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Object Creation Explanation in Java

=> How Objects are created :-

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1. When We compile the program i.e. javac AnimalMain.java

Compiler will check the syntax and if syntax is correct then it will generate .class files (no of .class files generated depends on the no of classes we have created)

2. When we run the program i.e. java AnimalMain

2.1 AnimalMain.class file will be loaded in JVM memory area i.e. in Method Area

2.2 An object of java.lang.Class class will be created in Heap Area in which AnimalMain class metadata will be stored

2.3 Now Main Method will execute and for this JVM will create a new thread known as main thread

2.4 As soon as main thread is created then JVM will create main stack in stack area

2.5 Now first line in main method will execute i.e. Animal ob=new Animal(); now Animal.class file will load in method area and a new object of java.lang.Class class is created in heap area in which metadata of Animal class will be stored

2.6 Now there is new keyword so new object creation process will start. JVM will instruct heap manager to create an object of Animal class but heap manager will ask for object size to JVM. Then JVM will calculate the size of object according to the number of instance variables that are declared in Animal class and this size will be taken by heap

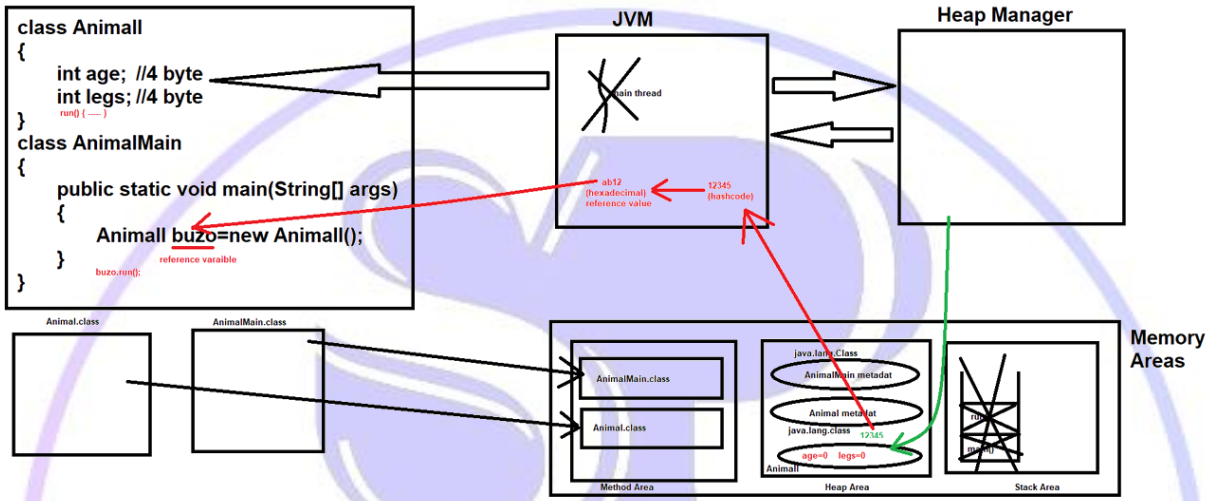
manager and heap manager will create an object in heap area

2.7 As soon as heap manager creates an object, a unique integer value will be assigned to the object which is known as "hashcode"

2.8 This hascode value will be provided to the JVM and JVM will convert this hascode vallue into hexadecimal form and this hexadecimal value is known as reference value

2.9. Now this hexadecimal value will be assigned to the variable which is known as reference variable

2.10 Now object will be initialized that means all instance variables will be assigned by default values or by their original values



=> java.lang.Class :- It represents the classes and interfaces which are used in running java application

=> java.lang.Object :- This is the parent class of all the classes in java.

When we create any class than that class will inherit Object class either directly or indirectly

=> java.lang.reflect.Method

=> java.lang.reflect.Constructor

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