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TTCN-3 Language Extensions: Object-Oriented Features

**ETSI Standard**

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#### 5.1.1.11 Built-in classes

The abstract special built-in class called object is the superclass for all classes that do not explicitly extend another class.

The pseudo definition of that class is:

**type class @abstract @builtin** object {

 // This function will return a tool-specific descriptive string by default

 // but can be overridden by subclasses
   **public function** toString() **return universal charstring**;

 // Indicates wether some object is semantically equivalent to this one,

 // according to some equivalence relation.

 // The default implementation returns true if and only if both this and obj

 // are the same object instance, otherwise returns false.

 **public function** equals(object obj) **return boolean** {

 **return** this == obj;

 }

}

NOTE: The @builtin is only added for illustrative purposes and not part of the TTCN-3 language.

EXAMPLE:

**type class** Square {

 **public** **function** getSideLength() **return** **integer** { … }
…
 **public function** equals(object obj) **return boolean** {
 **if** (obj **of** Rectangle) {
 // a rectangle is a suare if it has 4 sides of equal lengths
 **var** Rectangle rectangle := obj => Rectangle;
 **if** (rectangle.getNofSides() != 4) {
 **return false**;
 }

 **var** **integer** tempSideLength := rectangle.getSideLength(0);
 **return** templSideLength == getSideLength() and
 tempSideLength == rectangle.getSideLength(1)**and**
 tempSideLength == rectangle.getSideLength(2) **and**
 tempSideLength == rectangle.getSideLength(3);
 }
 **else** **if** (obj **of** Square) {
 **return** getSideLength() == obj=>Square.getSideLength();
 }

 **return** **this** == obj;
 }
}

**type class** Rectangle {
…
 **public function** getNofSides() **return integer** { … }
 **public function** getSideLength(in integer index) **return integer** { … }
 **public function** equals(object obj) **return boolean** {
 **if** (obj **of** Square) {
 // a square is always a rectangle
 **return obj.equals(this);**
 }
 **else** if (obj **of** Rectangle) {
 **var** Rectangle r2 := obj => Rectangle;
 **if** (getNofSides() != r2.getNofSides()) { **return** **false** }
 **for** (**var** **integer** i := 0; i < getNofSides(); i := i + 1) {
 **if** (getSideLength(i) != r2.getSideLength(i)) { **return** **false** }
 }
 **return** **true**;
 }
 **return** **this** == obj;
 }
}