

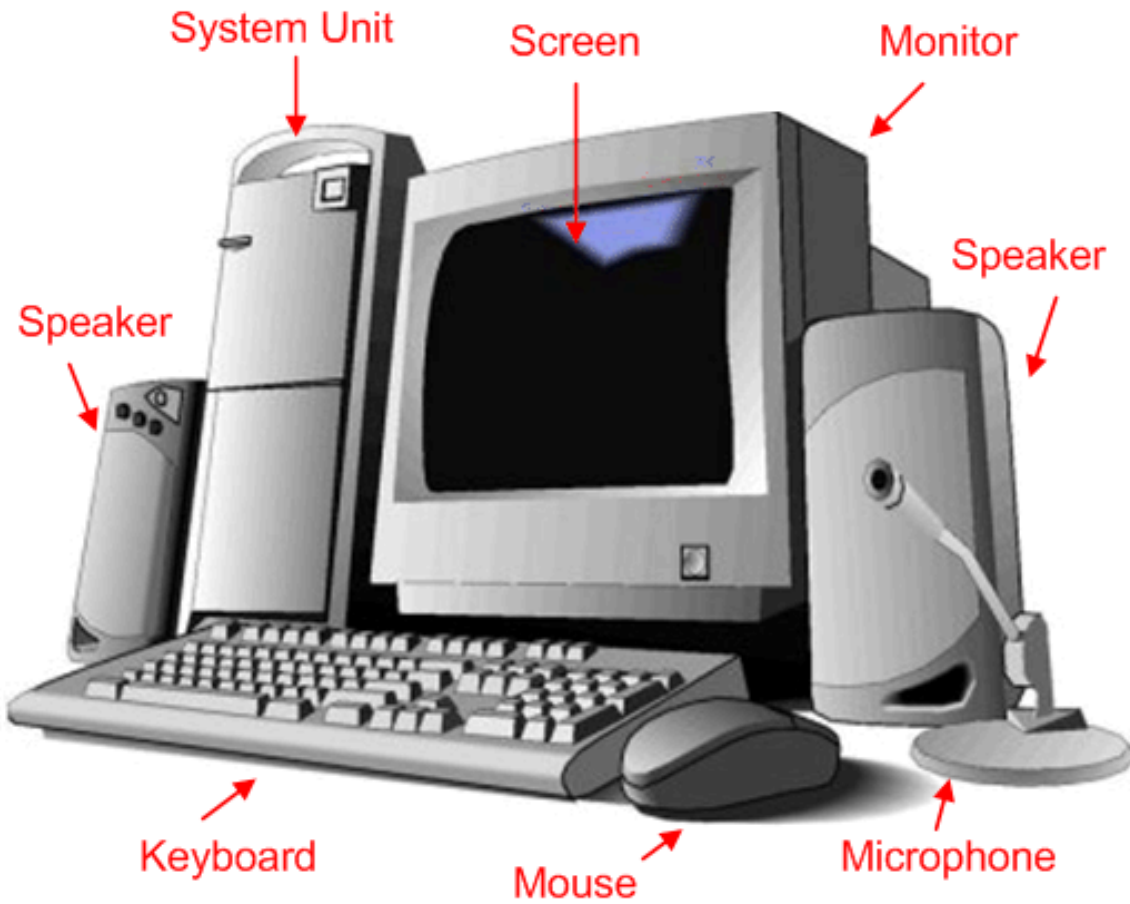
BAHASA PEMROGRAMAN

- PERTEMUAN 1 - PENGANTAR DAN INSTALASI JAVA

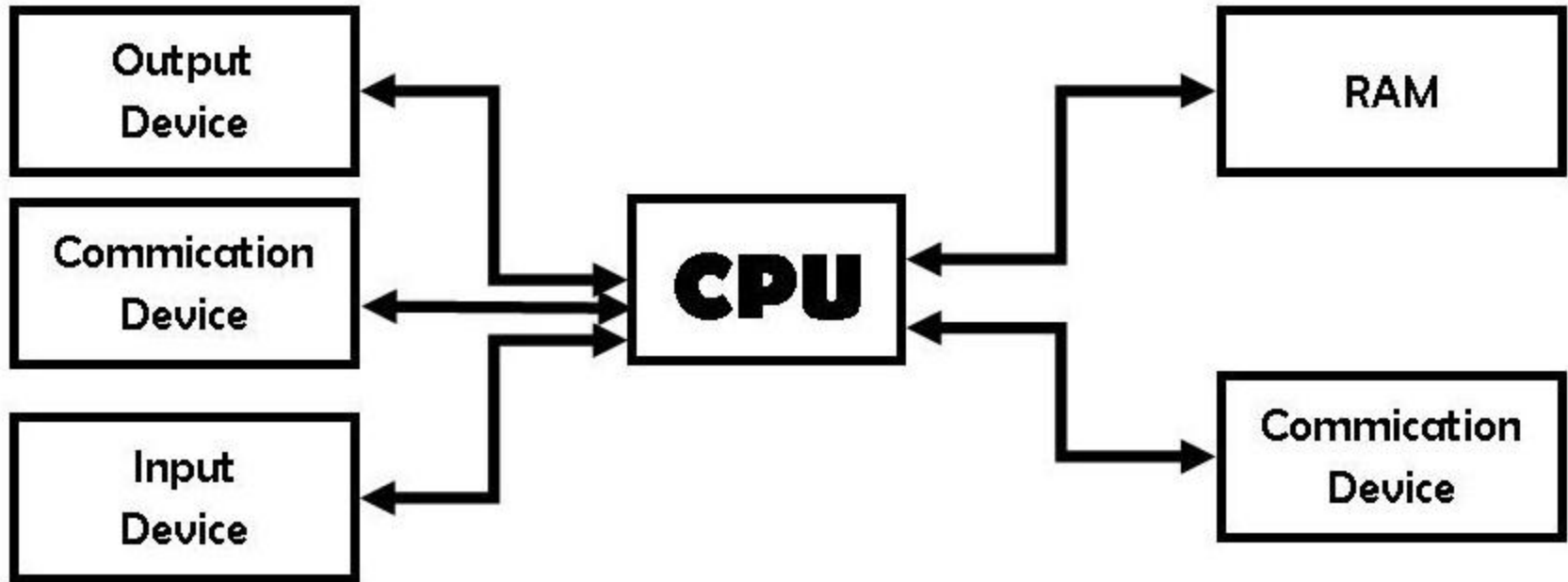
OUTLINE

- Komputer
- Bahasa Komputer
- Algoritma
- Pengenalan Java

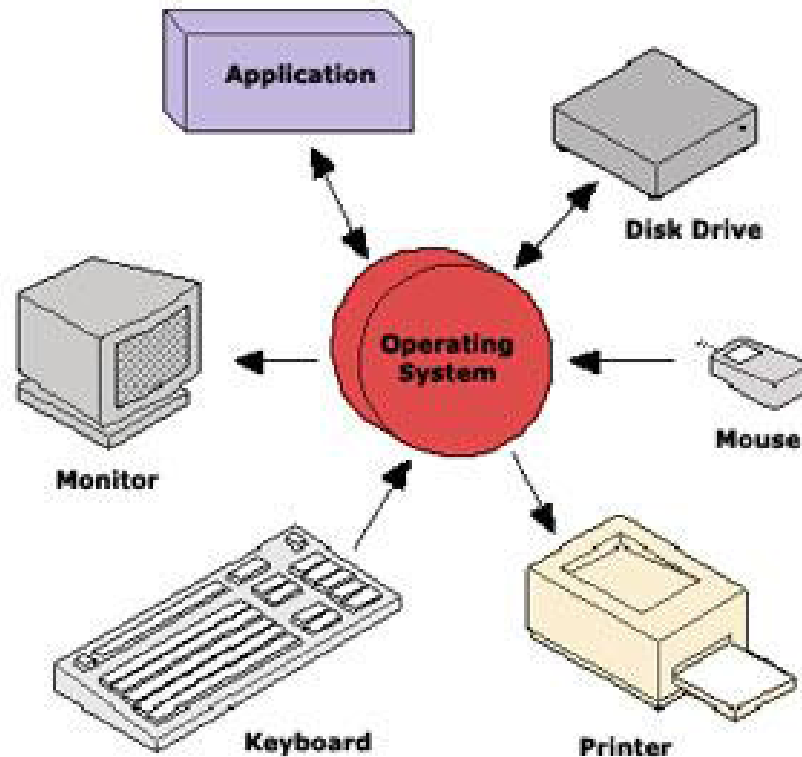
Komputer ?



Computer Hardware



Computer Software



Language

- English: Hello, how are you?
- Indonesian: Haii, apa kabar?
- French: Bonjour! Ça va bien?
- German: Guten tag. Wie geht's?
- Japanese: Konnichi wa. O genki desu ka?

