Enumeration

The enum type is Java's type to support something called an enumeration.

Wikipedia defines enumeration as, *“A complete ordered listing of **all the items** in a collection."*

The enum type

Java describes the enum type as: A special data type that contains predefined constants.

A constant is a variable whose value can't be changed, once its value has been set.

An enum is a little like an array, except its elements are known, not changeable, and each element can be referred to by a constant name, instead of an index position.

The enum type

```
public enum DayOfTheWeek {
    SUNDAY, MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY
}
```

An enum in its simplest form, is described like a class. However, the keyword enum replaces the keyword class.

You can name the enum with any valid identifier, but like a class, upper camel case is the preferred style.

Within the enum body, you declare a list of constant identifiers, separated by commas. By convention, these are all uppercase labels.

One example of an enum, is the days of the week, as shown here.

The enum type

```
public enum DayOfTheWeek {
    SUNDAY, MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY
}
```

An enum is ordered, by the way you declare the constants.

This means that SUNDAY is considered the first day of the week, and SATURDAY is the last day of the week, in this example.

The enum type

The enum type is used to declare a limited set of constants, and sometimes there is a natural order to the listing, as in the case of days of the week.

Some other examples of possible enum declarations are:

- The months in the year: JANUARY, FEBRUARY, MARCH, etc.
- The directions in a compass: EAST, NORTH, WEST, SOUTH.
- A set of sizes: EXTRA_SMALL, SMALL, MEDIUM, LARGE, EXTRA_LARGE.

The enum type

Underneath the covers, the enum type is a special type of class, which contains fields to support the constants. I'll get into that in a later discussion.

You don't have to understand all the internals of an enum, to derive the benefits of using the type.

Once you get used to how this type works, you will probably find many places to use an enum.

They simplify your code and make it more readable in many ways.