REPORT, 4 Oktober 2017

JAVA / PHP Programming Language

1. Basic Syntax

* Java/php is case sensitive, which means identifier Hello **Hello** and **hello** would have different meaning in Java and PHP.
* For all class names the first letter should be in Upper Case (Java and PHP).
* All **method** names should start with a Lower Case letter(Java and PHP).
* Name of the program file should exactly match the class name (Only in java).
* **public static void main(String args[]) -** Java program processing starts from the main() method which is a mandatory part of every Java program (Only in java).

1. Java/php Identifiers

* All Java/php components require names. Names used for classes, variables, and methods are called **identifiers**.

1. Java/php Modifier

* Java and PHP it is possible to modify classes, methods, etc., by using modifiers. There are two categories of modifiers : **Accsess Modifier** -> default, public, protected, protected. **Non-access Modifiers ->** final, abstract, static

1. Java/Php Variables

* Local variables
* Class Variables (Static Variables)
* Instance Variables (Non static variable)

1. Java Array

* Arrays are objects that store multiple variables of the same type. However, an array itself is an object on the heap. We will look into how to declare, construct, and initialize in the upcoming chapters.

1. Basic Datatypes

* There are two data types available in Java: Primitive datatypes, Object Datatypes
* Primitve datatypes : byte, short, int, long, float, double, boolean, char.
* Object Datatypes : Reference variables are created using defined constructors of the classes. They are used to access objects. These variables are declared to be of a specific type that cannot be changed. For example, Employee, Puppy, etc.

1. Java/php Literas

* A literal is a source code representation of a fixed value. They are represented directly in the code without any computation.

1. Variable Type

* There are three kinds of variables in Java: Local variable, Instance variables, class/static variables

1. Basic Operators

* Java provides a rich set of operators to manipulate variables. We can divide all the Java operators into the following groups: Arithmetic, Relational, bitwise, logical, assigment

1. Decision Making

* Decision making structures have one or more conditions to be evaluated or tested by the program, along with a statement or statements that are to be executed if the condition is determined to be true, and optionally, other statements to be executed if the condition is determined to be false.

1. IF Statement in Java

* An **if** statement consists of a Boolean expression.

1. Loop Control

* There may be a situation when you need to execute a block of code several number of times. In general, statements are executed sequentially: The first statement in a function is executed first, followed by the second, and so on.

1. While Loop

* A **while** loop statement in Java programming language repeatedly executes a target statement as long as a given condition is true.

1. For Loop

* A **for** loop is a repetition control structure that allows you to efficiently write a loop that needs to be executed a specific number of times.
* A **for** loop is useful when you know how many times a task is to be repeated.

1. Do While Loop

* A **do...while** loop is similar to a while loop, except that a do...while loop is guaranteed to execute at least one time.

1. Enhanched For/Foreach

* This is mainly used to traverse collection of elements including arrays.

1. Arrays

* Java provides a data structure, the **array**, which stores a fixed-size sequential collection of elements of the same type. An array is used to store a collection of data, but it is often more useful to think of an array as a collection of variables of the same type.

1. Methods

* Method is a collection of statements that are grouped together to perform an operation.

1. Constructors

* A constructor initializes an object when it is created. It has the same name as its class and is syntactically similar to a method. However, constructors have no explicit return type.

1. Parameterized Constructor

* Parameters are added to a constructor in the same way that they are added to a method, just declare them inside the parentheses after the constructor's name.

1. Exceptions

* An exception (or exceptional event) is a problem that arises during the execution of a program. When an **Exception** occurs the normal flow of the program is disrupted and the program/Application terminates abnormally, which is not recommended, therefore, these exceptions are to be handled.

1. Array Exercise

Difficulty :

I already know the theory, but some points have not encountered on the real case.