

Lecture Notes

Chapter 1

1. Computer Architecture
 - a. CPU
 - ALU
 - Control Unit
 - Registers
 - Cache Memory
 - b. Memory – [Address | Storage]
 - c. Storage Devices
 - d. I/O Devices
 - e. Communication Devices
2. Program Languages
 - A. High Level Languages
 - a. Procedural Languages
 - Fortran
 - C
 - Ada
 - b. Visual Languages
 - Delphi
 - Visual Basic
 - c. Object Oriented Languages
 - C++
 - Java
 - d. Functional Languages
 - Lisp
 - e. Algorithmic Languages
 - Prolog
 - B. Assembly Languages
3. Number Systems
 - a. Addition & Subtraction
 - Octal
 - Hexadecimal
 - a. Decimal → Hexadecimal & Octal
 - b. Hexadecimal & Octal → Decimal
4. Client-Server Systems
5. CSUN System
6. Creating Java Programs
 - a. Editors (JGrasp) – creating source code
 - b. Compiling Java code – creating “Bytecode”
 - c. Executing Java code – Java Virtual Machine – interpretation
 - d. Compiling C++, etc.

7. Java

A. Java Language Specification <http://java.sun.com/docs/books/jls>

B. Editions

- a. Java Standard Edition (Java SE) : client-side stand-alone applications & applets
- b. Java Enterprise Edition (Java EE) : server-side applications, e.g., Java servlets
- c. Java Micro Edition (Java ME) : mobile device applications, e.g., cell phones, etc

C. Releases or Versions, e.g., Java SE 6

D. Java Development Kit , e.g., JDK 1.6 aka Java 6 or JDK 6

E. Integrated Development Environment (IDE)

- a. NetBeans
- b. Eclipse
- c. JBuilder
- d. TextPad
- e. JGrasp

F. Java Programs

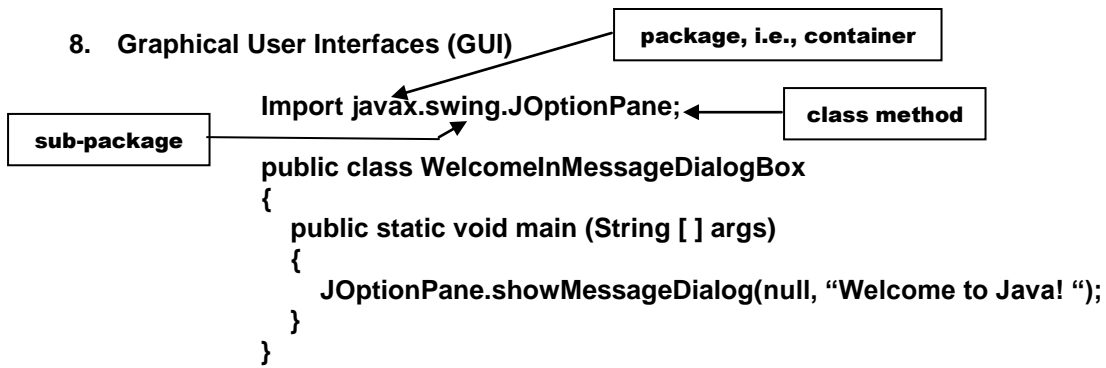
```
public class Welcome
{
    public static void main(String[] args)
    {
        System.out.println("Welcome to Java Programming!");
        System.out.println("Learn the Fundamentals of the Language");
        System.out.println("Design the Program!");
        System.out.println("Write the Program Code!");
        System.out.println("Compile the Program!");
        System.out.println("Study the Compile Errors!");
        System.out.println("Modify the Program, i.e., Remove the Errors!");
        System.out.println("Compile the Program!");
        System.out.println("Repeat as Required!");
    }
}
```

Block

Block

**This program must be saved as `Welcome.java`
Java is Case Sensitive**

8. Graphical User Interfaces (GUI)



For the result see page 19

dot operators → import javax.swing.JOptionPane;
specific import statement → import javax.swing.JOptionPane;
wildcard import statement → import javax.swing.*;

**For additional information on the
JOptionPane.showMessageDialog
Method
see pages 19-20**

9. Programming Exercises Page 24
 - a. Exercise 1.1
 - b. Exercise 1.2
 - c. Exercise 1.3