OOP
History
Hello world

javac <name of .java file> -> .class

java <name of the .class file>

Program.java -> class Demo{
main()
}

Demo.class

Workspace -> Day01

Day02 -> Demo01 -> src -> .java files
-> bin -> .class files

Demo01

src

Program.java

1. open terminal
javac -d ../bin Program.java

java Program // NOT OK

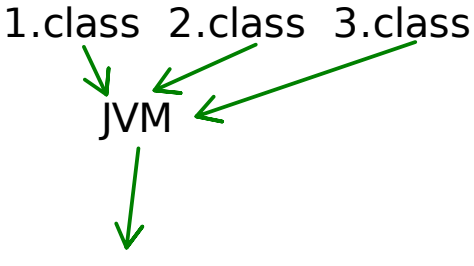
export CLASSPATH= ../bin

java Program // OK

bin

Program.class

open terminal
java Program // OK



Program.java
class one
main

class two
public static void main(String args[])

Scanner

Console

Scanner sc = new Scanner(System.in);

nextInt()
next()
nextLine()
nextDouble()

Language Fundamentals

It has its own syntax

It has its own rules

Naming Convention
1. camel case
- evey first letter of word shoud be capital except first word
- variables, fields, methods, method parameters
2. pascal case
- evey first letter of word shoud be capital
- class, enum, Interface
3. For constants, static
All words in caps

4. For package
Eneything in small case

Data Type

Data type defines 3 things
1. Nature
- What type of data you can store inside it
2. Memory
- How much memory is required to store that data
3. Operation
- The type of operations than can be carried out on the data

Primitive Data types
value types

Boolean
- boolean (true, false) ()

Character
- char (2 bytes)

Integrals
- byte (1 byte)
- short (2 bytes)
- int (4 bytes)
- long (8 bytes)

Floating-point
- float (4 bytes)
- double (8 bytes)

Non Primitive Data types
reference types

- Array
- Class
- Enum

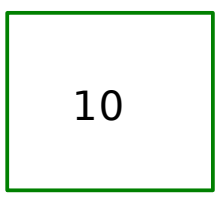
Literals
1. Boolean Literal - (true, false)
2. Character Literal - 'A'
3. Integral Literal - 10
4. Floating Point Literal - 12.34
5. String Literal - "sunbeam"
6. null Literal - null

A constant value used to initialize the variables is called as Literal

Variable
- It is a cointainer that is used to store specific type of data.
- It points at a memory

byte num1=10;

String name;



Method
- It is a group iof statements that can be executed multiple times
- It is used to perform opertions.
- It is used to define the business Logic

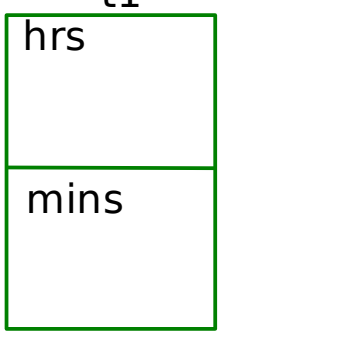
Class
- Logical Entity
- Blueprint of object
- class consists of
    1. Fields
    2. Methods

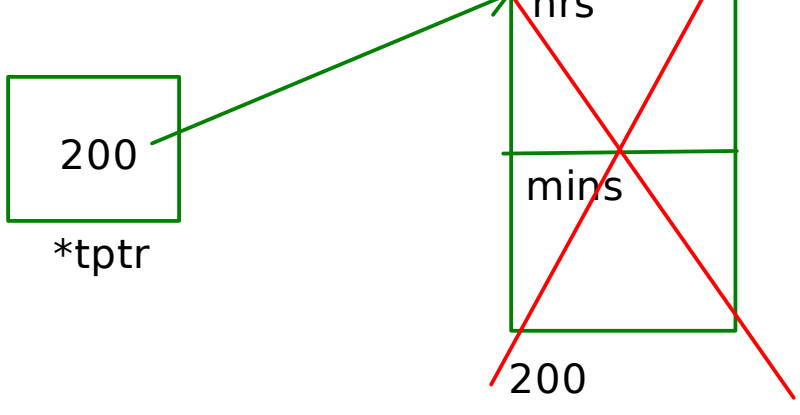
Characterstics of Object
1. State -
    Fields of class represents state
2. behaviour -
    methods of class represent behaviour
3. Identity -
    unique field in class represent identity
if uniqe field does not exists then address represents the identity

