CPT113/CPM 213: Programming Methodology & Data Structure
Assignment 1
Academic Session 2020/2021

Given the definition for class dateType as follows:

Class datetype

```
{
public:
   void setdate ( int month, int day, int year);// function to set the date
   void getdate ( int & month, int& day, int & year); //function to return the date
   void printdate() const; // function to output the date in the form (mm-dd—yy)
   datetype (int month =1, int day =1, in,  year = 2020);

private:
  int dmonth ; // variable to store the month
  int dday ;    // variable to store  the day
  int dyear ;   // variable to store the year

};
```

The definition for the member function of the datetype are as follows:

```
void    datetype :: setdate( int month, int day, int year)
 {
    dmonth= month;
    dday = day;
    dyear = year;
}

void datetype::getdate ( int & month, int& day, int & year)
{
    month= dmonth;
    day = dday;
    year = dyear;
}

void datetype:: printdate() const
{
 cout <<dmonth << "-"<<dday<<"-"<<dyear
}

datetype::datetype(int month, int day, int year)
{
  setdate( month, day, year);
}
```

A.Redefine the datetype and write the definition to implement the following operations:

1) Set the month
2) Set the day
3) Set the year
4) Return the month
5) Return the day
6) Return the year
7) Test whether the year is a leap year
8) Return the number of days in the month. For example, if the date is 3-12-2020, the number of days to be returned is 31 days
9) Calculate the new date by adding a fixed number of days to the date. For example, if the date is 3-18-2020 and the days to be added are 10, the new date is 3-28-2020

B. Derive the class extdatetype and add the data member to class extdatetype so the month can also be stored in string form. The date can be printed in the following format:

3-18-2020 and March 18, 2020

c. Design the class studentinfo which have the ttudent information such first name and last name and matric number.

d. The information of student birthday can be displayed and printed in both format as (B).

Apply the concept of inheritance, composition, operator overloaded and friend function to complete in the above program. Output the result based on the information in (A), (B), (C) and (D).