Students:

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21.1 Question 1 (5 marks)

In this exercise you will complete a Time class. Details given below. You are provided with the following files:

- main.cpp for use when developing your code (not used to test it)
- task.h read only header file
- task.cpp you will write your c++ assessed code in this file

Time Class Details

Write the definitions for the Time class in task.cpp. Complete the following constructors to initialise the class.

- Default constructor Time () that initialises the following private data members:
 - hours, minutes and seconds all to 0
- Second (overloaded) constructor Time (int h, int m, int s) that
 - has 3 parameters: h, m and s
 - the parameters should be used to initialise the corresponding private data members

Member Functions

- Getters:
 - GetHours() that returns the hours
 - GetMinutes() that returns the minutes
 - GetSeconds () that returns the seconds
- void Time::TimeDifference(const Time& end, const Time& start)
 This function
 - computes the difference between two given times, referred to as end and start, and updates the current object (this) with the calculated hours, minutes, and `seconds. (you can assume start is always before end)
 - your function will need to handle cases where *borrowing* is required (e.g., when the seconds or minutes difference is negative): i.e. *borrow* 1 unit from the higher component (e.g., 1 minute from minutes or 1 hour from hours) to resolve the negative value and then adjust the affected components accordingly

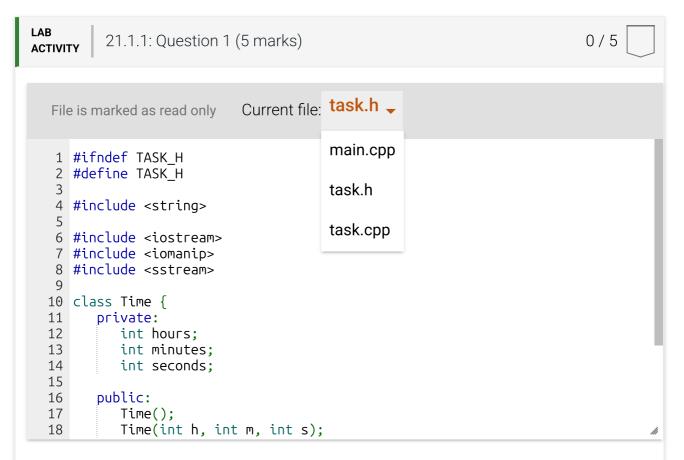
Example

For the following:

the output should be:

```
Difference: 1:20:40
```

NOTE in this example, *borrowing* is required from hours as the minutes difference is negative 671842.4329690.qx3zqy7



Develop mode

Submit mode

Run your program as often as you'd like, before submitting for grading. Below, type any needed input values in the first box, then click **Run program** and observe the program's output in the second box.

Enter program input (optional)

Section 21.1 - COSC 2802: C++ Programming Bootcamp (2025 - Semester 2) | zyBooks If your code requires input values, provide them here. main.cpp Run program Input (from above) — (Your program) Program output displayed here Coding trail of your work What is this? History of your effort will appear here once you begin working on this zyLab. Trouble with lab?