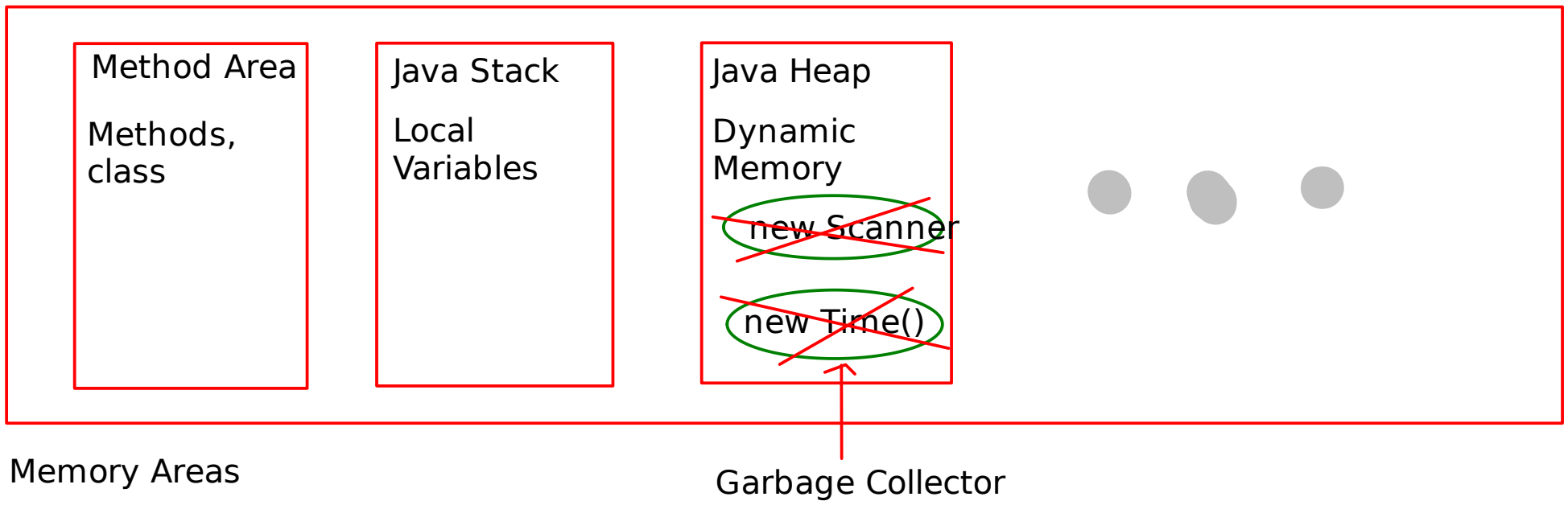
Object
- It is a physical entity
- instance of a class
- non static fields of class gets memory inside object

```
main(){
Time t1;
Time *tptr = new Time();
delete tptr;
}
```