Program Language

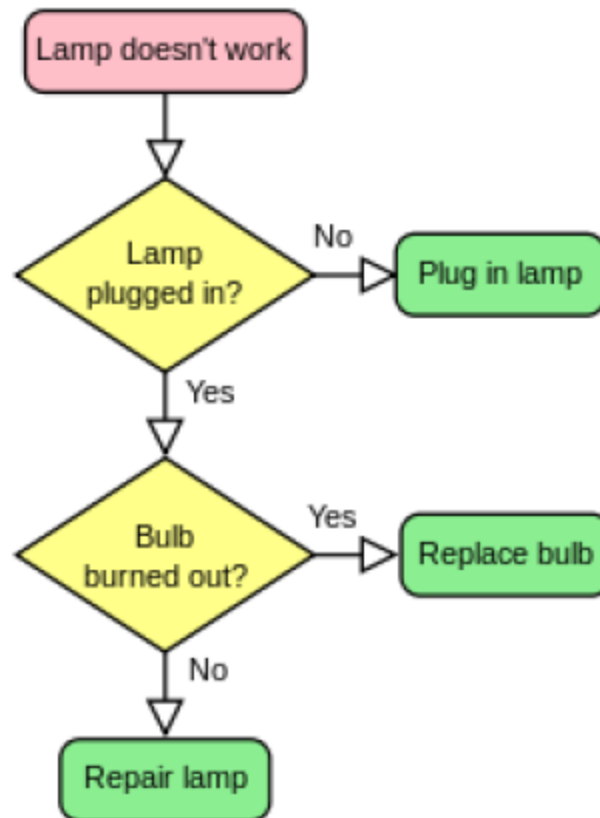
- A programming language is an artificial language designed to communicate instructions to a machine, particularly a computer. Programming languages can be used to create programs that control the behavior of a machine and/or to express algorithms precisely.



PROGRAM = DATA + ALGORITMA

Algoritma

- **algoritma / algoritme merupakan** kumpulan perintah untuk menyelesaikan suatu masalah .



Algoritma

- Sequential (Berurutan)
- Percabangan
- Perulangan

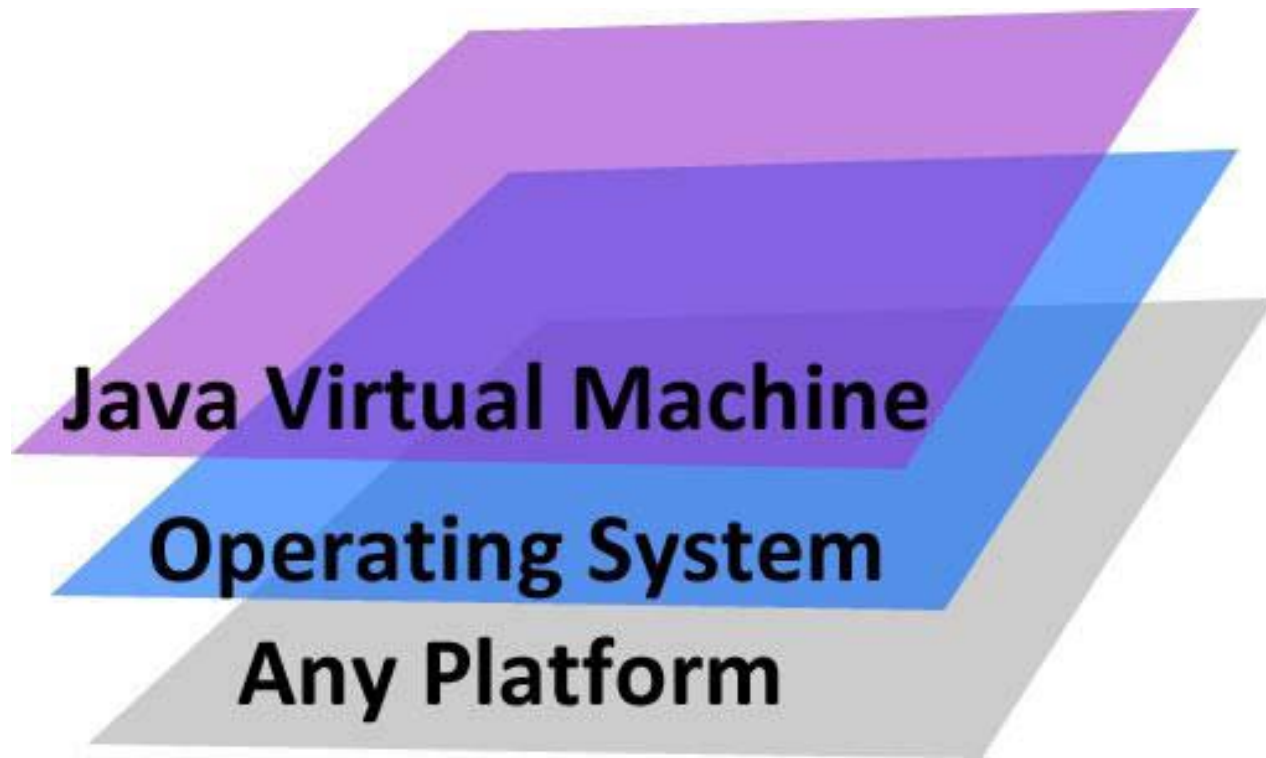
```
SIMPLEHAC( $d_1, \dots, d_N$ )
1  for  $n \leftarrow 1$  to  $N$ 
2  do for  $i \leftarrow 1$  to  $N$ 
3      do  $C[n][i] \leftarrow \text{SIM}(d_n, d_i)$ 
4       $I[n] \leftarrow 1$  (keeps track of active clusters)
5   $A \leftarrow []$  (assembles clustering as a sequence of merges)
6  for  $k \leftarrow 1$  to  $N - 1$ 
7  do  $\langle i, m \rangle \leftarrow \arg \max_{\{ \langle i, m \rangle : i \neq m \wedge I[i]=1 \wedge I[m]=1 \}} C[i][m]$ 
8       $A.\text{APPEND}(\langle i, m \rangle)$  (store merge)
9      for  $j \leftarrow 1$  to  $N$ 
10     do  $C[i][j] \leftarrow \text{SIM}(i, m, j)$ 
11          $C[j][i] \leftarrow \text{SIM}(i, m, j)$ 
12      $I[m] \leftarrow 0$  (deactivate cluster)
13 return  $A$ 
```

