

CS110: Computer Programming Lab
Department of CSE
IIT, Guwahati

Module 02 Stage 02 Exercise 01

Problem description

There are a number of steps in this problem.

Step 1: Request the user to provide a date in the following form: 01 Jan 2018. Note the month is specified by 3 alphabet characters (lower and upper case letters are to be treated identically). However, you do not need to test all three letters to guess the month. For example, the first letter 'F' or 'f' for a month is enough to mark the month as February.

Step 2: If the date is invalid, print a message indicating that the date is invalid.

Step 3: Using the following algorithm, determine the day of the week for the date and print a message that looks like this:

```
1 January 2018 is a Monday
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Algorithm for finding the day of the week for a date q-m-year.

Wikipedia.org describes a way to find weekday for any date using Zeller's congruence. The formula derived for computer implementations is:

$$h = \left(q + \left\lfloor \frac{13(m+1)}{5} \right\rfloor + Y + \left\lfloor \frac{Y}{4} \right\rfloor - \left\lfloor \frac{Y}{100} \right\rfloor + \left\lfloor \frac{Y}{400} \right\rfloor \right) \bmod 7,$$

where

- h is the day of the week (0 = Saturday, 1 = Sunday, 2 = Monday, ..., 6 = Friday)
- q is the day of the month
- m is the month (3 = March, 4 = April, 5 = May, ..., 14 = February)
- Y is modified year, which is $(year - 1)$ during January and February.