IS Calendar

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Feb 2025

1 Introduction

This Calendar serves to be the easiest for Mathematical Calculations on Dates. Furthermore this also can convert to any other Calendars easily.

2 Calculations

The suffix 'G' is for Gregorian and 'I' for IS
Results for IS Calendar is I_y, I_m and I_d
Results for Gregorian Calendar is G_y, G_m and G_d

Gregorian to IS

$G_y = Gmonth()$
$G_m = Gmonth()$
$G_d = Gday()$
$j = julian(G_y, G_m, G_d) - 2451544.5$
$I_y = \lfloor j \div 360 \rfloor$
$a = (j \div 360) - I_y$
$I_m = \lfloor a \times 12 \rfloor$
$b = (a \times 12) - I_m$
$I_d = \lfloor b \times 30 \rfloor$

IS to Gregorian

$I_y = Iyear()$
$I_m = Imonth()$

$I_d = Iday()$
$a = I_d \div 30$
$b = I_m + a$
$c = b \div 12$
$d = I_y + c$
$e = (d \times 360) + 2451544.5$
G_y, G_m, $G_d = gregorian(e)$

3 Formatting

If the Gregorian Date is "1 Jan 2000", in IS Calendar is "0/0/0".
If the Gregorian Date is "4 Feb 2025", in IS Calendar is "25/5/16".
Thats Year, Month, Day formatting.

4 Others

For the "julian" formula is:

```
def julian(yr, mn, dy):
    dy = dy - 0.5
    a = (14 - mn) // 12
    y = yr + 4800 - a
    m = mn + 12 * a - 3
    return (dy + ((153 * m + 2) // 5) + 365 * y + y // 4 - y // 100
        + y // 400 - 32045)
```

For the "gregorian" formula is:

```
def gregorian(julian):
    a = 1

    b = 1

    j = julian + 0.5

    i = math.floor(j)

    f = j - i
```

```
if(i > 2299160):
    a = math.floor((i - 1867216.25)/36524.25)
    b = i + a - (a // 4) + 1
else :
    b = i

c = b + 1524

d = math.floor( (c-122.1) / 365.25)

e = math.floor(365.25 * d)

g = math.floor( (c - e) / 30.6001 )

day = c - e + f - math.floor(30.6001 * g)

month = 1

if(g < 13.5):
    month = g - 1
else :
    month = g - 13

year = 1

if(month > 2.5):
    year = d - 4716
else :
    year = d - 4715

return year, month, day
```

There are more uses of this calendar in the "uses" folder.
It does not care about Gregorian Skip.
So "15 Oct 1582" is "-423/-3/-14"
And so "4 Oct 1582" is "-423/-3/-15"
The "converter.py" doesn't detect the Julian to Gregorian change.