ESS201: Programming II - Lab
Assignment on C programming

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Lab Date: 2019-08-07/Wednesday/13:30:00/IST
Submission Deadline: 2019-08-14/Wednesday/23:59:59/IST

This lab assignment is to warm up on coding exercises. We focus on using `struct` in `C` to organize data into data structures to build the notion of objects.

Assume you are working on developing a calendar application. You have to print out time in in the following 24-hour format: 2019-08-07/Wednesday/14:00:00/IST. The operation your calendar application must support is going back and forth time given duration of time in specific units, namely, years, months, days, hours, minutes. This operation is needed to save and retrieve events. The notations for the duration of time would be YR, MT, DY, HR, MN, for years, months, days, hours, and minutes, respectively. Your standard input (stdin) argument for your program executable would be of the format: <current-time> <operation-"+" or "-"> <duration> <units>. The program must output the computed time in the aforementioned format. Few samples on input arguments and expected outputs:

```
$ mycalendar 2019-08-07/Wednesday/14:00:00/IST + 0 DY
$ 2019-08-07/Wednesday/14:00:00/IST

$ mycalendar 2019-08-07/Wednesday/14:00:00/IST + 45 MN
$ 2019-08-07/Wednesday/14:45:00/IST

$ mycalendar 2019-08-07/Wednesday/14:00:00/IST - 23 HR
$ 2019-08-06/Tuesday/13:00:00/IST

$ mycalendar 2019-08-07/Wednesday/14:00:00/IST - 2 MT
$ 2019-06-07/Friday/14:00:00/IST

$ mycalendar 2019-08-07/Wednesday/14:00:00/IST + 2 YR
$ 2021-08-07/Saturday/14:00:00/IST
```

[Hint: your struct should contain each unit of time, i.e. day, month, year, hours, minutes, seconds, weekday, timezone. There must be a function to read and write `C string` for the textual representation of time. There must, of course, be functions to do the addition and subtraction of duration of time with/from the given time, respectively. Also, give a thought on if you want to have a separate `struct` for "duration of time", which needs to involve units.]