DateFormat과 SimpleDateFormat 비교

1. DateFormat

1-1. DateFormat.getDateInstance() 메서드

```java
import java.text.DateFormat;
import java.util.Date;
import java.util.Locale;

public class Ex01_DateFormat1 {
    public static void main(String[] args) {
        Date now = new Date();
        System.out.println("toString() : " + now);
        System.out.println();

        DateFormat dateFormat = DateFormat.getDateInstance();
        System.out.println("기본 : " + dateFormat.format(now));
        System.out.println();

        DateFormat format1 = DateFormat.getDateInstance(DateFormat.FULL);
        System.out.println(format1.format(now));
        DateFormat format2 = DateFormat.getDateInstance(DateFormat.LONG);
        System.out.println(format2.format(now));
        DateFormat format3 = DateFormat.getDateInstance(DateFormat.MEDIUM);
        System.out.println(format3.format(now));
        DateFormat format4 = DateFormat.getDateInstance(DateFormat.SHORT);
        System.out.println(format4.format(now));
        DateFormat format5 = DateFormat.getDateInstance(DateFormat.DEFAULT);
        System.out.println(format5.format(now));
        System.out.println();

        Locale locale = Locale.getDefault();
        DateFormat format6 = DateFormat.getDateInstance(DateFormat.FULL,
 locale);
        System.out.println(locale + " : " + format6.format(now));

        locale = Locale.FRANCE;
        format6 = DateFormat.getDateInstance(DateFormat.FULL, locale);
        System.out.println(locale + " : " + format6.format(now));

        locale = Locale.GERMANY;
        format6 = DateFormat.getDateInstance(DateFormat.FULL, locale);
        System.out.println(locale + " : " + format6.format(now));
    }
}
```

결과

```
toString() : Thu Oct 07 12:42:47 KST 2021

기본 : 2021. 10. 7.

FULL : 2021년 10월 7일 목요일 오후 12시 42분 47초 대한민국 표준시
LONG : 2021년 10월 7일 오후 12시 42분 47초 KST
MEDIUM : 2021. 10. 7. 오후 12:42:47
SHORT : 21. 10. 7. 오후 12:42
DEFAULT : 2021. 10. 7. 오후 12:42:47

ko_KR : 2021년 10월 7일 목요일
fr_FR : jeudi 7 octobre 2021
de_DE : Donnerstag, 7. Oktober 2021
```

1-2. DateFormat.getTimeInstance() 메서드

```java
import java.text.DateFormat;
import java.util.Date;
import java.util.Locale;

public class Ex02_DateFormat2 {
    public static void main(String[] args) {
        Date now = new Date();
        System.out.println("toString() : " + now);
        System.out.println();

        DateFormat dateFormat = DateFormat.getTimeInstance();
        System.out.println("기본 : " + dateFormat.format(now));
        System.out.println();

        DateFormat format1 = DateFormat.getDateTimeInstance(DateFormat.FULL,
DateFormat.FULL);
        System.out.println("FULL : " + format1.format(now));
        DateFormat format2 = DateFormat.getDateTimeInstance(DateFormat.LONG,
DateFormat.LONG);
        System.out.println("LONG : " + format2.format(now));
        DateFormat format3 = DateFormat.getDateTimeInstance(DateFormat.MEDIUM,
DateFormat.MEDIUM);
        System.out.println("MEDIUM : " + format3.format(now));
        DateFormat format4 = DateFormat.getDateTimeInstance(DateFormat.SHORT,
DateFormat.SHORT);
        System.out.println("SHORT : " + format4.format(now));
        DateFormat format5 = DateFormat.getDateTimeInstance(DateFormat.DEFAULT,
DateFormat.DEFAULT);
        System.out.println("DEFAULT : " + format5.format(now));
        System.out.println();

        Locale locale = Locale.getDefault();
        DateFormat format6 = DateFormat.getTimeInstance(DateFormat.FULL,
locale);
        System.out.println(locale + " : " + format6.format(now));
        locale = Locale.FRANCE;
        format6 = DateFormat.getTimeInstance(DateFormat.FULL, locale);
        System.out.println(locale + " : " + format6.format(now));
```

```
            locale = Locale.GERMANY;
            format6 = DateFormat.getTimeInstance(DateFormat.FULL, locale);
            System.out.println(locale + " : " + format6.format(now));
    }
}
```

