**OOP Lab# Semi Technical Specifications of Conceptual Object : Date, e.g., 28/2/1999, February 29, 2000**

In our daily discourse we frequently mention date. Date allows us to refer to a day of some month of

some year of occurrence of some event that may be in future. It generally, contains three numbers that

signify day, month and year. Month part sometimes takes textual form like 31-DEC-2016 or October 31,

2017. For simplicity let loose year value be negative for BC and positive for AD. Other two numbers have

constraints on the values they can attain. Numbered ‘month’ must range 1..12. Day number can be

natural number with upper limit to be 30 or 31 for 11 months, a well known constraint. For February the

upper is limit 29 in leap year otherwise limit is 28. It is important that leap year be identified according

to Gregorian calendar definition. You should use concept of static data members of class to store the

information to be shared among all objects that may ease out implementing constraint enforcement as

well as through suitable private member functions. In this lab you will design and implement date as a

software object with maximum usability by designing and implementing CDate class for this purpose.

Specifications: The object has a number of data members to represent attributes and constraints of the

object to fully support it functionalities as listed below:

a) The object gives suitable prompt to the user to input proper values of day, month and year from

key board, validate them and keep on re-prompting upon invalid entries.

b) It can print date on the current cursor position in different form upon suitably defined option as

function parameter.

c) User can reset values of day, month and year available as constant or variable expressions

individually as well as all three together with a single message.

d) User can get values of day, month or year from the object when required

e) User can create an object according values for day, month and year as constant or variable

expressions.

f) User can simply create object/s day=14; month=8; year = 1947 values at ease and for arrays.

g) User can get a string from the object containing its mathematical from

h) For certain end user program the programmer can change the spelling of months through array

of string. Case may of different language or fun encryption.

i) A programmer can compare date objects through <,>,<=,>=,==,!= , operators ++, change date

through --, +, -, +=,-= and do i/o through <<, >> operators.

j) A programmer can send cascaded calls to an object as a single message to invoke a sequence of

actions.

k) A programmer can use >> , << operators for console input/output.

l) A programmer can save objects in a binary file as well load from such file once a file pointer is

set at proper location where some date object has previously been stored.

m) A programmer can display date on a dialog box on a window in for window programming

environment. Hint: a utility function that returns date printed in a string.

Convert the specifications to C++ format to declare CDate class interface with suitable data members

and member functions of suitable types and access in a header file. Then implement the member

functions in a separate \*.CPP file. Write a driver program main function to fully test the implemented

class functionalities.