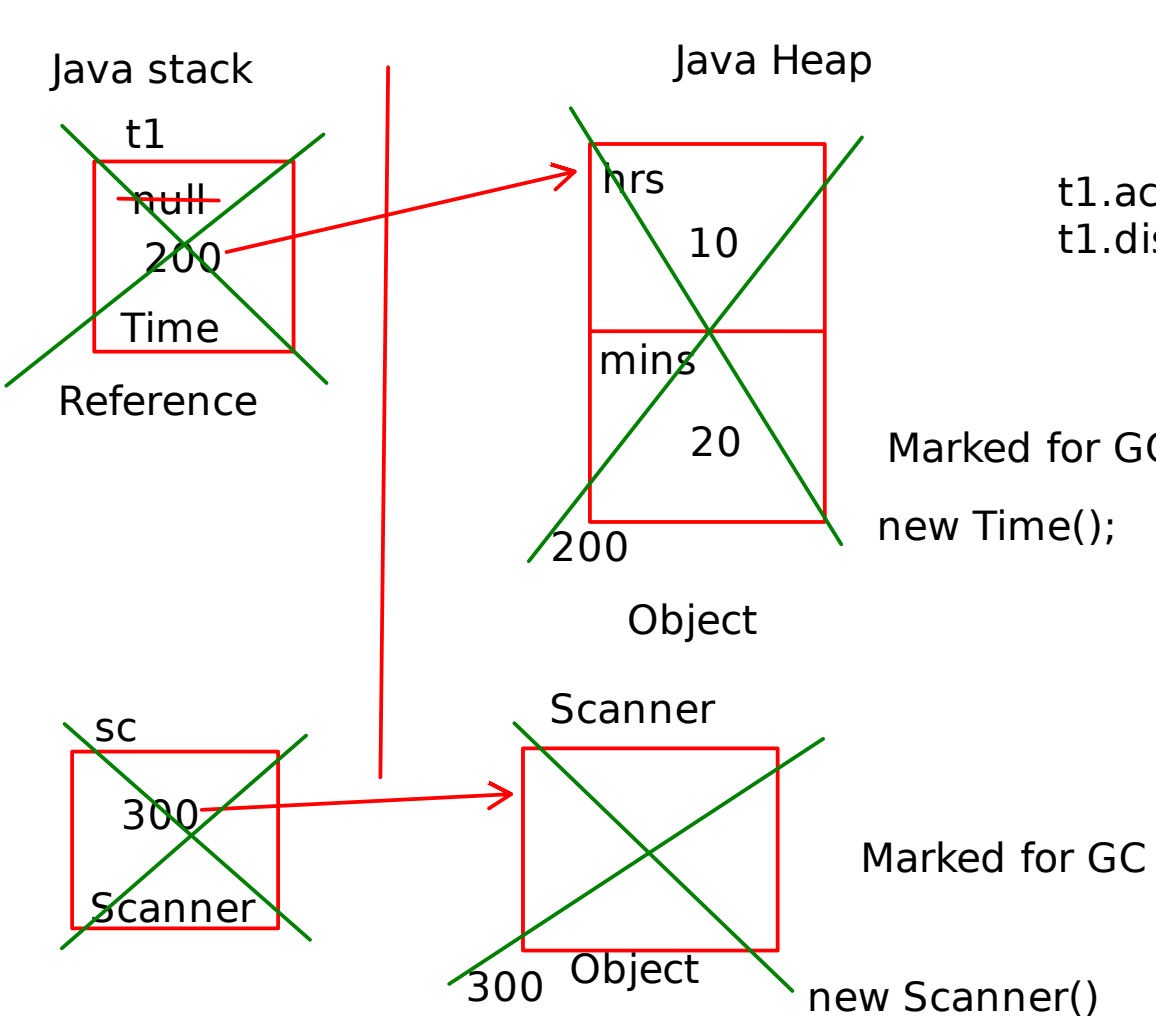
In CPP








```
main(){
// local variable
Time t1 = null;// reference
t1 = new Time();
}
```



Wrapper classes
- Primitive types in java are not classes.
- For all primitive types java have provided some classes.
- these classes are called as Wrapper classes

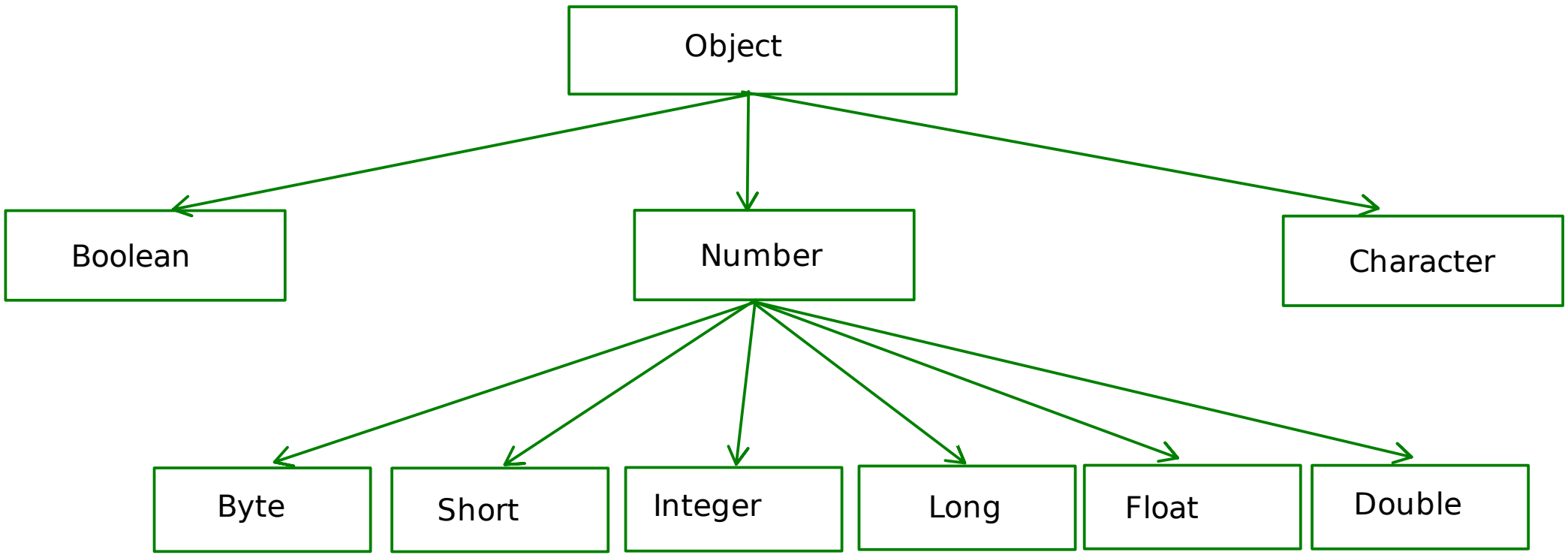
boolean -> Boolean
char -> Character
int -> Integer
double -> Double

