

Lab1

Introduction to java

Standalone –Apache Netbean 12.5 + jdk11.0.11

Online -replit.com

-jdoodle

บทที่ 1 introduction Lecture

1.1 ประวัติ

1.2 characteristic of Java Programming language

1.3 overview of software development process

1.4 The Java Platform

1.5 ขั้นตอนการเขียนโปรแกรม

1.6 การคอมไพล์และรันโปรแกรมเบื้องต้น

1.7 ออบเจค และ คลาส



1.8 เริ่มต้นเขียน application กับจาวา

การแสดงผลทางจอภาพ(Console Output)

ใช้ method ชื่อ "println" ซึ่งอยู่ใน คลาส System.out คำสั่งนี้จะนำข้อมูลที่เป็น String เพื่อนำมาแสดงผลทางจอภาพ

println พิมพ์ข้อความแสดงผลที่จอภาพแล้วขึ้นบรรทัดใหม่

ตัวอย่าง `System.out.println("Object-oriented");`

ตัวอย่าง `System.out.print("Object-oriented");`

```
----- Java Run -----  
Object-oriented  
Normal Termination  
Output completed (0 sec consumed).
```

```
----- Java Run -----  
Object-orientedNormal Termination  
Output completed (0 sec consumed).
```

ตัวอย่าง การเขียนโปรแกรม MyDog.java

```
public class MyDog {  
    public static void main(String args[]) {  
        System.out.println("My dog's name is abc.");  
        System.out.println("abc is my dog.");  
    }  
}
```

```
----- Java Run -----  
My dog's name is abc.  
abc is my dog.  
Normal Termination  
Output completed (0 sec consumed).
```

การแสดงผลที่จอภาพ
โดยใช้เครื่องหมาย +
ซึ่งข้อมูลทั้งหมดจะถูกแปลงให้เป็น **string** โดยอัตโนมัติ
เช่น

```
System.out.print("message"+ "message");
```

```
System.out.println("Specify what to do,"  
+ "not how to do it");
```

```
System.out.println("Specify what to do," +  
"not how to do it");
```

```
public class Test1
{
    public static void main(String[] args)
    {
        System.out.println("Welcome to Java " + " and
                            Java is fun " );
    }
}
```

error?

```
----- Java compile -----
Test1.java:5: unclosed string literal
                System.out.println("Welcome to Java " +      "and
                                   ^
Test1.java:6: unclosed string literal
                Java is fun " );
                ^
Test1.java:7: ')' expected
                ^
3 errors
Normal Termination
Output completed (0 sec consumed).
```

```
// program for test print and newline \n
```

```
import java.lang.*;
```

```
public class HelloTest {
```

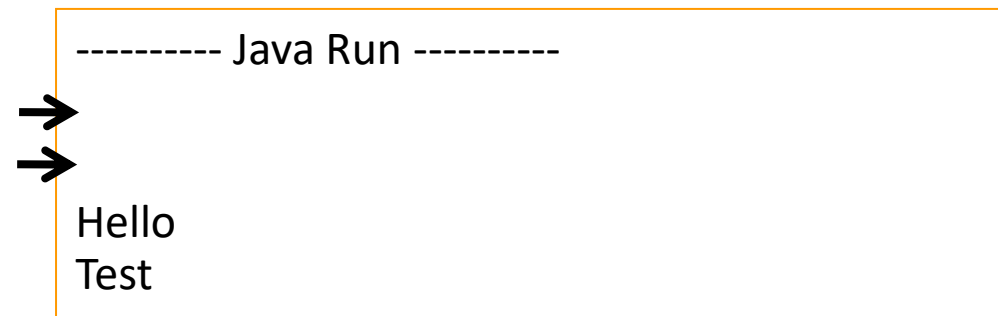
```
    public static void main(String[] args) {
```

```
        System.out.println();
```

```
        System.out.println("\nHello\nTest");
```

```
    }
```

```
}
```



```
// program for test print and tab \t
```

```
public class HelloTest {  
    public static void main(String[] args) {  
        System.out.println("Yes\n\tI do");  
    }  
}
```