Introduction To Java

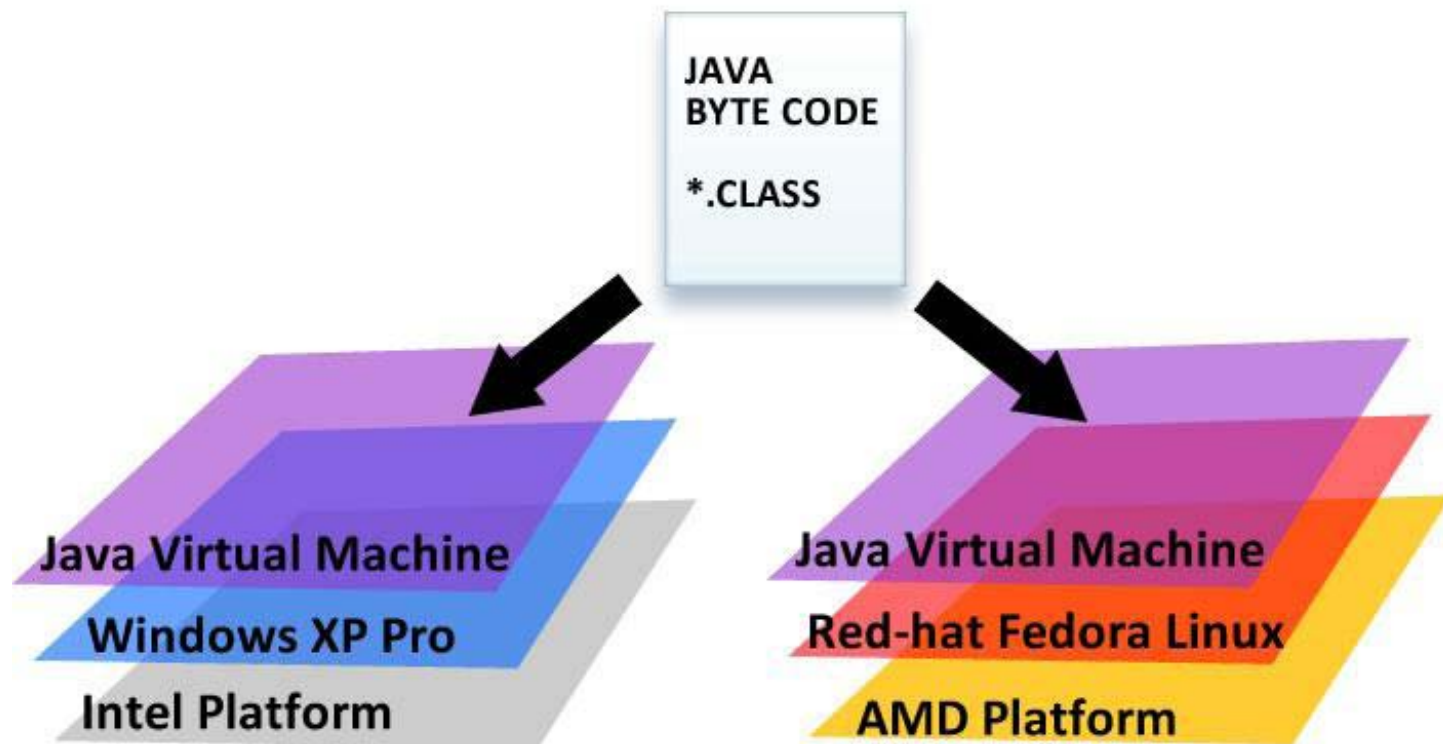
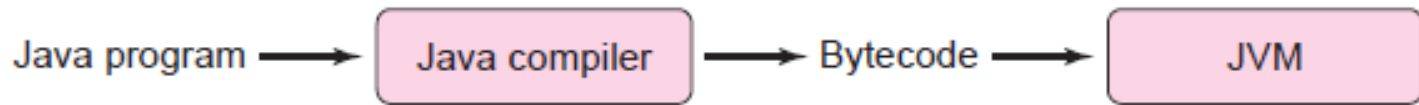


