Core Java

Trainer: Nilesh Ghule
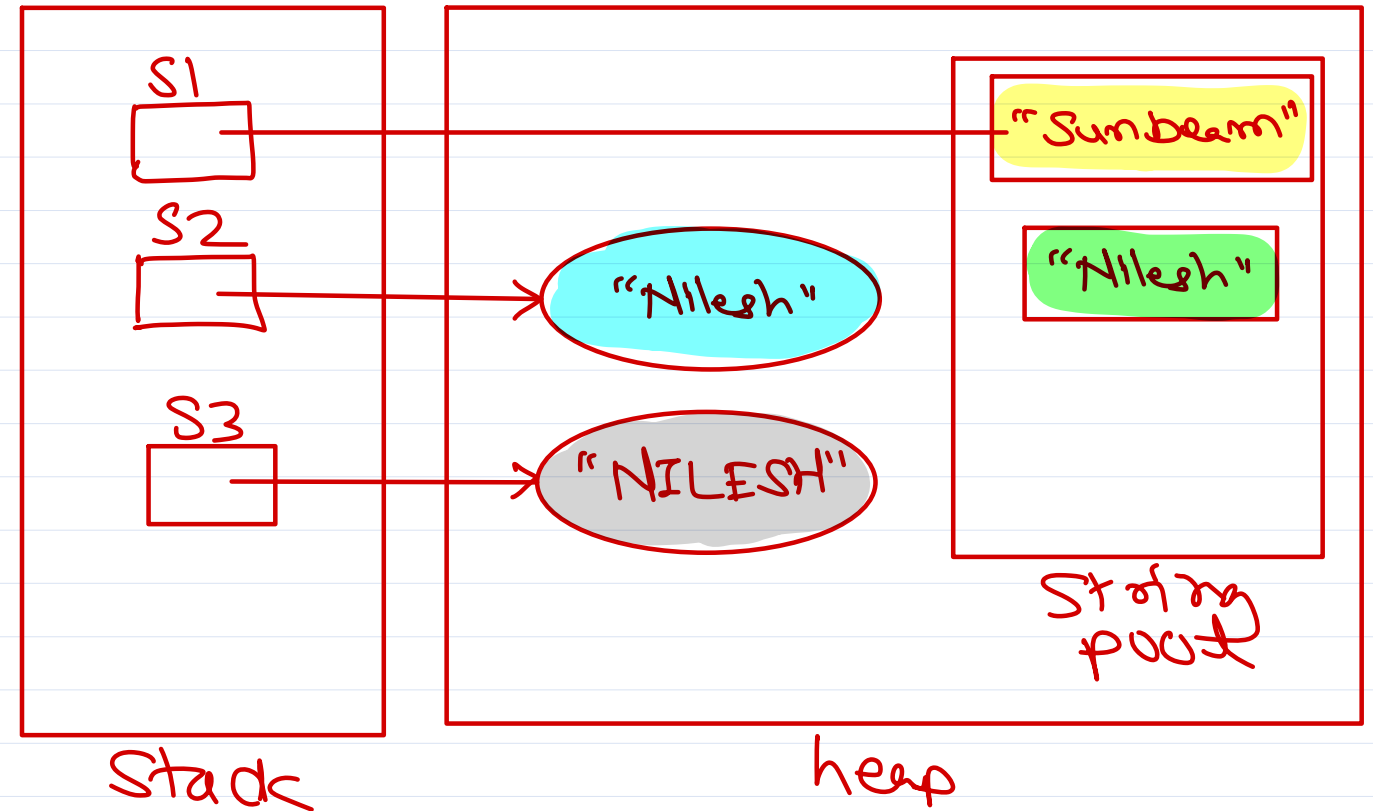