ผลลัพธ์ที่ได้จากโปรแกรม

```
----- Java Run -----  
Yes  
    I do  
Normal Termination  
Output completed (0 sec consumed).
```

```
run:  
Yes  
    I do  
BUILD SUCCESSFUL (total time: 0 seconds)
```


escape character ใช้สัญลักษณ์ \ ตามด้วยตัวอักษร ซึ่งมีความหมายในการใช้งานดังนี้

| Escape code | ความหมาย |
|-------------|-----------------|
| \n | Newline |
| \t | Tab |
| \b | backspace |
| \r | Carriage return |
| \f | Formfeed |
| \\ | Backslash |
| \' | Single quote |
| \" | Double quote |
| \ddd | Octal decimal |
| \uxxxx | Hexa decimal |

Last
page

```

public class EspSeq {
    public static void main(String[] args) {
        System.out.println('\055');           // - oct
        System.out.println('\u002d');         // - hex
        System.out.println("\101");           // oct is A
        System.out.println("\u0041");         // hex is A
        System.out.println("\137");           // _
        System.out.println("\u0020");         // space
        System.out.println("\057");
        System.out.println("\u002F");
        System.out.println("\u0048\u0065\u006c\u006c\157");
        System.out.println("\u0023\u0023\u0023\u0023\u0023\u0023\u0023");
    }
}

```

```

----- Java run -----
-
-
A
A
-
/
/
Hello
#####

```

```

public class EspSeq {
    public static void main(String[] args) {
        System.out.println("\u0040\u0020\u0040\n"
            + "\u0020\u002D"
            + "\u0057\u0041\u0053\u0053\u0041\u004E\u0041"
            + "\u0020\u004E\u0041\u0049\u0059\u0041\u0050\u004F");
    }
}

```

@ @

-

WASSANA NAIYAPO

๓๒.3 fish

```
public class EspSeqFish
{
    public static void main(String[] args)
    {
        System.out.println("\u0020\u0020\u057\140\134\u057\n"+
                            "\074\060\n" +
                            "\u0020\u0020\134\140\u057\134\n");
    }
}
```

----- Java run -----

```
 /` \/  
<0  
  \`/\
```

Normal Termination
Output completed (0 sec consumed).


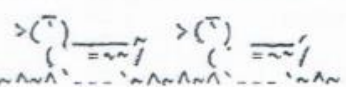

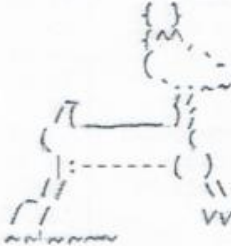
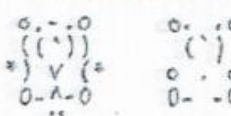

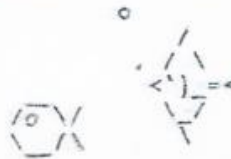


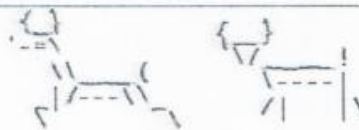
การบ้าน chap1

1. ใช้คำสั่ง print 1 คำสั่ง

แสดงรหัสนักศึกษา ชื่อ นามสกุล

และASCII Art

- กำหนดให้ใช้คำสั่ง System.out.print | คำสั่ง เพื่อแสดงรูป โดยใช้ฐาน 8 หรือฐาน 16 รหัสลงท้ายตรงกับข้อใดทำข้อนั้น 1 ข้อ

| | | | |
|---|--|---|---|
| 1 |  | 6 |  |
| 2 |  | 7 |  |
| 3 |  | 8 |  |
| 4 |  | 9 |  |
| 5 |  | 0 |  |

