## Midterm 1. Review

#### 02. Java Grerview

```
Java Compiler: check source code of a programmer in a .java file

⇒ generate byte code and save it m .class file

Tava Virtual Machine: launcher load JVM and program's .class file.

† ⇒ execute program by interpreting the byte code.

launcher

JRE Java Running Environment

Significance of JVM: (Portability

Universality

Performance
```

# 02.5 Classes

```
Static: method is part of the class, not an instance
void: method won't return anything.
          public class Hello World f
              public static void main ( Stry [ ] args)
         Object > System. ont. println ("Hello World");
Strng: can be concatenated using +
                                         operator
     Smple Writer
                                   components. Simple writer. Simple Writer;
                          import
                           import
                                   components . simple writer . Simple Writer 1L;
                                   static void main (Strigt) args) f
                                       Simple Writer out = new Simple Writer 1L ();
                                        ont. close ();
                           use a file:
                                   Simple Writter out = new Simple Writer IL ("file_nome_txt")
```

# 03. Output - String - Input

# 04. Variables , Types . Values

boolean, char, int, domble : primitive type. Strug : built - in type, not primitive

```
compound statement : \ \ \ \ \ \ \ \ \
          Control Flow: C Condition / Selection statement
                                · if · else
                                · if - else if
                            @ Loop / Iteration statement
                                • while
                                · for
                                · do - while
Ob. Static Methods
                  private static int
                                         distance (int a, int b) {
07. Parameter Passing
             · arguments: values provided when method is called
             · formal parameters: names of variables in method itself
             Connecting Caller and Callee: • argument value Copied formal parameter
                                           · returned value _____ caller
                                              formal parameter : lost
                                              Parameter passing mechanism: call-by-value
                                                                           call - by - copying
08. Array
09. Design - by - Contract
           ( System
                                    Sclient
            interface
                                    implementer
           subsystem
              condition: responsibility of Client code
            post condition: tesponsibility of implementation code in the method body
         assert statement
```

05. Operators, Expressions, Statement, Control Flow

Statement: "smallest complete unit of execution"

### 10. Trees

### 11. XML Documents

### 12. XMLTree - Model

- · Every node in the tree represents either a tag or the tag of an element.
- · Every node in the tree has a label Strug, that is either the tag name or the context itself
- Only tag nodes can have zero or more attribute name value pairs, each of which is a String

XML file content is modeled by the tree

## 13. XMLTree Methods

all the methods for XMLTree are instance methods

t. method Name (arguments)

t: receiver

String s = tree. label ();

∠ book > Ø
a → ...

S = "book"

Java for Everyone

S = "Java for Everyone"

boolean b = tree.isTag();

boolean b = tree. has Attribute (name);

String s = tree.attribute Value (name);

int number = tree . number Of Children ();

XMLTree st = tree. child(i);

Example code with iterable