결과

```
toString() : Thu Oct 07 12:44:01 KST 2021

기본 : 오후 12:44:01

FULL : 2021년 10월 7일 목요일 오후 12시 44분 1초 대한민국 표준시
LONG : 2021년 10월 7일 오후 12시 44분 1초 KST
MEDIUM : 2021. 10. 7. 오후 12:44:01
SHORT : 21. 10. 7. 오후 12:44
DEFAULT : 2021. 10. 7. 오후 12:44:01

ko_KR : 오후 12시 44분 1초 대한민국 표준시
fr_FR : 12:44:01 heure normale de la Corée
de_DE : 12:44:01 Koreanische Normalzeit
```

1-3. DateFormat.getDateTimeInstance() 메서드

```java
import java.text.DateFormat;
import java.util.Date;
import java.util.Locale;

public class Ex03_DateFormat3 {
    public static void main(String[] args) {
        Date now = new Date();
        System.out.println("toString() : " + now);
        System.out.println();

        DateFormat dateFormat = DateFormat.getDateTimeInstance();
        System.out.println("기본 : " + dateFormat.format(now));
        System.out.println();

        DateFormat format1 = DateFormat.getDateTimeInstance(DateFormat.FULL,
DateFormat.FULL);
        System.out.println("FULL : " + format1.format(now));
        DateFormat format2 = DateFormat.getDateTimeInstance(DateFormat.LONG,
DateFormat.LONG);
        System.out.println("LONG : " + format2.format(now));
        DateFormat format3 = DateFormat.getDateTimeInstance(DateFormat.MEDIUM,
DateFormat.MEDIUM);
        System.out.println("MEDIUM : " + format3.format(now));
        DateFormat format4 = DateFormat.getDateTimeInstance(DateFormat.SHORT,
DateFormat.SHORT);
        System.out.println("SHORT : " + format4.format(now));
        DateFormat format5 = DateFormat.getDateTimeInstance(DateFormat.DEFAULT,
DateFormat.DEFAULT);
        System.out.println("DEFAULT : " + format5.format(now));
        System.out.println();
```

```
        Locale locale = Locale.getDefault();
        DateFormat format6 = DateFormat.getDateTimeInstance(DateFormat.LONG,
DateFormat.LONG, locale);
        System.out.println(locale + " : " + format6.format(now));

        locale = Locale.FRANCE;
        format6 = DateFormat.getDateTimeInstance(DateFormat.LONG,
DateFormat.LONG, locale);
        System.out.println(locale + " : " + format6.format(now));

        locale = Locale.GERMANY;
        format6 = DateFormat.getDateTimeInstance(DateFormat.LONG,
DateFormat.LONG, locale);
        System.out.println(locale + " : " + format6.format(now));


    }
}
```

결과

```
toString() : Thu Oct 07 12:46:15 KST 2021

기본 : 2021. 10. 7. 오후 12:46:15

FULL : 2021년 10월 7일 목요일 오후 12시 46분 15초 대한민국 표준시
LONG : 2021년 10월 7일 오후 12시 46분 15초 KST
MEDIUM : 2021. 10. 7. 오후 12:46:15
SHORT : 21. 10. 7. 오후 12:46
DEFAULT : 2021. 10. 7. 오후 12:46:15

ko_KR : 2021년 10월 7일 오후 12시 46분 15초 KST
fr_FR : 7 octobre 2021 à 12:46:15 KST
de_DE : 7. Oktober 2021 um 12:46:15 KST
```