| Dec | Hx | Oct | Char | Dec | Hx | Oct | Html | Chr | Dec | Hx | Oct | Html | Chr | Dec | Hx | Oct | Html | Chr |
|-----|----|-----|-----------------------------|-----|----|-----|-------|-------|-----|----|-----|-------|-----|-----|----|-----|--------|-----|
| 0 | 0 | 000 | NUL (null) | 32 | 20 | 040 | | Space | 64 | 40 | 100 | @ | @ | 96 | 60 | 140 | ` | ` |
| 1 | 1 | 001 | SOH (start of heading) | 33 | 21 | 041 | ! | ! | 65 | 41 | 101 | A | A | 97 | 61 | 141 | a | a |
| 2 | 2 | 002 | STX (start of text) | 34 | 22 | 042 | " | " | 66 | 42 | 102 | B | B | 98 | 62 | 142 | b | b |
| 3 | 3 | 003 | ETX (end of text) | 35 | 23 | 043 | # | # | 67 | 43 | 103 | C | C | 99 | 63 | 143 | c | c |
| 4 | 4 | 004 | EOT (end of transmission) | 36 | 24 | 044 | $ | & | 68 | 44 | 104 | D | D | 100 | 64 | 144 | d | d |
| 5 | 5 | 005 | ENQ (enquiry) | 37 | 25 | 045 | % | % | 69 | 45 | 105 | E | E | 101 | 65 | 145 | e | e |
| 6 | 6 | 006 | ACK (acknowledge) | 38 | 26 | 046 | & | & | 70 | 46 | 106 | F | F | 102 | 66 | 146 | f | f |
| 7 | 7 | 007 | BEL (bell) | 39 | 27 | 047 | ' | ' | 71 | 47 | 107 | G | G | 103 | 67 | 147 | g | g |
| 8 | 8 | 010 | BS (backspace) | 40 | 28 | 050 | (| (| 72 | 48 | 110 | H | H | 104 | 68 | 150 | h | h |
| 9 | 9 | 011 | TAB (horizontal tab) | 41 | 29 | 051 |) |) | 73 | 49 | 111 | I | I | 105 | 69 | 151 | i | i |
| 10 | A | 012 | LF (NL line feed, new line) | 42 | 2A | 052 | * | * | 74 | 4A | 112 | J | J | 106 | 6A | 152 | j | j |
| 11 | B | 013 | VT (vertical tab) | 43 | 2B | 053 | + | + | 75 | 4B | 113 | K | K | 107 | 6B | 153 | k | k |
| 12 | C | 014 | FF (NP form feed, new page) | 44 | 2C | 054 | , | , | 76 | 4C | 114 | L | L | 108 | 6C | 154 | l | l |
| 13 | D | 015 | CR (carriage return) | 45 | 2D | 055 | - | - | 77 | 4D | 115 | M | M | 109 | 6D | 155 | m | m |
| 14 | E | 016 | SO (shift out) | 46 | 2E | 056 | . | . | 78 | 4E | 116 | N | N | 110 | 6E | 156 | n | n |
| 15 | F | 017 | SI (shift in) | 47 | 2F | 057 | / | / | 79 | 4F | 117 | O | O | 111 | 6F | 157 | o | o |
| 16 | 10 | 020 | DLE (data link escape) | 48 | 30 | 060 | 0 | 0 | 80 | 50 | 120 | P | P | 112 | 70 | 160 | p | p |
| 17 | 11 | 021 | DC1 (device control 1) | 49 | 31 | 061 | 1 | 1 | 81 | 51 | 121 | Q | Q | 113 | 71 | 161 | q | q |
| 18 | 12 | 022 | DC2 (device control 2) | 50 | 32 | 062 | 2 | 2 | 82 | 52 | 122 | R | R | 114 | 72 | 162 | r | r |
| 19 | 13 | 023 | DC3 (device control 3) | 51 | 33 | 063 | 3 | 3 | 83 | 53 | 123 | S | S | 115 | 73 | 163 | s | s |
| 20 | 14 | 024 | DC4 (device control 4) | 52 | 34 | 064 | 4 | 4 | 84 | 54 | 124 | T | T | 116 | 74 | 164 | t | t |
| 21 | 15 | 025 | NAK (negative acknowledge) | 53 | 35 | 065 | 5 | 5 | 85 | 55 | 125 | U | U | 117 | 75 | 165 | u | u |
| 22 | 16 | 026 | SYN (synchronous idle) | 54 | 36 | 066 | 6 | 6 | 86 | 56 | 126 | V | V | 118 | 76 | 166 | v | v |
| 23 | 17 | 027 | ETB (end of trans. block) | 55 | 37 | 067 | 7 | 7 | 87 | 57 | 127 | W | W | 119 | 77 | 167 | w | w |
| 24 | 18 | 030 | CAN (cancel) | 56 | 38 | 070 | 8 | 8 | 88 | 58 | 130 | X | X | 120 | 78 | 170 | x | x |
| 25 | 19 | 031 | EM (end of medium) | 57 | 39 | 071 | 9 | 9 | 89 | 59 | 131 | Y | Y | 121 | 79 | 171 | y | y |
| 26 | 1A | 032 | SUB (substitute) | 58 | 3A | 072 | : | : | 90 | 5A | 132 | Z | Z | 122 | 7A | 172 | z | z |
| 27 | 1B | 033 | ESC (escape) | 59 | 3B | 073 | ; | ; | 91 | 5B | 133 | [| [| 123 | 7B | 173 | { | { |
| 28 | 1C | 034 | FS (file separator) | 60 | 3C | 074 | < | < | 92 | 5C | 134 | \ | \ | 124 | 7C | 174 | | | |
| 29 | 1D | 035 | GS (group separator) | 61 | 3D | 075 | = | = | 93 | 5D | 135 |] |] | 125 | 7D | 175 | } | } |
| 30 | 1E | 036 | RS (record separator) | 62 | 3E | 076 | > | > | 94 | 5E | 136 | ^ | ^ | 126 | 7E | 176 | ~ | ~ |
| 31 | 1F | 037 | US (unit separator) | 63 | 3F | 077 | ? | ? | 95 | 5F | 137 | _ | _ | 127 | 7F | 177 | | DEL |

