POLBAN

Jurusan Teknik Komputer dan Informatika

Politeknik Negeri Bandung

Pertemuan 2 Java Fundamental 1
3.1 – 3.6

D3 Kelas 2A/2B

Dosen Pengampu :

Zulkifli Arsyad, Yadi Adithya, Beri N

Topics

- Comment
- Data Type
- Variable
- Operators
- String

Comment

Sr.No.	Comment & Description
1	**/* text */** The compiler ignores everything from /* to */. When longer comments are needed
2	**//text** The compiler ignores everything from // to the end of the line.
3	**/** documentation */** This is a documentation comment and in general its called **doc comment**. The **JDK javadoc** tool uses *doc comments* when preparing automatically generated documentation.

Listing 3.1 FirstSample/FirstSample.java

```
1  /**
2   * This is the first sample program in Core Java Chapter 3
3   * @version 1.01 1997-03-22
4   * @author Gary Cornell
5   */
6  public class FirstSample
7  {
8     public static void main(String[] args)
9     {
10       System.out.println("We will not use 'Hello, World!'");
11    }
12 }
```

Comment documentation

Source History

```java
import java.io.*;

/**
* <h1>Add Two Numbers!</h1>
* The AddNum program implements an application that
* simply adds two given integer numbers and Prints
* the output on the screen.
* <p>
* <b>Note:</b> Giving proper comments in your program makes it more
* user friendly and it is assumed as a high quality code.
*
* @author  Zulkifli
* @version 1.0
* @since   2014-03-31
*/

public class AddNum {

   /**
    * This method is used to add two integers. This is
    * a the simplest form of a class method, just to
    * show the usage of various javadoc Tags.
    * @param numA This is the first paramter to addNum method
    * @param numB  This is the second parameter to addNum method
    * @return int This returns sum of numA and numB.
    */
    public int addNum(int numA, int numB) {
       return numA + numB;
    }

    /**
    * This is the main method which makes use of addNum method.
    * @param args Unused.
    * @exception IOException On input error.
    * @see IOException
    */

    public static void main(String args[]) throws IOException {
     AddNum obj = new AddNum();
     int sum = obj.addNum(10, 20);

     System.out.println("Sum of 10 and 20 is :" + sum);
    }

}
```

Tag	Description	Syntax
@author	Adds the author of a class.	@author name-text
{@code}	Displays text in code font without interpreting the text as HTML markup or nested javadoc tags.	{@code text}
{@docRoot}	Represents the relative path to the generated document's root directory from any generated page.	{@docRoot}
@deprecated	Adds a comment indicating that this API should no longer be used.	@deprecated deprecatedtext
@exception	Adds a **Throws** subheading to the generated documentation, with the classname and description text.	@exception class-name description
{@inheritDoc}	Inherits a comment from the **nearest** inheritable class or implementable interface.	Inherits a comment from the immediate surperclass.
{@link}	Inserts an in-line link with the visible text label that points to the documentation for the specified package, class, or member name of a referenced	{@link package.class#member label}

https://www.tutorialspoint.com/java/java_documentation.htm

Generate Javadoc

javadoc -d [path to javadoc destination directory] [package name]

```
D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\src\addnum>javadoc -d D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc AddNum.java
Loading source file AddNum.java...
Constructing Javadoc information...
Standard Doclet version 11.0.10
Building tree for all the packages and classes...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\addnum\AddNum.html...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\addnum\package-summary.html...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\addnum\package-tree.html...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\constant-values.html...
Building index for all the packages and classes...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\overview-tree.html...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\index-all.html...

Building index for all classes...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\allclasses-index.html...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\allpackages-index.html...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\deprecated-list.html...
Building index for all classes...
Generating D:\ZULKIFLI\POLBAN\PENGAJARAN2022\GENAP20212022\TeknikPemrograman\Pertemuan2\AddNum\javadoc\allclasses.html...
```

PACKAGE CLASS TREE DEPRECATED INDEX HELP

ALL CLASSES

SUMMARY: NESTED | FIELD | CONSTR | METHOD DETAIL: FIELD | CONSTR | METHOD

Package addnum

Class AddNum

java.lang.Object
    addnum.AddNum

```
public class AddNum
extends java.lang.Object
```

Add Two Numbers!

The AddNum program implements an application that simply adds two given integer numbers and Prints the output on the screen.

Note: Giving proper comments in your program makes it more user friendly and it is assumed as a high quality code.

