




Assignment1

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What is JDK? JRE? JVM?

- **JDK** stands for **Java Development Kit**. It is a software development environment used to develop Java applications and applets. It contains **Java Runtime Environment (JRE)** and other development tools like an interpreter, compiler, archiver, and a document generator. We can possibly install more than one JDK version on the same computer.
- **JRE** stands for **Java Runtime Environment**. It is the implementation of **JVM (Java Virtual Machine)** and it is specially designed to provide an environment to execute Java programs. It is also platform dependent like **JDK**. It consists of JVM, Java binaries, and other classes for the smooth execution of the program. It doesn't contain any development tools like a compiler, debugger, etc.
- JVM is an engine that provides a runtime environment to drive the Java Code or applications. It converts Java bytecode into machine language. JVM is a part of Java Runtime Environment. It cannot be separately download and installed.

What is java compiler?

- A java compiler is a program that takes the text file work of a developer and compiles it into a platform-independent java file. Java compiler include the Java Programming Language Compiler (javac), the GNU Compiler for Java (GCJ), the Eclipse Compiler for Java (ECJ) and Jikes.

Why is java platform independent?

- In Java, the source code is compiled and converted into the byte code. This byte code is not the machine code so the specific platform cannot understand it since it is not machine code. So for the required machine code we have the JVM in java. It

interprets the byte code and converts it into the machine specific code. Using the JVM we can make the byte code understandable to any platform. That is why the byte code is known as platform-independent. But on the other hand the JVM is different for each platform; that is why it is known as platform-dependent. Java is platform-independent because it does not depend on any type of platform.

What is IDE? Why is it important for developers?

- An IDE is Integrated Development Environment. It enables programmers to consolidate the different aspects of writing a computer program. IDE increase programmer productivity by combining activities of writing software into a single application: editing source code, building executables, and debugging.

Is Java case sensitive?

- Yes

What do the following key words do?

- **static**
 - The static keyword in Java is mainly used for memory management. The static keyword in Java is used to store the same variable or method of a given class. The users can apply static keywords with variables, methods, blocks, and nested classes. When a member is declared static, it can be accessed before any objects of its class are created, and without reference to any object.
- **final**
 - When variable are declare as final, it means after initialized, the value of the variable can't be changed. When a method is declare as final, it means that the method cannot be override. When a class is declare as final, it means that the class cannot be inherit.
- **public**
 - An access specifier used for classes, interfaces, methods, and variables indicating that an item is accessible throughout the application (or where the class that defines it is accessible).

- **private**
 - An access specifier indicating that a method or variable may be accessed only in the class it's declared in.
- **void**
 - Specifies that a method does not have a return value.
- **null**
 - Indicates that a reference does not refer to anything.
- **package**
 - Declares a Java package.
- **class**
 - Declares a new class.
- **new**
 - Creates new objects.

What is primitive type and reference type?

- Variables in Java are classified into primitive and reference variables. From the programmer's perspective, a primitive variable's information is stored as the value of that variable, whereas a reference variable holds a reference to information related to that variable. reference variables are practically always objects in Java.

Is parameter passed by value or reference?

- passed by value.

What is the output: `System.out.println(1>0?"A":"B");`

- A

How to define constants in java?

- When the variable is defined as final, the multiple instances of the same constant value will be created for every different object which is not desirable. When we use

static and final method together, the variable remains static and only can be initialized once.

What is String? Is it primitive type?

- A string is an object that represents sequence of char values. It is immutable which means it cannot be changed. Whenever we change any string, a new instance is created. For mutable strings, you can use `StringBuffer` and `StringBuilder` classes. It is not primitive type.

How to check if a String is representing a number?

- We can use `Integer.parseInt(String)`, `Float.parseFloat(String)`, `Double.parseDouble(String)`, etc. to find if the string can successfully be parsed to a number.