

The `bxjaholiday` package

Takuto ASAOKURA (wtsnjp)

v1.0.0 [2019/02/03]

Abstract

This package provides a command to convert dates to names of Japanese holidays (*shukujitsu*; 祝日). For internal use, I need to implement a function to judge the day of week (*youbi*; 曜日), so a command converting dates to *youbi* in the same manner is also available as a free gift. The equivalent functions and further (lower-level) APIs are provided for expl3.

1 System requirements

As one of the BX series¹ packages, `bxjaholiday` supports all TeX engines which supported by expl3 (i.e., the ε -TeX extension is required.) Specifically, following TeX systems are supported:

- TeX format: L^AT_EX 2 _{ε} .
- TeX engine: pdfTeX, X_ET_EX, LuaTeX,² pTeX, and upTeX.

2 Loading the package

The package should be loaded in the usual L^AT_EX 2 _{ε} way. No package option is available.

```
\usepackage{bxjaholiday}
```

3 L^AT_EX 2 _{ε} interfaces

`\jaholidayname` *

This command is expanded to the name of Japanese holiday corresponding to the specified date, if it is a holiday. For a date which is not a holiday, it will be expanded to nothing (an empty token.) See Table 1 for all possible results.

For $\langle year \rangle$, $\langle month \rangle$, and $\langle day \rangle$, you can explicitly write numbers, or use counters, e.g., `\year`, `\month`, and `\day`. To be exact, those could be any $\langle integer\ expression \rangle$.

¹BX series is a collection of L^AT_EX packages mainly developed by Takayuki YATO (a.k.a. ZR.) “BX” stands for “babel extensions” and packages in this series are normally support various TeX engines not only Japanese-specific ones (pTeX, upTeX, and so on.)

²Note that if you want to print Japanese characters with TeX engines which is not specifically designed for Japanese, you need to setup proper fonts and other things.

\jadayofweek ★ \jadayofweek{\langle year\rangle}{\langle month\rangle}{\langle day\rangle}

This command converts from a date to the name of week, i.e., one of 月, 火, 水, 木, 金, 土, 日. You can specify the arguments in exactly the same way as \jaholidayname.

\IfJaHolidayTF ★ \IfJaHolidayTF{\langle year\rangle}{\langle month\rangle}{\langle day\rangle}{\langle true code\rangle}{\langle false code\rangle}
\IfJaHolidayT ★ \IfJaHolidayT{\langle year\rangle}{\langle month\rangle}{\langle day\rangle}{\langle true code\rangle}
\IfJaHolidayF ★ \IfJaHolidayF{\langle year\rangle}{\langle month\rangle}{\langle day\rangle}{\langle false code\rangle}

The \IfJaHoliday(TF) tests are used to check if a date is a Japanese holiday or not. Note that substitute holidays (振替休日) are also judged as a holiday in this test.

4 expl3 interfaces

All expl3 interfaces provided by bxjholiday belong to the bxjh module.

4.1 Functions

\bxjh_holiday_name:nnn ★ \bxjh_holiday_name:nnn {\langle year\rangle}{\langle month\rangle}{\langle day\rangle}

This is expl3 version of \jaholidayname. It converts dates into Japanese holiday names.

\bxjh_day_of_week_name:nnn ★ \bxjh_day_of_week_name:nnn {\langle year\rangle}{\langle month\rangle}{\langle day\rangle}
\bxjh_day_of_week:nnn ★ \bxjh_day_of_week:nnn {\langle year\rangle}{\langle month\rangle}{\langle day\rangle}

\bxjh_day_of_week_name:nnn is an expl3 version of \jadayofweek. It converts a date into day of week in Japanese. To use that information in expl3, e.g., for branching, \bxjh_day_of_week:nnn is more suitable. It returns an internal int value, so you can compare those results with the constants provided by this package. See Section 4.2.