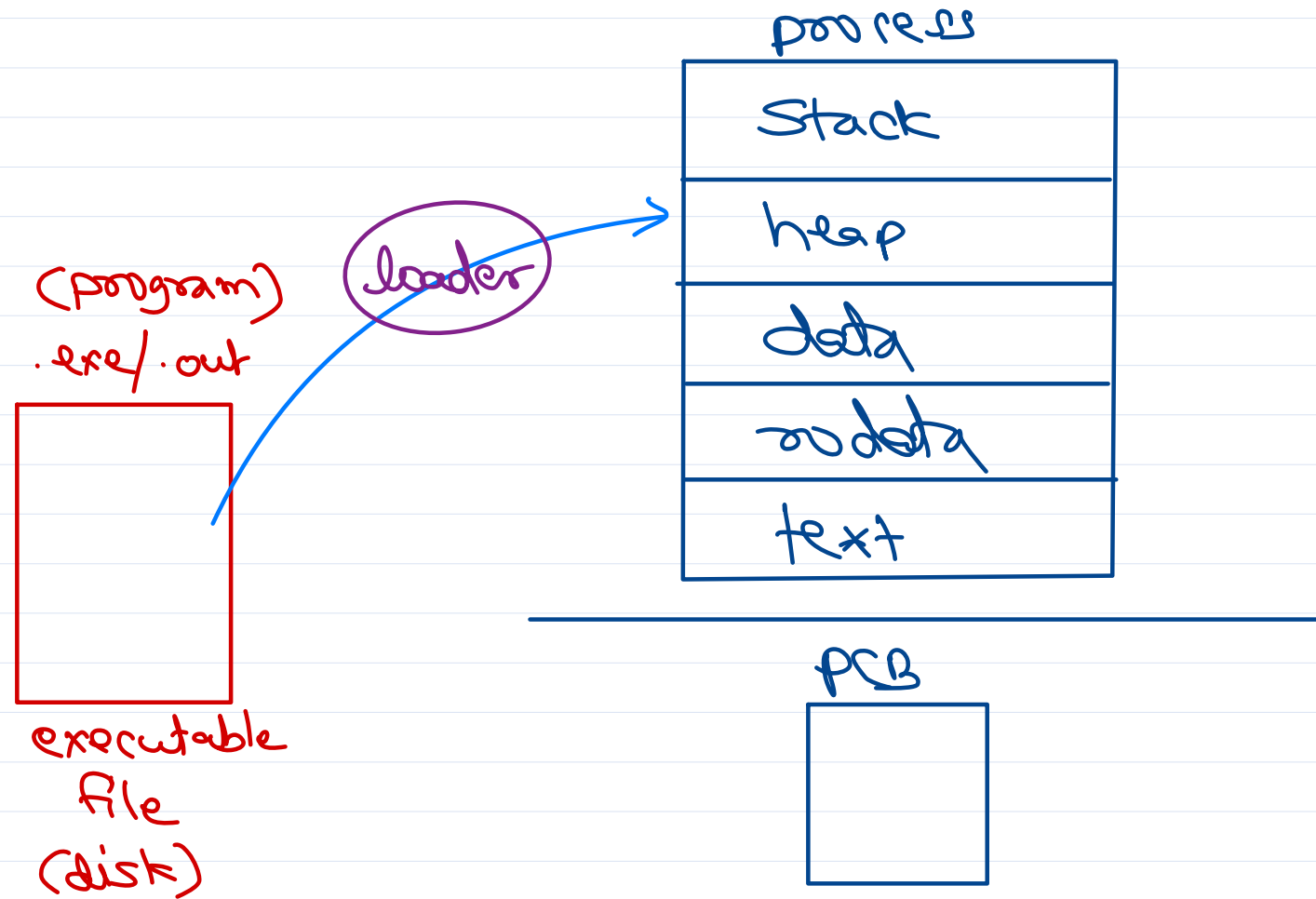# Strings

