

## Laboratory Exercise

You are to write a program in 8086 assembly language to prompt the user to enter a number in the range from 1 to 365 and outputs the corresponding month in which the input day falls. For example:

```
C:\> d2m
Enter a number (1..365) : 365
Day 365 of the year belongs to December.
```

The objectives of the program are followings:

- input/output using DOS interrupts
- string-to-numeric conversion
- simple arithmetics

*Input/Output using DOS interrupts.* We already have covered this in the sample program.

*String-to-numeric conversion.* Recall that we have no formatting string as in C to read input in the desired types. All information read are in ASCII format and so conversion should be done. Given a number, we can use the *Horner's Formula* to do the conversion.

The ASCII code for '0' is 48. So, the value of  $d_0d_1\dots d_{n-1}$  is

$$value_i = value_{i-1} \times 10 + (d_{i-1} - 48)$$

$value_{n-1}$  gives the value of the string  $d_0d_1\dots d_{n-1}$  represents.

*Simple arithmetics.* Cumulative subtraction of the integer enables us to determine in which month the day falls.

*Program skeleton.* On the next page. The full version will be given out (in email) on Thursday.