Source: www.LookupTables.com

วิธีหัดอ่านจากตาราง

ฐาน 8 oct \055 คือ -

ฐาน 8 oct \101 คือ A

ฐาน 16 hex \u002D คือ -

ฐาน 16 hex \U0041 คือ A

ส่วน 128-255 เป็น Extended ASCII Codes

| DEC | OCTAL | HEX | ASCII |
|-----|-------|-----------|-------|
| 0 | 000 | 00 | NUL |
| 1 | 001 | 01 | SOH |
| 2 | 002 | 02 | STX |
| 3 | 003 | 03 | ETX |
| 4 | 004 | 04 | EOT |
| 5 | 005 | 05 | ENQ |
| 6 | 006 | 06 | ACK |
| 7 | 007 | 07 | BEL |
| 8 | 010 | 08 | BS |
| 9 | 011 | 09 | HT |
| 10 | 012 | 0A | LF |
| 11 | 013 | 0B | VT |
| 12 | 014 | 0C | FF |
| 13 | 015 | 0D | CR |
| 14 | 016 | 0E | SO |
| 15 | 017 | 0F | SI |
| 16 | 020 | 10 | DLE |
| 17 | 021 | 11 | DC1 |
| 18 | 022 | 12 | DC2 |
| 19 | 023 | 13 | DC3 |
| 20 | 024 | 14 | DC4 |
| 21 | 025 | 15 | NAK |
| 22 | 026 | 16 | SYN |
| 23 | 027 | 17 | ETB |
| 24 | 030 | 18 | CAN |
| 25 | 031 | 19 | EM |
| 26 | 032 | 1A | SUB |
| 27 | 033 | 1B | ESC |
| 28 | 034 | 1C | FS |
| 29 | 035 | 1D | GS |
| 30 | 036 | 1E | RS |
| 31 | 037 | 1F | US |
| 32 | 040 | 20 | SPACE |
| 33 | 041 | 21 | |
| 34 | 042 | 22 | |
| 35 | 043 | 23 | |
| 36 | 044 | 24 | |
| 37 | 045 | 25 | |
| 38 | 046 | 26 | |
| 39 | 047 | 27 | |
| 40 | 050 | 28 | |
| 41 | 051 | 29 | |
| 42 | 052 | 2A | |
| 43 | 053 | 2B | |
| 44 | 054 | 2C | |
| 45 | 055 | 2D | |
| 46 | 056 | 2E | |
| 47 | 057 | 2F | |
| 48 | 060 | 30 | |
| 49 | 061 | 31 | |
| 50 | 062 | 32 | |
| 51 | 063 | 33 | |
| 52 | 064 | 34 | |
| 53 | 065 | 35 | |
| 54 | 066 | 36 | |
| 55 | 067 | 37 | |
| 56 | 070 | 38 | |
| 57 | 071 | 39 | |
| 58 | 072 | 3A | |
| 59 | 073 | 3B | |
| 60 | 074 | 3C | |
| 61 | 075 | 3D | |
| 62 | 076 | 3E | |
| 63 | 077 | 3F | |
| 64 | 100 | 40 | |
| 65 | 101 | 41 | |
| 66 | 102 | 42 | |
| 67 | 103 | 43 | |
| 68 | 104 | 44 | |
| 69 | 105 | 45 | |
| 70 | 106 | 46 | |
| 71 | 107 | 47 | |
| 72 | 110 | 48 | |
| 73 | 111 | 49 | |
| 74 | 112 | 4A | |
| 75 | 113 | 4B | |
| 76 | 114 | 4C | |
| 77 | 115 | 4D | |
| 82 | 122 | 52 | |
| 83 | 123 | 53 | |
