Enumeration

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What is Enumeration?

1. Enumeration is a list of named Constants.
2. Every other programming language supported Enumeration except Java, therefore they decided to implement it JDK 5.
3.In other languages Enumeration is a list of Integer Constant, but in Java it defines a class type.
4. Also in Java, Enumeration can have constructors, instance variables and methods.

Create Enumeration?

1. Use the keyword **enum**

Below listed is the example with a sample enum creation called "Fruits"

```
enum Fruits{
   Mango,Apple,Watermelon,Orange
}
```

2. Mango,Apple etc are called the **enumeration constants.**

3.Each of these constant are **"public static final"** by default.

4. The type of these constants are the type of enumeration in this case it would be **"Fruits".**

5. Once you create a Enumeration, it defines a class Type, however we do not instantiate this class like other classes with (new Keyword).

6. Instead we declare it like like primitive data types, for example

Fruits ft;

Which means "ft" is a variable of Enumeration type "Fruits"

7. Now what values can we assign to the variable "ft"?

Because **"ft"** is a variable of type **"Fruits"** it can contains or assigned only those values present in the Enumeration **"Fruits".**

Assign value to variable ft.

ft=Fruits.Mango;

8. Two Enumeration Constant can be comapred using "==" values.

values() and valuesOf()

1. All Enumeration Contains 2 methods by default
   -- values();
   --valuesOf();

2. values() method returns a array which contains the list of the enumeration constants.

```
for(Fruits ft: Fruits.values()){
   S.o.p(ft);
}
```

3. valueOf() returns the Enumeration constant whose value corresponds to the String.

```
Fruits.valueOf("Mango"); //returns Mango
```

If no String exist then it throws a illegalArgumentException stating no enum constant

Elements in Enumeration

1. Enumeration is a Class type which cannot be instantiated like other classes.
2. Enumeration contains Constructors,Instance Variable, method and implement interfaces.
3.Each Enumeration constant is considered as **Object.**

- the constructor is called when the enumeration objects are created.
- **Each enumeration constant as a own copy of the instance variable.**

* Enumeration constant can have Enum with values or without.

Inheritance

1. When declared enum it cannot inherit any superclass.
2. All Enumeration class inherit one class which is **java.lang.Enum**
3. There are several methods available to us one such is ordinal()

ordinal() - helps to retrieve the position of the enumeration constant in the list
starts with "0"

compareTo() - is used to compare the ordinal value of the **same enumeration** constants.

0- if two ordinal values are same.
1 if the invoking ordinal value is greater.
-1 if the invoking ordinal value is lesser.

Enumeration Facts and Fundamentals?

1. Enumeration constants are public static final by default.
2. Enumerations constants are objects
3. Enumeration inherits only one class which is java.lang.Enum
4. methods- values(),valueOf(), ordinal(),comapreTo(),equals(),==
5. We cannot extend Enumeration class.