-from-java-7-to-java-17-4b5eee8d29b7>

## QUESTION 1

Consider the *abstract* **Date** class that is provided.

In Question 2, you will be asked to

- 1) Override the **toString** method inherited from Object so that a date is displayed as "DD/MM/YYYY".
- 2) Override the **compareTo** method inherited from the Comparable interface so that two dates can be compared in the natural way. That is, a date that occurs before another in actual time is "less than" the other. Two dates are the same if they have the same year, month and day.

You will need to make a **concrete** subclass of the Date class in order to test your Date class.

You are given a **Month** enum class. You are free to **re-write this enum class as needed**.

For more details about enums, check out the Planet enum that begins with

```
public enum Planet {  
    MERCURY (3.303e+23, 2.4397e6),  
    VENUS   (4.869e+24, 6.0518e6),
```

In the Oracle tutorials: <https://docs.oracle.com/javase/tutorial/java/javaOO/enum.html>

Enums come with some methods already present. Check out the API for some useful methods to help you in this problem.

<https://docs.oracle.com/en/java/javase/17/docs/api/java.base/java/lang/Enum.html>

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## QUESTION 2

And now let's create a new concrete class called **MyDate** that extends **Date**.

- 1) Override the **toString** method inherited from Date so that a date is displayed as "DD/MM/YYYY".
- 2) Override the **compareTo** method inherited from Date (who inherited it from the Comparable interface) so that two dates can be compared in the natural way. That is, a date that occurs before another in actual time is "less than" the other. Two dates are the same if they have the same year, month and day.

You can use the **UseMyDate** to test your code.

You are given a **Month** enum class. You are free to **re-write this enum class as needed**.