2. SimpleDateFormat

사용자가 원하는 형식의 날짜/시간 출력 모양을 지정할때 사용한다.

```java
import java.text.DateFormat;
import java.text.SimpleDateFormat;
import java.util.Date;
import java.util.Locale;

public class Ex04_SimpleDateFormat1 {
    public static void main(String[] args) {
        Date now = new Date();
        System.out.println("toString() : " + now);
        System.out.println();

        DateFormat dateFormat = new SimpleDateFormat();
        System.out.println("기본 : " + dateFormat.format(now));
        System.out.println();

        String pattern = "yyyy-MMM-dd(EEEE) hh:mm:ss.S a";
        Locale locale = Locale.getDefault();
```

```java
            dateFormat = new SimpleDateFormat(pattern, locale);
            System.out.println(locale + " : " + dateFormat.format(now));

            locale = Locale.FRANCE;
            dateFormat = new SimpleDateFormat(pattern, locale);
            System.out.println(locale + " : " + dateFormat.format(now));

            locale = Locale.GERMANY;
            dateFormat = new SimpleDateFormat(pattern, locale);
            System.out.println(locale + " : " + dateFormat.format(now));
    }
}
```

결과

```
toString() : Thu Oct 07 12:54:07 KST 2021

기본 : 21. 10. 7. 오후 12:54

ko_KR : 2021-10월-07(목요일) 12:54:07.826 오후
fr_FR : 2021-oct.-07(jeudi) 12:54:07.826 PM
de_DE : 2021-Okt.-07(Donnerstag) 12:54:07.826 nachm.
```

Date Format Pattern Syntax

Symbol	Meaning	Presentation	Example
G	era designator	Text	AD
y	year	Number	2009
M	month in year	Text & Number	July & 07
d	day in month	Number	10
h	hour in am/pm (1-12)	Number	12
H	hour in day (0-23)	Number	0
m	minute in hour	Number	30
s	second in minute	Number	55
S	millisecond	Number	978
E	day in week	Text	Tuesday
D	day in year	Number	189
F	day of week in month	Number	2 (2nd Wed in July)
w	week in year	Number	27
W	week in month	Number	2
a	am/pm marker	Text	PM
k	hour in day (1-24)	Number	24
K	hour in am/pm (0-11)	Number	0
z	time zone	Text	Pacific Standard Time
'	escape for text	Delimiter	(none)
'	single quote	Literal	'

길이에 따른 표현

Presentation	Number of Symbols	Result
Text	1 - 3	약어로 표시
Text	>= 4	전체 표시
Number	minimum number of digits is required	앞의 자리를 0으로 채움
Text & Number	1 - 2	숫자로
Text & Number	3	문자열로

```java
import java.text.SimpleDateFormat;
import java.util.Calendar;
```

```java
import java.util.Date;

public class Ex05_SimpleDateFormat2 {
    public static void main(String[] args) {
        Date now = new Date();
        System.out.println("toString() : " + now);
        System.out.println();

        String pattern = "G y yy yyyy"; // G : 연호, y :연도
        SimpleDateFormat simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "M MM MMM"; // M : 월
        simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "d dd ddd"; // D : 일
        simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "D DD DDD"; // 년 중의 일 : 1월 1일 부터의 일 수
        simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "E EE EEEE"; // D : 요일
        simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "h hh H HH k kk K KK KKK"; // 시간 : h(1~12), H(0~23), k(1~24),
K(0~11)
        simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "m s S mm ss SSS"; // m(분), s(초), S(밀리초)
        simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "y-M-d F"; // F : 월의 몇번째 주
        Calendar calendar = Calendar.getInstance();
        calendar.set(Calendar.DATE, 1);
        now = calendar.getTime();
        simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));
        calendar.set(Calendar.DATE, 20);
        now = calendar.getTime();
        System.out.println(pattern + " : " + simpleDateFormat.format(now));
        calendar.set(Calendar.DATE, 30);
        now = calendar.getTime();
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "y-M-d hh:mm:ss(a) w W z"; // a : AM/PM, w : 년의 몇번째 주, W :
월의 몇번째 주, z : 타임존
        calendar.set(Calendar.DATE, 1);
        now = calendar.getTime();
        simpleDateFormat = new SimpleDateFormat(pattern);
        System.out.println(pattern + " : " + simpleDateFormat.format(now));

        pattern = "y년 MM월 dd일 EEEE (a)hh시 mm분 ss초";
```

```java
            calendar.set(Calendar.DATE, 1);
            now = calendar.getTime();
            simpleDateFormat = new SimpleDateFormat(pattern);
            System.out.println(pattern + " : " + simpleDateFormat.format(now));

            pattern = "y'년' MM'월' dd'일' EEEE (a)hh'시' mm'분' ss'초'''"; // ' 를 출
력하려면 ''이어야 함
            calendar.set(Calendar.DATE, 1);
            now = calendar.getTime();
            simpleDateFormat = new SimpleDateFormat(pattern);
            System.out.println(pattern + " : " + simpleDateFormat.format(now));

            pattern = "y M d hh:mm:ss(E) a w W z MMM EEE MMMM EEEE";
            calendar.set(Calendar.DATE, 1);
            now = calendar.getTime();
            simpleDateFormat = new SimpleDateFormat(pattern, Locale.US);
            System.out.println(pattern + " : " + simpleDateFormat.format(now));
    }
}
```