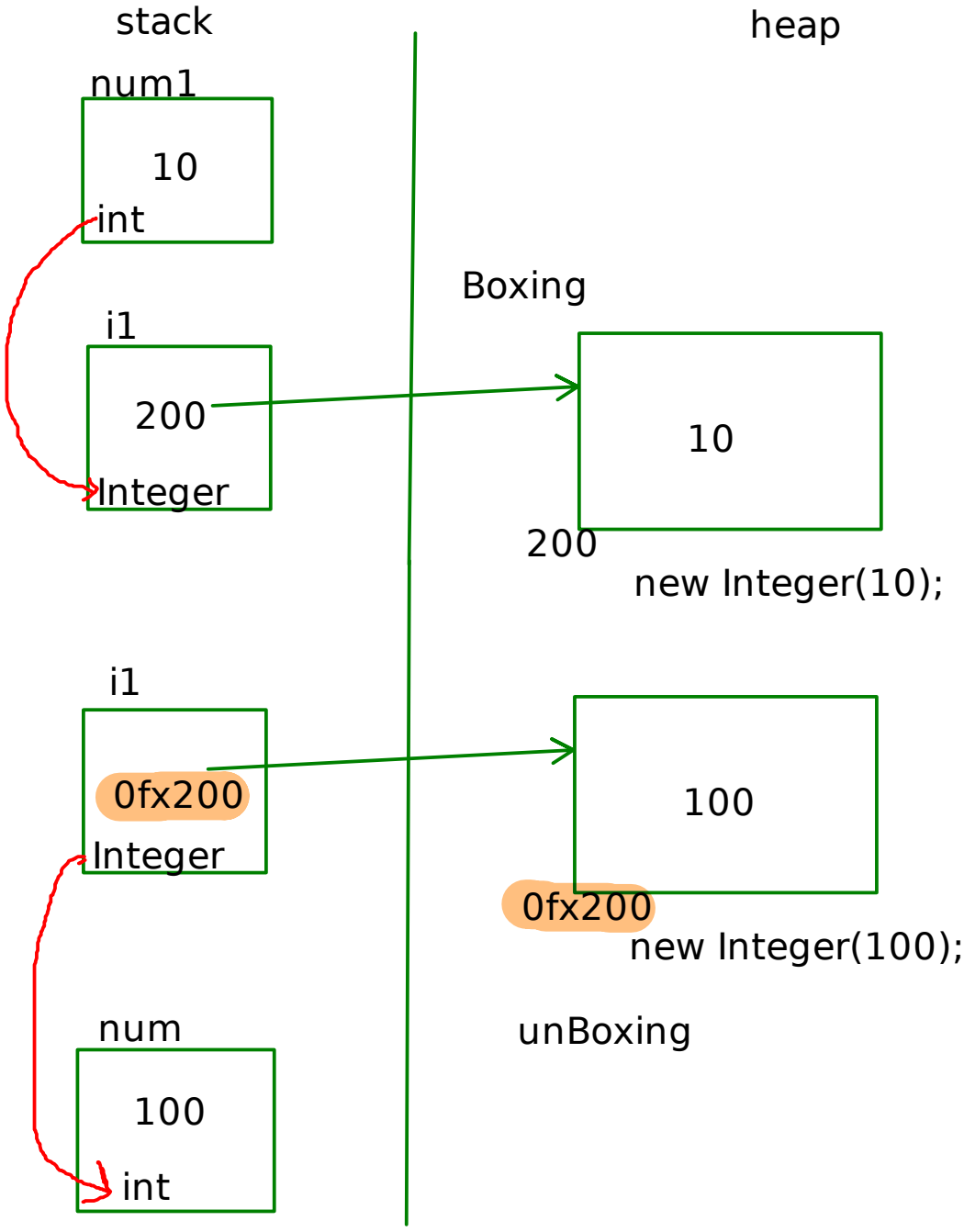
```
operator int(){

}
```

```
Time t1;
Time t2(120);
Time t3 = t2;
Time t4 = 120;

int mins = t3;
```






```
int num1 = 10;

Integer i1 = new Integer(num1);
```

```
Integer i1 = new Integer(100);
int num = i1.intValue();
```