**ENUM (ENUMERATIONS) INTRODUCTION**

An *enumeration*, or **enum** for short, is a special data type that consists of a list of named constants. The number of values that an enum contains is fixed at the time the enum is defined; in other words, you cannot add or remove enum values dynamically throughout your program. Enumerations are quite commonly used to control switch and if statements, but they can be used in other flow control loops as well. You may also hear them referred to as *enumerated lists*.

Enumerations can be declared in one of two ways: separately as a class, or as a class member.  
**public enum Sizes{**// cannot be protected or private  
**SMALL, MEDIUM, LARGE  
};**// semicolon is optional  
  
**class EnumIntroduction {   
     int i = 0;  
     enum AvailableColors { RED, GREEN, BLUE };**// can be public, (default), protected, or private. Semicolon is optional  
**String s = "Hello World";  
}**Enums cannot be declared in a method.

Enumeration objects are created without the *new* keyword.  
**Sizes sRef = Sizes.MEDIUM;**

Enumeration comparisons are performed using the ==, just like primitive comparisons. However, there is a special rule for using them in a switch statement.  
**if(sRef == Sizes.MEDUIM) { ... }   
  
switch(sRef) {  
     case MEDIUM:  
          ...  
}**

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| **package** com.Soham; **enum** Sizes { *// cannot be private or protected* ***SMALL***, ***MEDIUM***, ***LARGE*** }; *// optional semicolon* **public class** Main {  **enum** AvailableColors { ***RED***, ***GREEN***, ***BLUE*** }; *// optional semicolon* String **s** = **"Hello World"**;   **public static void** main(String[] args) {  Sizes sRef = Sizes.***MEDIUM***;  AvailableColors ac = AvailableColors.***BLUE***;   **if**(sRef == Sizes.***SMALL***) {  System.***out***.println(**"Small"**);  } **else if**(sRef == Sizes.***MEDIUM***) {  System.***out***.println(**"Medium"**);  } **else if**(sRef == Sizes.***LARGE***) {  System.***out***.println(**"LARGE"**);  }  **switch**(ac){  **case *RED***:  System.***out***.println(**"Red"**);  **break**;  **case *GREEN***:  System.***out***.println(**"Green"**);  **break**;  **case *BLUE***:  System.***out***.println(**"Blue"**);  **break**;  }   } } | Medium  Blue |

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| **package** com.Soham;  **enum** Size{  ***small***(4), ***medium***(8), ***large***(12);  **private int units**;   Size(**int** units) {  **this**.**units** = units;  }   **public int** getUnits() {  **return units**;  } }  **public class** Main {   **public static void** main(String[] args) {  Size size = Size.***medium***;  System.***out***.println(**"Name "** + size.name());  System.***out***.println(**"units : "** + size.getUnits());  System.***out***.println();   Size aArray[] = Size.*values*();  **for** (Size s : aArray){  System.***out***.println(**"Name "** + s.name());  System.***out***.println(**"units "** + s.getUnits());  }  } } | Name medium  units : 8  Name small  units 4  Name medium  units 8  Name large  units 12 |