String S1 = "Sunbeam";

String S2 = new String("Nilesh");

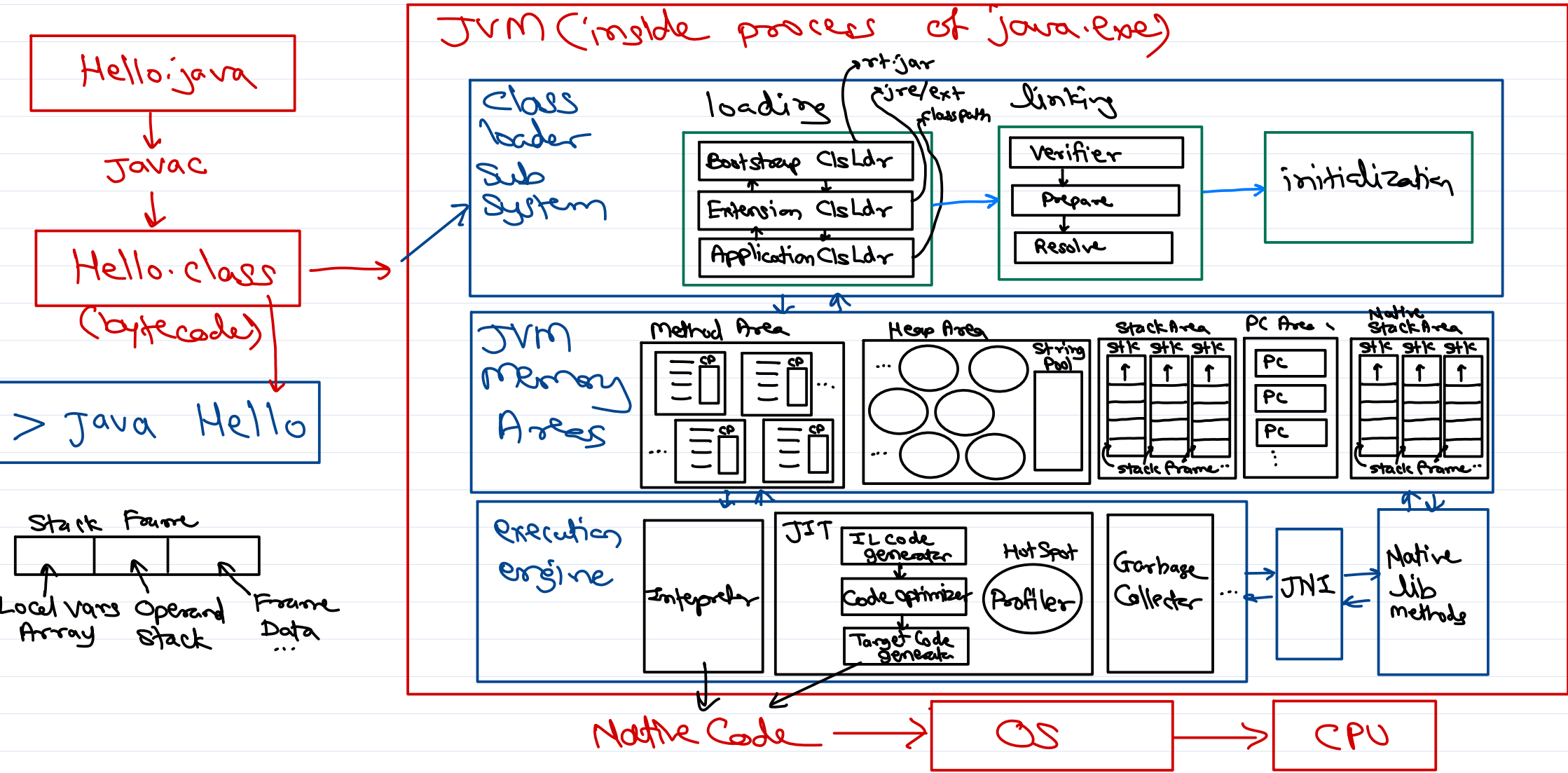String S3 = S2.toUpperCase();

S1

S2

S3

Stack

"Nilesh"

"NILESH"

"Sunbeam"

"Nilesh"

String Pool

heap

OS process

(program)
.exe/.out

executable
file
(disk)

loader

process

Stack
heap
data
oo data
text

PCB

JVM architecture

Hello.java

Javac

Hello.class
(bytecode)

> Java Hello

Stack Frame

Local Vars   Operand   Frame
Array   Stack   Data
                          ...

JVM (inside process of java.exe)

Class loader Sub System

loading
- rt.jar
- jre/ext
- classpath

Bootstrap ClsLdr
Extension ClsLdr
Application ClsLdr

linking
Verifier
Prepare
Resolve

initialization

JVM Memory Areas

Method Area   Heap Area   String Pool   Stack Area   PC Area   Native Stack Area

CP   CP
CP   CP

Stk Stk Stk   Pc Pc Pc   Stk Stk Stk
stack frame   stack frame

Execution engine

Interpreter

JIT
IL code generator
Code optimizer
Target Code generator

Hot Spot
Profiler

Garbage Collector

JNI   Native lib methods

Native Code → OS → CPU

Thank you!

Nilesh Ghule <nilesh@sunbeaminfo.com>