| 84 | 124 | 54 | |
| 85 | 125 | 55 | |
| 86 | 126 | 56 | |
| 87 | 127 | 57 | |
| 88 | 130 | 58 | |
| 89 | 131 | 59 | |
| 90 | 132 | 5A | |
| 91 | 133 | 5B | |
| 92 | 134 | 5C | |
| 93 | 135 | 5D | |
| 94 | 136 | 5E | |
| 95 | 137 | 5F | |
| 96 | 140 | 60 | |
| 97 | 141 | 61 | |
| 98 | 142 | 62 | |
| 99 | 143 | 63 | |
| 100 | 144 | 64 | |
| 101 | 145 | 65 | |
| 102 | 146 | 66 | |
| 103 | 147 | 67 | |
| 104 | 150 | 68 | |
| 105 | 151 | 69 | |
| 106 | 152 | 6A | |
| 107 | 153 | 6B | |
| 108 | 154 | 6C | |
| 109 | 155 | 6D | |
| 110 | 156 | 6E | |
| 111 | 157 | 6F | |
| 112 | 160 | 70 | |
| 113 | 161 | 71 | |
| 114 | 162 | 72 | |
| 115 | 163 | 73 | |
| 116 | 164 | 74 | |
| 117 | 165 | 75 | |
| 118 | 166 | 76 | |
| 119 | 167 | 77 | |
| 120 | 170 | 78 | |
| 121 | 171 | 79 | |
| 122 | 172 | 7A | |
| 123 | 173 | 7B | |
| 124 | 174 | 7C | |
| 125 | 175 | 7D | |
| 126 | 176 | 7E | |
| 127 | 177 | 7F | |
| 127 | 7F | 0111 1111 | DEL |
| 128 | 80 | 1000 0000 | C |
| 129 | 81 | 1000 0001 | U |
| 130 | 82 | 1000 0010 | d |
| 131 | 83 | 1000 0011 | z |
| 132 | 84 | 1000 0100 | z |
| 133 | 85 | 1000 0101 | k |
| 134 | 86 | 1000 0110 | d |
| 135 | 87 | 1000 0111 | c |
| 136 | 88 | 1000 1000 | z |
| 137 | 89 | 1000 1001 | e |
| 138 | 8A | 1000 1010 | b |
| 139 | 8B | 1000 1011 | l |
| 140 | 8C | 1000 1100 | l |
| 141 | 8D | 1000 1101 | l |
| 142 | 8E | 1000 1110 | A |
| 143 | 8F | 1000 1111 | A |
| 144 | 90 | 1001 0000 | E |
| 145 | 91 | 1001 0001 | E |
| 146 | 92 | 1001 0010 | E |
| 147 | 93 | 1001 0011 | o |
| 148 | 94 | 1001 0100 | o |
| 149 | 95 | 1001 0101 | o |
| 150 | 96 | 1001 0110 | u |
| 151 | 97 | 1001 0111 | u |
| 152 | 98 | 1001 1000 | y |
| 153 | 99 | 1001 1001 | O |
| 154 | 9A | 1001 1010 | C |
| 155 | 9B | 1001 1011 | c |
| 156 | 9C | 1001 1100 | E |
| 157 | 9D | 1001 1101 | Y |
| 158 | 9E | 1001 1110 | P |
| 159 | 9F | 1001 1111 | f |

ฐาน8 OCTAL ฐาน16 HEX
 \055 คือ - \u002D คือ -
 \101 คือ A \u0041 คือ A

ฐาน8
 1055 → -
 1101 → A
 ฐาน16