What is Java ?

- Java is a programming language originally developed by **James Gosling** at **Sun Microsystems** (which has since merged into Oracle Corporation) and released in 1995 as a core component of Sun Microsystems' Java platform.
- The language derives much of its syntax from C and C++ but has a simpler object model and fewer low-level facilities.
- Java applications are typically compiled to bytecode (class file) that can run on any **Java Virtual Machine (JVM)** regardless of computer architecture. Java is a general-purpose, concurrent, class-based, object-oriented language that is specifically designed to have as few implementation dependencies as possible.
- Sumber:
[http://en.wikipedia.org/wiki/Java_\(programming_language\)](http://en.wikipedia.org/wiki/Java_(programming_language))



Running Java Byte Code



Mengenal J2SDK

- J2SDK (*Java 2 System Development Kit*) disediakan oleh Sun Microsystems.
(<http://www.oracle.com/technetwork/java/javase/downloads/index.html>)
- Perangkat pengembangan yang tergolong sebagai IDE (*Integrated Development Environment*) :
 - Semantic Café
 - Microsoft Visual J++
 - Borland Jbuilder
 - Netbeans IDE (<http://www.netbeans.org>)
 - Jcreator (<http://www.jcreator.com/download.htm>)

Jenis Program Java

- Java Applet : Program Java yang diletakkan pada Web Server dan diakses melalui Web Browser.
- Java Aplikasi : Program Java yang bersifat umum.
 - J2SE → Standard Edition
 - J2ME → Mobile Edition
 - J2EE → Enterprise Edition

Contoh Program Java

```
public class Calculator{  
    public static void main(String argv[]){  
        System.out.println("Program Calculator");  
    }  
}
```

The image displays four sequential screenshots of a Windows command prompt window, illustrating the process of creating, compiling, and running a Java program.

Top-Left Screenshot: Shows the directory listing for the file `Calculator.java` in the `F:\P` directory. The output includes the volume information (Deta2), serial number (BA64-565E), and a directory listing showing 1 file and 0 directories.

```
F:\P>dir Calculator.java  
Volume in drive F is Deta2  
Volume Serial Number is BA64-565E  
  
Directory of F:\P  
  
02/15/2012  12:32 PM          1  
                1 File(s)  
                0 Dir(s)  190,161,166  
  
F:\P>_
```

Top-Right Screenshot: Shows the compilation of `Calculator.java` using `javac`, resulting in `Calculator.class`. It also shows a directory listing for `F:\P` after compilation, listing both `Calculator.class` and `Calculator.java`.

```
F:\P>javac Calculator.java  
  
F:\P>dir Calculator.*  
Volume in drive F is Deta2  
Volume Serial Number is BA64-565E  
  
Directory of F:\P  
  
02/15/2012  12:37 PM          432  
02/15/2012  12:32 PM          169  
                2 File(s)          601 bytes  
                0 Dir(s)  190,161,166,336 bytes free  
  
F:\P>
```

