Lab 1: Find the Season

Goals

- Implement a simple C++ program showing separation of interface from implementation
- Implement a simple console based UI to drive the program

Description

You are to write C++ program that takes a date (month, day, year) as input and determines if it is in the Fall, Winter, Spring or Summer. While the exact date varies slightly across each year, for purposes of this program we will assume the following:

Spring

- First Day: The Vernal Equinox (March 21st)

Summer

- First Day: The Summer Solstice (June 21st)

Fall (Autumn)

- First Day: The Autumnal Equinox (September 23rd)

Winter

- First Day: The Winter Solstice (December 22nd)

Tasks

1. You are provided the header file, **`Date.h`**. You are welcome to add additional **private** functions and member/data variables. You should implement the **`Date.cpp`** corresponding to the public methods in **`Date.h`**.

2. You are provided a **`main.cpp`** with sample inputs that are hard coded. You can use that to test the implementation of methods in **`Date.cpp`**. The expected output for sample inputs is:

```
01/01/2012 is in the Winter season.
03/10/1996 is in the Winter season.
06/20/2015 is in the Spring season.
09/22/2000 is in the Summer season.
12/25/1980 is in the Winter season.
11/22/2001 is in the Fall season.
10/31/2017 is in the Fall season.
09/23/2011 is in the Fall season.
```

3. In the **`main.cpp`**, create a simple console based UI that prompts the user for date, prints out the season information. Make sure to provide reasonable validation of user inputs.

   The follows screen prompts should be implemented:

```
The Season program

Enter a date...

Month:
```

Once the month is entered, user is prompted for day

```
The Season program

Enter a date...

Month: 8
Day:
```

Finally user is prompted for year

```
The Season program

Enter a date...

Month: 8
Day: 23
Year:
```

Prompt the user if they want continue or exit the program:

The sample of final screen

```
The Season program

Enter a date...

Month: 9
Day: 21
Year: 2003
09/21/2003 is in the Summer season.


Enter another date? (y/n): y

Month: 3
Day: 3
Year: 1956
03/03/1956 is in the Winter season.


Enter another date? (y/n): y

Month: 06
Day: 21
Year: 1893
06/21/1893 is in the Summer season.


Enter another date? (y/n): y

Month: 06
Day: 20
Year: 1893
06/20/1893 is in the Spring season.


Enter another date? (y/n): n

Bye...
```