The bxjaholiday package

Takuto ASAKURA (wtsnjp)

v1.1.1 [2021-09-28]

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 series[1] 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: LaTeX 2_ε.
- TeX engine: pdfTeX, XeTeX, LuaTeX,[2] pTeX, and upTeX.

2 Loading the package

The package should be loaded in the usual LaTeX 2_ε way. No package option is available.

```
\usepackage{bxjaholiday}
```

3 LaTeX 2_ε interfaces

`\jaholidayname` ⋆ `\jaholidayname{`⟨*year*⟩`}{`⟨*month*⟩`}{`⟨*day*⟩`}`

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 ⟨*year*⟩, ⟨*month*⟩, and ⟨*day*⟩, you can explicitly write numbers, or use counters, e. g., `\year`, `\month`, and `\day`. To be exact, those could be any ⟨*integer expression*⟩.

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

[2] Note 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{⟨year⟩}{⟨month⟩}{⟨day⟩}`

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{⟨year⟩}{⟨month⟩}{⟨day⟩}{⟨true code⟩}{⟨false code⟩}`
`\IfJaHolidayT` ⋆ `\IfJaHolidayT{⟨year⟩}{⟨month⟩}{⟨day⟩}{⟨true code⟩}`
`\IfJaHolidayF` ⋆ `\IfJaHolidayF{⟨year⟩}{⟨month⟩}{⟨day⟩}{⟨false code⟩}`

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 bxjaholiday belong to the `bxjh` module.

4.1 Functions

`\bxjh_holiday_name:nnn` ⋆ `\bxjh_holiday_name:nnn {⟨year⟩} {⟨month⟩} {⟨day⟩}`

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 {⟨year⟩} {⟨month⟩} {⟨day⟩}`
`\bxjh_day_of_week:nnn` ⋆ `\bxjh_day_of_week:nnn {⟨year⟩} {⟨month⟩} {⟨day⟩}`

`\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 {⟨year⟩} {⟨month⟩} {⟨day⟩} {⟨true code⟩} {⟨false code⟩}`

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

`\bxjh_apply_prev_day:Nnnn` ⋆ `\bxjh_apply_prev_day:Nnnn ⟨function⟩ {⟨year⟩} {⟨month⟩} {⟨day⟩}`
`\bxjh_apply_next_day:Nnnn` ⋆ `\bxjh_apply_next_day:Nnnn ⟨function⟩ {⟨year⟩} {⟨month⟩} {⟨day⟩}`

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 `tl` variables. See Table 1.

Day of week Internally, bxjaholiday 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 `tl` 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	`\g_bxjh_kodomo_tl`	こどもの日
(substitute holiday)	`\g_bxjh_furikae_tl`	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_shubun_tl`	秋分の日
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