Bottom-Left Screenshot: Shows the directory listing for `Calculator.java` again, identical to the first screenshot.

```
F:\P>dir Calculator.java  
Volume in drive F is Deta2  
Volume Serial Number is BA64-565E  
  
Directory of F:\P  
  
02/15/2012  12:32 PM          1  
                1 File(s)  
                0 Dir(s)  190,161,166  
  
F:\P>javac Calculator.java  
  
F:\P>
```

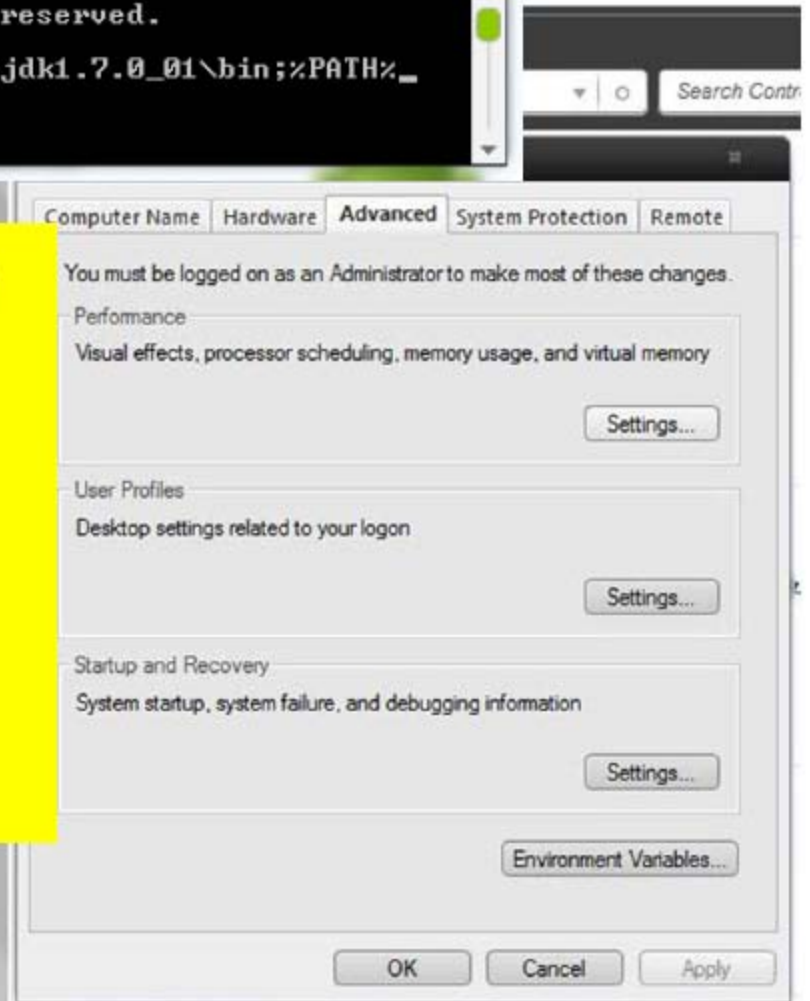
Bottom-Right Screenshot: Shows the execution of the program using `java`, which outputs `Program Calculator`.

```
F:\P>java Calculator  
Program Calculator  
  
F:\P>_
```