Since:

2022-02-09

Constructor Summary

Constructors

Constructor	Description
`AddNum()`	

Method Summary

Data Type

There are eight primitive types in Java, Four of them are integer types; two are floating-point number types; one is the character type char

Type	Storage Requirement	Range (Inclusive)
int	4 bytes	–2,147,483,648 to 2,147,483, 647 (just over 2 billion)
short	2 bytes	–32,768 to 32,767
long	8 bytes	–9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
byte	1 byte	–128 to 127

Table 3.2 Floating-Point Types

Type	Storage Requirement	Range
float	4 bytes	Approximately ±3.40282347E+38F (6–7 significant decimal digits)
double	8 bytes	Approximately ±1.79769313486231570E+308 (15 significant decimal digits)

```
public static void main(String[] args) {
    byte angka1 = 125;
    byte angka2 = 6;
    byte hasil = (byte) ( angka1+angka2);
    System.out.println(hasil);
}
```

Angka 1	Angka 2	Hasil
125	2	127
125	3	-128
125	4	-127
125	5	-126
125	6	-125

Variable

- In Java, every variable has a type

```
double salary;
int vacationDays;
long earthPopulation;
boolean done;
```

- Initializing Variable
-

```
int vacationDays;
vacationDays = 12;
```

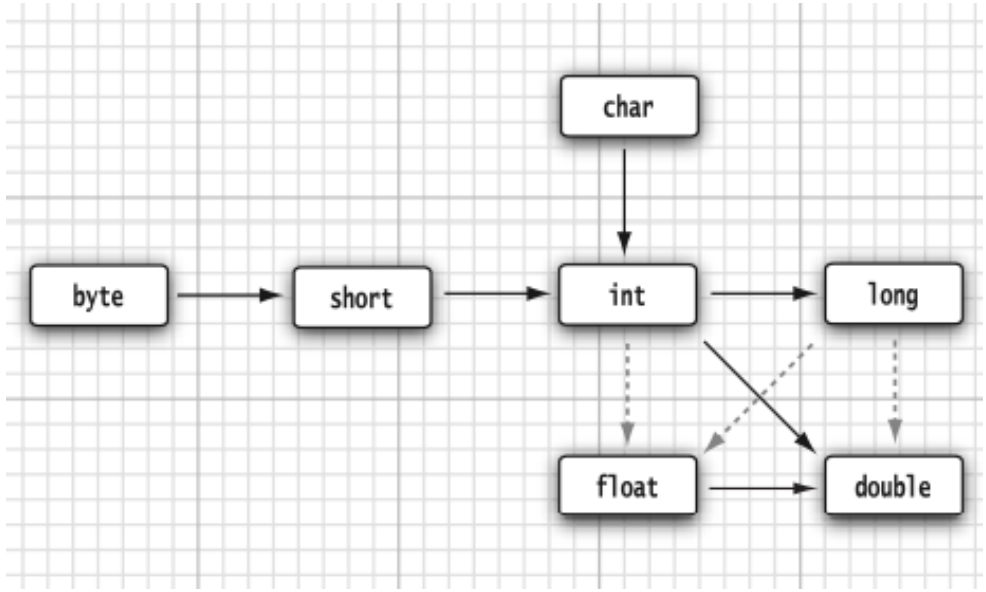
```
double salary = 65000.0;
System.out.println(salary);
int vacationDays = 12; // OK to declare a variable here
```

Operator

- The usual arithmetic operators +, -, *, / are used in Java for addition, subtraction, multiplication, and division
- Matematical Function
  - Math.sqrt(x);
  - Math.pow(x,a);
  - Trigonometry function
    - Math.sin, Math.cos, Math.tan
  - Exponential function
    - Math.exp, math.log
- Cast

Conversion between numeric types

- Conversion between numeric types



- Cast

```
double x = 9.997;
int nx = (int) x;
```

String

- Substring (extract sub string from large string)

```
String greeting = "Hello";
String s = greeting.substring(0, 3);
```

- creates a string consisting of the characters "Hel".
- Concatenation (join 2 string or more)

```
String expletive = "Expletive";
String PG13 = "deleted";
String message = expletive + PG13;
```

- Testing String for Equality

```
s.equals(t)
```

```
"Hello".equals(greeting)
```

- Empty and Null String

```
if (str.length() == 0)
```

or

```
if (str.equals(""))
```

```
if (str == null)
```

```
if (str != null && str.length() != 0)
```

- String API
  - String class in java contain more than 50 method

- `char charAt(int index)`

  returns the code unit at the specified location. You probably don't want to call this method unless you are interested in low-level code units.
- `int codePointAt(int index)` 5.0

  returns the code point that starts at the specified location.
- `int offsetByCodePoints(int startIndex, int cpCount)` 5.0

  returns the index of the code point that is `cpCount` code points away from the code point at `startIndex`.
- `int compareTo(String other)`

  returns a negative value if the string comes before `other` in dictionary order, a positive value if the string comes after `other` in dictionary order, or `0` if the strings are equal.
- `IntStream codePoints()` 8

  returns the code points of this string as a stream. Call `toArray` to put them in an array.
- `new String(int[] codePoints, int offset, int count)` 5.0

  constructs a string with the `count` code points in the array starting at `offset`.
- `boolean equals(Object other)`

  returns `true` if the string equals `other`.
- `boolean equalsIgnoreCase(String other)`

  returns `true` if the string equals `other`, except for upper/lowercase distinction.
- `boolean startsWith(String prefix)`
- `boolean endsWith(String suffix)`

  returns `true` if the string starts or ends with `suffix`.