

Java Date Time in Java 8

java 1.0 java.util.Date;java.text.Format

java 1.2 java.util.Calendar

java 8 java.time.*

java 8 classes: LocalDate, LocalTime, LocalDateTime, Month (1-12), Period, Duration

Creating Dates and Times

static of() Overriden by LocalDate, LocalTime and LocalDateTime

LocalDate.of(y,m,d); m: int or Month(1-12)

LocalTime.of(h,mi,s,ns) ns: nano second

LocalDateTime.of(y,m,-d,h,mi,s,ns) LocalDateTime.of(d,t)

static now() Overriden by LocalDate, LocalTime and LocalDateTime

static parse(s,f) Overriden by LocalDate, LocalTime and LocalDateTime

LocalDateTime.parse(s,f) f must be DateTimeFormatter

LocalDate d= new LocalDate() //not compiled

LocalDate d= LocalDate.of(2015,2,30); //not compile

Manipulating Dates and Times

plusXxx(int)

minusXxx(int)

return new immutable, original not changed, like String

chain of method on date and time

getXxx(); //Xxx= DayOfWeek,DayOfYear, Month, Year

dt1.isBefore(dt2)

dt1.isAfter(dt2)

Xxx= Years / Months /Days/Hours/Minutes/Seconds/Nanos;

Java 8 date & time are immutable, like String objects.

Peroid and Duration

java.time.Period; Java.time.Duration;

4 ways to create a period

Period.ofXxx(int); //Xxx=Years,Months,Days

Period.of(int years,int months, int days);

Period.between (d1,d2)

Period.parse("P1Y2M3W4D");//same as Period.of(1, 2, 25)

Modify period

plusXxx(int); //Days|Weeks|Months|Years

minusXxx(int)

Use period

dt.plus/minnus(period);

d.plus/minus(period);

time.plus/minus(duration); //if input period, UnsupportedOperationException

Chain of Periods method does not make sense and raise compiler error

Formatting

2 methods to create a formatter

DateTimeFormatter f=DateTimeFormatter.ofXxx (FormatStyle.SHORT|MEDIUM|LONG|FULL);

DateTimeFormatter f=DateTimeFormatter.ofPattern ("yy-yy-MMMM-dd hh:mm:ss"); //M 1 MM 01 MMM Jan MMMM January

Standard formatter:

DateTimeFormatter.ISO_LOCAL_DATE/TIME/DATETIME

ISO_LOCAL_DATETIME: '2011-12-03T10:15:30'

3 ways to use formatter

f.format(date/time/datetime_obj);

date/time/datetime_obj.format(f);

LocalDate/Time/DateTime.parse(String s, DateTimeFormatter f);

1 Xxx = LocalizedDate, LocalizedTime,LocalizedDateTime

2 date and time format legal for datatime object, datatime format not legal for date or time object

