Online on C++

1. Define a class **Date** with three private attributes **year**, **month** and **day** that represent a date. Write appropriate constructors to initialize a date.
2. Define a member function **void printDate()** that will print the in the format: **dd-mm-yyyy**.
3. Define a member function **int compareDays (Date d)** that will check whether the date d is smaller, equal or greater than the caller date.
4. Define a member function **int numOfDays (Date d)** that will return the number of days between a Date **d** and the caller date. Assume there are 12 months in a year and each month has 30 days.
5. Write a main() function to demonstrate the functionality implemented in questions 1-4.
6. Define a class **Event** with the following private attributes: (i) **name** to hold the name of the event, (ii) a start date, and (iii) an end date. Write appropriate setters and getters as required.
7. Define a function **int durationInDays()** in the **Event** class that returns the duration in days of the caller event.
8. Define a function **bool doesConflict(Event e)** in the **Event** class that checks whether an event **e** conflicts with the caller event. An event conflicts with another event if the start date of one event falls within the start and end date of the other event.
9. Write a main() function to demonstrate the functionality implemented in questions 6-8.

   [Bonus Part]
10. Define a class **EventList** with a private attribute **events** that represent an array of events. Another private attribute **n** represents the number of events in the EventList.
11. Define a function **void append(Event a)** in **EventList** to append an Event at the end of its list of events.
12. Define a function **void set(Event a[], int count)** in **EventList** to set the list of events in EventList.
13. Define a function **void print()** that will print name of all the events in EventList. Each event name should be printed in a separate line.
14. Define a function **void printEvents(Date d)** in **EventList** that will print the names of all the events that are running on the date **d**.
15. Write a main() function to demonstrate the functionality implemented in questions 10-14.
16. Try to reuse the functions of each class as much as possible. Do not write duplicates codes.