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

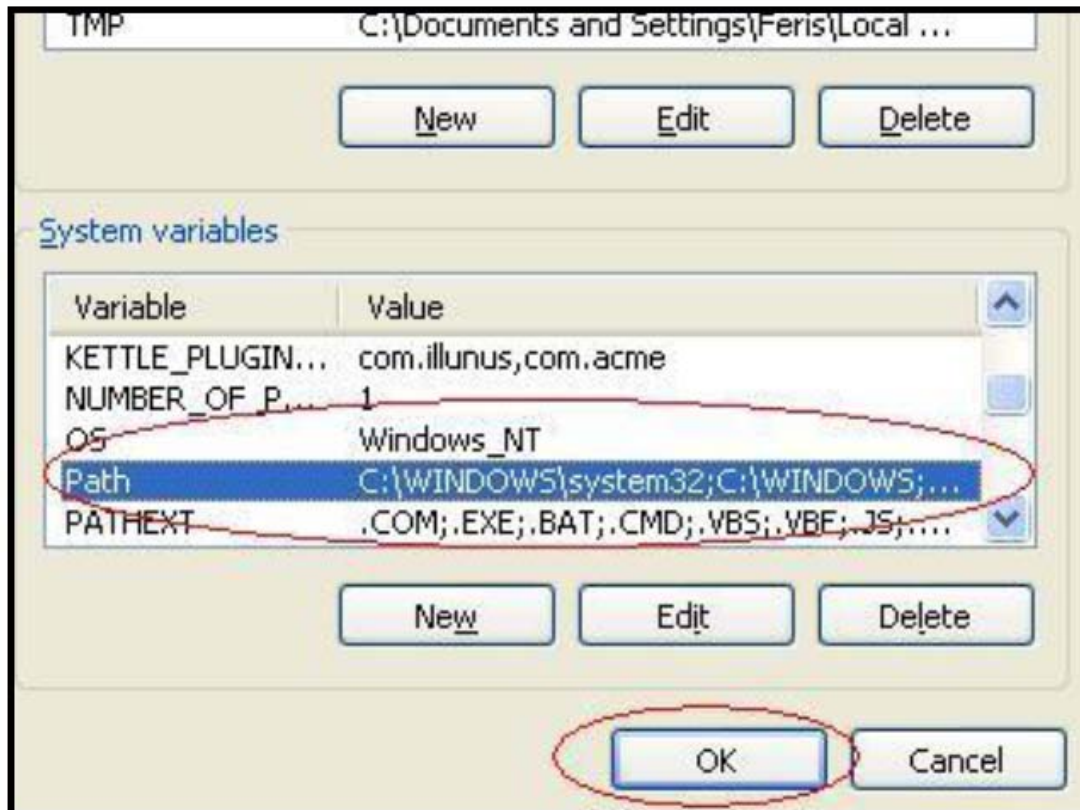
C:\Users\Teguh Sutanto>set PATH=C:\Program Files\Java\jdk1.7.0_01\bin;%PATH%;_
```

- >set PATH=\alamat folder jdk\bin;%PATH%
- Atau bisa lewat control panel:



See also
Action Center

Pada bagian System variables dan klik Edit.

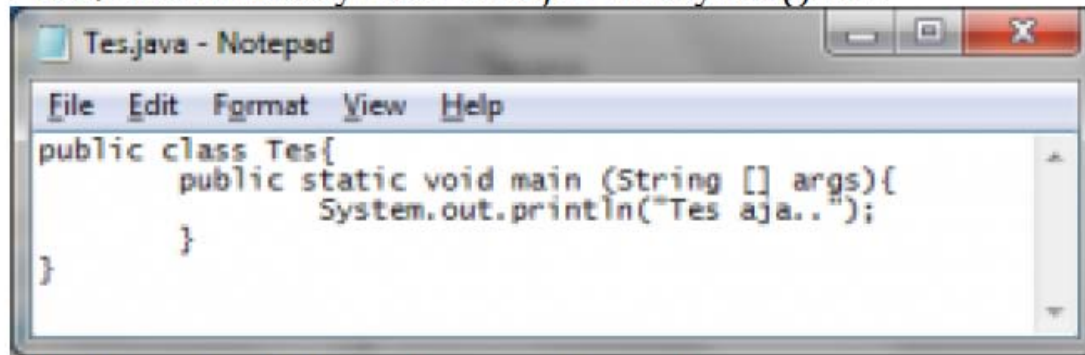


Tambahkan satu nilai pada Variable Value yaitu folder binary instalasi JDK. Untuk contoh pada umumnya file path kita juga merupakan file tempat kita menginstall Java adalah **C:\Program Files\Java\jdk1.6.0_05\bin**.




```
Command Prompt
C:\>javac -version
javac 1.6.0_85
C:\>
```

Nah, ini misalnya isi Tes.java kayak gini..



```
Tes.java - Notepad
File Edit Format View Help
public class Tes{
    public static void main (String [] args){
        System.out.println("Tes aja..");
    }
}
```

Hasilnya jadi kayak gini di cmd..



