Project 8

Write a program that displays the calendar for a given month of the year. The program prompts the user to enter the year and the month, and then displays the entire calendar for the month.

```
Enter full year (e.g., 2001): 2000
Enter month in number between 1 and 12: 2
```

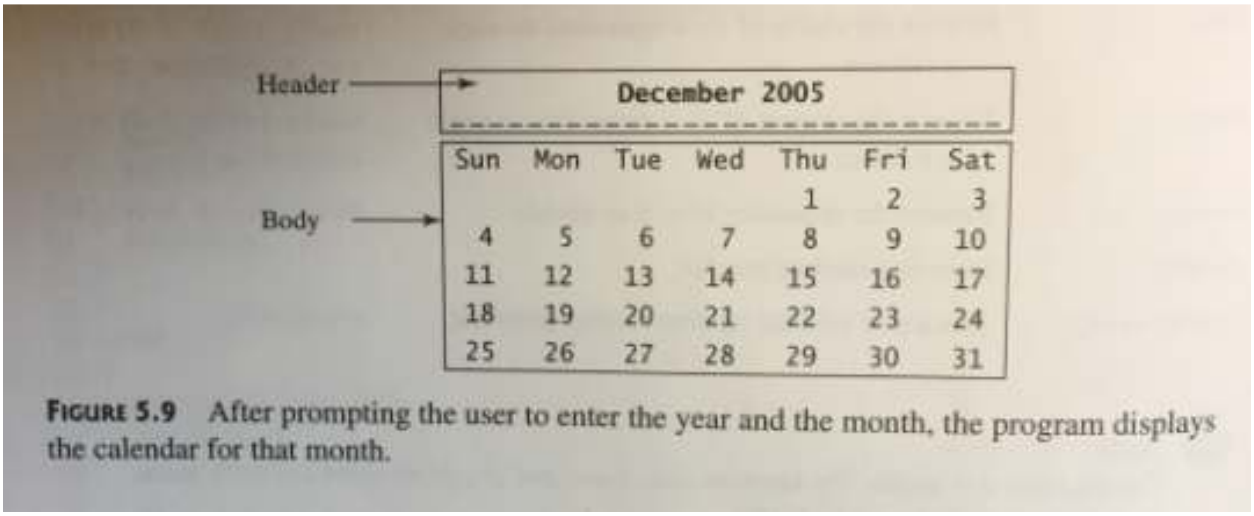

FIGURE 5.9 After prompting the user to enter the year and the month, the program displays the calendar for that month.

Create a structure chart showing the hierarchical relationship of the subproblems in the program. (Minimum of 6 subproblems)

Implementation Details that you can use:

The **isLeapYear(int year)** function can be implemented using the following code:

```
bool isLeapYear(int year)
{
  return year % 400 == 0 || (year % 4 == 0 && year % 100 != 0);
}
```

Use the following fact to implement **getTotalNumberOf DaysInMonth(int year, int month)**:

- January, March, May, July, August, October, and December have thirty-one days.

- April, June, September, and November have thirty days.
- February has twenty-eight days during a regular year and twenty-nine days during a leap year. A regular year, therefore, has 365 days, whereas a leap year has 366 days.

getStartDay – which day of the week is the first day of the month

Several ways to find start day. Assume you know that the start day for January 1, 1800 was Wednesday (startDay1800 = 3). You could compute the total number of days (totalNumberOfDays) between January 1, 1800 and the first date of the calendar month. The start day for the calendar month is (totalNumberOfDays + startDay1800) % 7, since every week has seven days.

To implement **getTotalNumberOfDays(int year, int month)**, you need to compute the total number of days **(totalNumberOfDays)** between January 1, 1800 and the first day of the calendar month. You could find the total number of days between the year 1800 and the calendar year and then figure out the total number of days prior to the calendar month in the calendar year. The sum of these two totals is **totalNumberOfDays**.

To use:

```
cout << setw(16) << "December";
```

you need:

```
#include <iomanip>
```

Zip your program and your structure chart into “Your_last_name.zip” and upload to Moodle.