



## Timestamp

The purpose of this question is to design a class to specify time stamps. A timestamp represents a moment in time. In fact, this object contains a date and a time.

So in this question you will need to implement three classes:

### history class

This class contains three data members: day and month (as numbers) and year (as four digits). For simplicity, consider all months as 30 days.

The methods of this class are:

١. A constructor that receives the day, month, and year.
٢. Setter and getter functions that you need.
٣. The ToString method whose input is the format string and whose output is the date converted into a string.
٤. Addition and subtraction operator between two dates
٥. Comparison operators "=", ">" and "<="

### time class



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This class contains three data members: hour (in 24-hour mode) and minutes and seconds

The methods of this class are:

1. A constructor that receives hours, minutes, and seconds.
2. Setter and getter functions that you need.
3. The ToString method whose input is the format string and the output is when it is converted into a string.
4. The addition and subtraction operator between two times
5. Comparison operators "==" , ">" and "<="

### **Timestamp class**

This class contains two data members: date and time

The methods of this class are:

1. A constructor that receives the date and time.
2. Setter and getter functions that you need.
3. The ToString method, whose input is the format string, and whose output is the time label converted into a string.
4. Addition and subtraction operator between two timestamps
5. Comparison operators "==" , ">" and "<="

**What is a template string?**

The format string is a string that specifies what format the date, time, or timestamp should be. The symbols used in this field are:

- Symbol d: means day
- The symbol m: means the month numerically
- The symbol y or Y: meaning the year in two digits or four digits, respectively
- Symbol h or H: meaning 12-hour or 24-hour clock, respectively
- Symbol i: means minute
- Symbol s: means seconds
- Symbol a: means .am or .pm

Other symbols appear exactly the same and unchanged in the output. Consider the following examples:

- 15 hours 27 minutes 35 seconds with the format string "h:i:s a" is equal to

3:27:35 p.m.

- The date of August 17, 2018 with the format string "Y/m/d" is equal to

1398/5/17

- The time tag is 13:54:20 on May 1, 2019 with the format string "y/m/d H:i" equal to

99/2/1 13:54

### sample main

```
int main(){
    Date d(13,1,1399);
    Time t(17,10,19);
    cout<<(d+Date(2,1,0)).ToString("y/m/d")<<endl;
    cout<<(t-Time(1,10,20)).ToString("h:i a")<<endl;
    TimeStamp ts(d,t);
    cout<<ts.ToString("Y/m/d H:i:s")<<endl;
    cout<<(ts>=TimeStamp(Date(13,1,1399),Time(17,11,20)))<<endl;
    return 0;
}
```

### Sample output

```
99/2/15
3:59 p.m.
1399/1/13 17:10:19
0
```

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