Find Daylight Savings Time 3/13/2020

DST begins on the second Sunday in March and Ends on the first Sunday in November.

Today's date is entered as a string in the format of yyyy-mm-dd.

The year, month and date are extracted and assigned to the variable ***tday***.

The algorithm to find the start and end date of DST is as follows:

> Find the number of the day from January first {***jan1=date(y,1,1)***} to the start of EST and to the start of DST. If today is within that range, it is DST. Otherwise it is EST
>
> Find the day of the week of March first. ***mar1 = datetime.date(yr,3,1).weekday()***
>
> ***mar1*** is that value of the day of the week. Monday is 0 and Sunday is 6.
>
> Find the number of days between March, 1 and January, 1. ***mar1days = data(yr,3,1)-jan1***
>
> Use an IF, ELIF sequence to find the second Sunday of the month.

Python designates the days of the week as follows:

Monday = 0
Tuesday = 1
Wednesday = 2
Thursday = 3
Friday = 4
Saturday = 5
Sunday=6

If March first is a Sunday (6), the second Sunday is March 8th.
If March first is a Saturday (5), the second Sunday is March 9th , etc

The IF,ELIF assigns the date to the variable ***dst***.

The DST start date is assigned to the variable ***dst_start = date(yr,3,dst)***.

To extract the number of days between the ***dst_start*** and ***jan1*** it is assigned to the variable ***start_dst=int((dst_start-jan1).days)***

> If you use the term ***dst_start – jan1***, the results are: ***67 days, 0:00:00***.
> The ***.days*** removes the ***days, 0:00:00*** and just leave the number.

A similar IF ELIF sequence is used to find the first Sunday in November.

The EST start date is assigned to the variable ***est_start=date(yr,11,est)***

Similarly, the number of days between est_start and jan1 is assigned to the variable: ***start_est = int((est_start-jan1).days)***

The tag or output of this routine is either EST or DST

A new variable for today, the number of days between today and January first is assigned to the variable ***ttday = int((tday-jan1).days)***

The IF-ELSE comparison determines the tag

if ttday-start_dst <0 or start_est - ttday <=0:

    tag= 'EST'

else:

    tag ='DST'