Java

Program – set of instructions

Machine level language – binary language – 0s and 1s

Compiler – Compiler converts program to machine understandable

format all at once and then execute.

int sum(int a ,int b){

return a+b;

}

Eg: c, c++, scala,smalltalk …

Interpreter- Interpreter converts each line of program to machine level

while it is executing.

Eg: Ruby,python etc..

Java is a platform and language.

Java follows WORA – write once run any where.

Features:

Simple

Platform Independent

Distributed

MultiThreaded

Robust

Secure

GarbageCollection- deallocation of memory when object its no longer being used- its taken care by jvm

Java is compiled and interpreted.

FileName.java – source code

compiled by javacompiler to bytecode- FileName.class

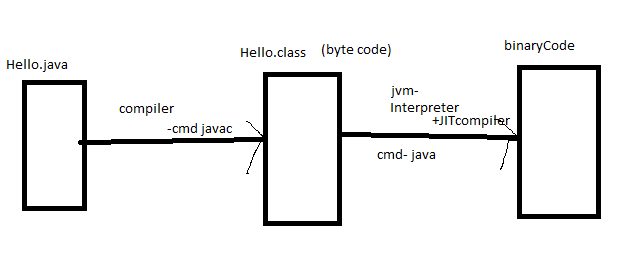
Interpreter converts to binary code and executes.

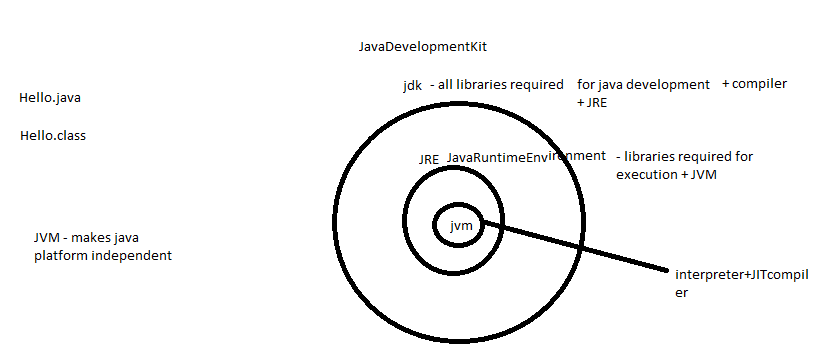
Java:

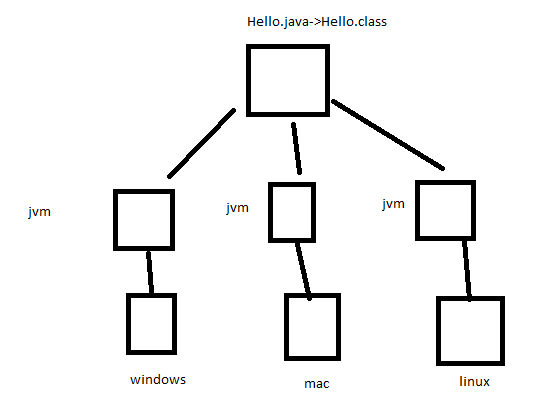
JDK – JavaDevelopmentKit

JRE- JavaRuntime environment

JVM-JavaVirtualMachine – jvm is system dependent but it makes JavaLanguage system independent.







jvm- interpreter + JIT(just in time) compiler

int sum(int a ,int b){

return a+b;

}

display all even numbers from 1-100

display(){

for(int i=1;i<=100;i++){

if(i%2==0){

print(I + “is even”);

}

}}

interpreter- 100\*1=100seconds + 3 seconds = 103seconds

JIT compiler – logic inside for loop is compiled to machine code in 1second , saved in memory and reused for all iterations.

1sec + 3 seconds – 4seconds

IDE : Integrated development environment which assists developer

to create, execute, debug and manage projects easily.

Java-Eclipse, Intellij-Ide’s-Jetbrains,Netbeans

Javascript- Webstorm , php storm

Android- AndroidStudio

IOS- xcode

Python- Pydev, pycharm

Open eclipse- create workspace-

Window-preferences- java- installed jre’s- point to jdk path instead of jre

Java is statically typed language

Javascript:

Var a=10;

Var a=”hello”;

Java:

Int a=10;

String a=”hello”;

Package : Package is a namespace/folder structure for organizing classes and interfaces

In a logical manner which helps projects easier to manage.

The first line in java program is package name.

Followed by import statements if any.

Followed by class declaration.

Class: Class is like a blue print from which objects are created. Class defines state and behavior

of object.

Student{

Properties-variables:state

Id

Name

Actions/functions- methods: behaviour

Training

Mocks

CodingTests

Interviews

}

Object: Object is the instance of class which defines state through variables and actions through methods.

Objects:

Student s1= new Student();

S1.name=”Ahad”;

S1.id=1;

Student s2= new Student();

S2.name=”Ahad”;

S2.id=1;

Student s3= new Student();

S3.name=”Ahad”;

S3.id=1;

**Keywords** : reserved by language for their implementations:

https://docs.oracle.com/javase/tutorial/java/nutsandbolts/\_keywords.html

**AccessModifiers**:

Public

Private

Protected

Default/package

**DataTypes**:

Primitive

Objects

**Variables** :

AccessModifier datatype variablename;

Public String color;

**Java is case sensitive**

Datatype- What kind of data the variable will hold

Number

Characters

Setofcharacters- String

decimals

Boolean- true or false

Int – integer

String

**Method:**

It is a set of code which holds the actual logic and can be called at any point making

the code reusable.

greet(String name){

Print(“hello ”+ name);

}

Int add(int a,int b)

{

return a+b;

)

**Method signature(syntax) and method body(actual logic inside method):**

**Accessmodifier** **outputDataType/void** if u don’t return any **methodname**(**input arguments if any/or leave blank**){

…Logic…

**Return** data as per declared datatype in methodsignature

**No need to add return** statement if its void

}

Always return statement is last line that wil be executed in a method.

**Compilation issues**- programmer deviates from language standards/ violates syntax rules.

Creating object in Java:

ClassName objname/reference variable = new ClassName();

Constructor:

Stack Heap

Global or class level variables when not intialised with data will be given default values as per respective datatypes.

Object when they are not initialized – default value is null

For primitives it depends on datatype:

Eg- int-0, float-0.0

Create any class with properties and actions /call those methods/variables by creating object

Create a Calculator class with 4 methods- add, subtract,divide and multiply.

training@whitebox-learning.com