결과

```
toString() : Thu Oct 07 14:46:01 KST 2021

G y yy yyyy : AD 2021 21 2021
M MM MMM : 10 10 10월
d dd ddd : 7 07 007
D DD DDD : 280 280 280
E EE EEEE : 목 목 목요일
h hh H HH k kk K KK KKK : 2 02 14 14 14 14 2 02 002
m s S mm ss SSS : 46 1 492 46 01 492
y-M-d F : 2021-10-1 1
y-M-d F : 2021-10-20 3
y-M-d F : 2021-10-30 5
y-M-d hh:mm:ss(a) w W z : 2021-10-1 02:46:01(오후) 40 1 KST
y년 MM월 dd일 EEEE (a)hh시 mm분 ss초 : 2021년 10월 01일 금요일 (오후)02시 46분 01초
y'년' MM'월' dd'일' EEEE (a)hh'시' mm'분' ss'초''' : 2021년 10월 01일 금요일 (오후)02
시 46분 01초'
y M d hh:mm:ss(E) a w W z MMM EEE MMMM EEEE : 2021 10 1 02:53:12(Fri) PM 40 1
KST Oct Fri October Friday
```

날짜 형식 기호 변경

```java
package kr.manamana.dateformat;

import java.text.DateFormatSymbols;
import java.text.SimpleDateFormat;
import java.util.Date;
import java.util.Locale;

public class Ex06_DateFormatSymbols {
    public static void main(String[] args) {
        Date now = new Date();
        System.out.println("toString() : " + now);
```

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

        DateFormatSymbols symbols = new DateFormatSymbols(new Locale("en",
"US"));
        String[] defaultDays = symbols.getShortWeekdays();

        for (String defaultDay : defaultDays) {
            System.out.print(defaultDay + " ");
        }
        System.out.println();

        defaultDays = symbols.getWeekdays();
        for (String defaultDay : defaultDays) {
            System.out.print(defaultDay + " ");
        }
        System.out.println("\n");

        symbols = new DateFormatSymbols(Locale.getDefault());
        defaultDays = symbols.getShortWeekdays();

        for (String defaultDay : defaultDays) {
            System.out.print(defaultDay + " ");
        }
        System.out.println();

        symbols = new DateFormatSymbols(Locale.getDefault());
        defaultDays = symbols.getWeekdays();

        for (String defaultDay : defaultDays) {
            System.out.print(defaultDay + " ");
        }
        System.out.println("\n");

        String[] capitalDays = { "", "SUN(일)", "MON(월)", "TUE(화)", "WED(수)",
"THU(목)", "FRI(금)", "SAT(토)" };
        symbols.setShortWeekdays(capitalDays);
        defaultDays = symbols.getShortWeekdays();

        for (String defaultDay : defaultDays) {
            System.out.print(defaultDay + " ");
        }
        System.out.println();

        SimpleDateFormat formatter = new SimpleDateFormat("E", symbols);
        String result = formatter.format(now);
        System.out.println(" Today's day of the week: " + result);
    }
}
```

결과

```
toString() : Thu Oct 07 15:20:19 KST 2021

Sun Mon Tue Wed Thu Fri Sat
Sunday Monday Tuesday Wednesday Thursday Friday Saturday

일 월 화 수 목 금 토
일요일 월요일 화요일 수요일 목요일 금요일 토요일

SUN(일) MON(월) TUE(화) WED(수) THU(목) FRI(금) SAT(토)
Today's day of the week: THU(목)
```