\bxjh_if_holiday:nnnTF ★ \bxjh_if_holiday:nnnTF {\langle year\rangle}{\langle month\rangle}{\langle day\rangle}{\langle true code\rangle}{\langle false code\rangle}

This test is expl3 version of \IfJaHoliday(TF).

\bxjh_apply_prev_day:Nnnn ★ \bxjh_apply_prev_day:Nnnn {\langle function\rangle}{\langle year\rangle}{\langle month\rangle}{\langle day\rangle}
\bxjh_apply_next_day:Nnnn ★ \bxjh_apply_next_day:Nnnn {\langle function\rangle}{\langle year\rangle}{\langle month\rangle}{\langle day\rangle}

These functions get previous/next day of the specified date, and apply it to the specified *function*. The *function* must take three arguments in the order. For example,

\bxjh_apply_next_day:Nnnn \bxjh_holiday_name:nnn { 2019 } { 12 } { 31 }

produces the result of:

\bxjh_holiday_name:nnn { 2020 } { 1 } { 1 }

4.2 Variables and constants

Names of Japanese holidays All of them are provided as global t1 variables. See Table 1.

Day of week Internally, bxjholiday uses integers to represent day of week, and corresponding int constants are defined. In addition to that, Japanese names of those are also provided as global t1 variables. See Table 2.

Table 1: Japanese holidays

Holiday	Variable	Name in Japanese
New Year's Day	\g_bxjh_ganjitsu_tl	元日
Coming of Age Day	\g_bxjh_seijin_tl	成人の日
National Foundation Day	\g_bxjh_kenkoku_tl	建国記念の日
The Emperor's Birthday	\g_bxjh_tennou_tl	天皇誕生日
Vernal Equinox Day	\g_bxjh_shunbun_tl	春分の日
Showa Day	\g_bxjh_showa_tl	昭和の日
Greenery Day	\g_bxjh_midori_tl	みどりの日
Constitution Memorial Day	\g_bxjh_kenpou_tl	憲法記念日
National Holiday	\g_bxjh_kokumin_tl	国民の休日
Children's Day (substitute holiday)	\g_bxjh_kodomo_tl \g_bxjh_furikae_tl	こどもの日 振替休日
Marine Day	\g_bxjh_umi_tl	海の日
Mountain Day	\g_bxjh_yama_tl	山の日
Autumnal Equinox Day	\g_bxjh_shunbun_tl	春分の日
Respect for the Aged Day	\g_bxjh_keirou_tl	敬老の日
Sports Day	\g_bxjh_sports_tl	スポーツの日
Health and Sports Day	\g_bxjh_taiiku_tl	体育の日
Culture Day	\g_bxjh_bunka_tl	文化の日
Labor Thanksgiving Day	\g_bxjh_kinrou_tl	勤労感謝の日
National Mourning of Showa	\g_bxjh_showa_taisou_tl	昭和天皇の大喪の礼
National Wedding of Akihito	\g_bxjh_akihito_kekkon_tl	皇太子明仁親王の結婚の儀
National Wedding of Naruhito	\g_bxjh_naruhito_kekkon_tl	皇太子徳仁親王の結婚の儀
Core Enthronement Ceremony	\g_bxjh_sokuirei_tl	即位礼正殿の儀
Coronation Day	\g_bxjh_sokui_tl	即位の日

Table 2: Day of week

Day of week	Constant (int)	Variable (tl)
Monday	\c_bxjh_monday_int	0 \g_bxjh_getsu_tl 月
Tuesday	\c_bxjh_tuesday_int	1 \g_bxjh_ka_tl 火
Wednesday	\c_bxjh_wednesday_int	2 \g_bxjh_sui_tl 水
Thursday	\c_bxjh_thursday_int	3 \g_bxjh_moku_tl 木
Friday	\c_bxjh_friday_int	4 \g_bxjh_kin_tl 金
Saturday	\c_bxjh_saturday_int	5 \g_bxjh_do_tl 土
Sunday	\c_bxjh_sunday_int	6 \g_bxjh_nichi_tl 日