```
C:\Windows\system32\cmd.exe
C:\tes>javac Tes.java
C:\tes>java Tes
Tes aja..
```

Kompiler dan Interpreter Java

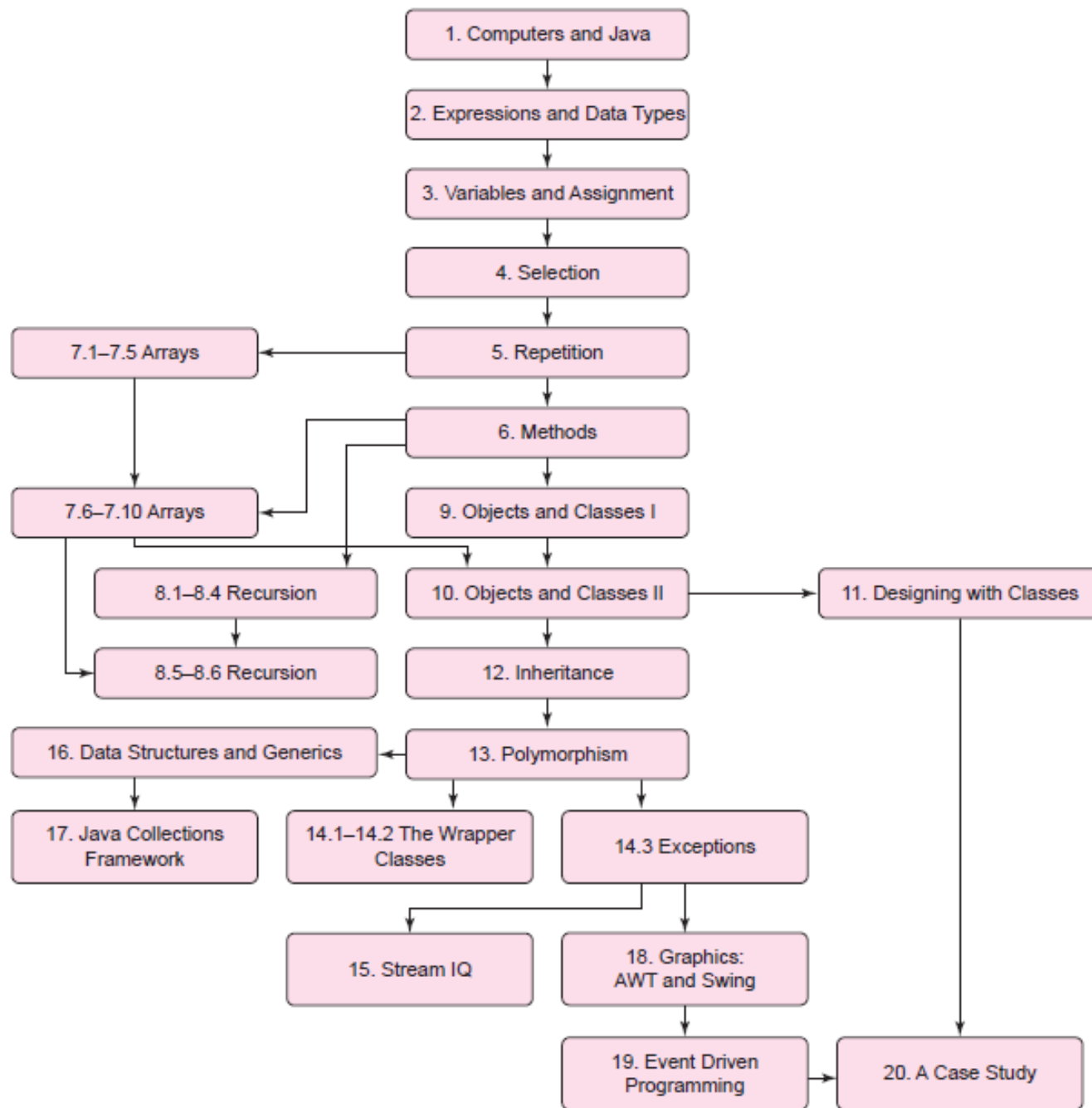
- **Kompiler Java bernama javac.** Program ini berguna untuk mengkompilasi berkas sumber kode java ke dalam bentuk yang dapat dimengerti oleh interpreter java.
- Hasil kompilasi berupa berkas bytecode. Dalam hal ini akhiran yang digunakan berupa **.class**.
- **Interpreter java digunakan untuk mengeksekusi/ menjalankan berkas bytecode (.class).** Program ini yang dipakai untuk menjalankan program Java, khususnya untuk yang tergolong aplikasi.

Struktur Dasar Pemrograman Java

- Komentar
 - Perbaris
 - Blok
 - Java Doc
- Class
 - Nama Class
 - Variable
 - Operation

Penamaan Class

- Kata Benda
- Diawali huruf kapital
- Tidak boleh ada spasi
- Tidak boleh diawali angka
- Unique
- Case Sensitive



TUGAS 1

- Buat Resume dari Pertemuan 1