# COMP3512 - Lab Exercise 3 (Sep 25 - 29, 2017)

This is an exercise that you need to do on a computer. You'll need to commit and push your code to your GitLab repo, and submit for automated marking via Slack.

ABC Technologies Inc. is developing a new time tracking software to record how many hours each employee worked for in order to bill their clients by the hour. Each employee is allocated for a specific number of days to a project and at the end of each day, they will record how many hours they have worked on that day.

For this exercise, you will need to write a C++ class that will be used in the time tracking software.

## 1. Project Setup

1. Open Lab3.sln in Visual Studio 2017
2. Add TimeSheet.h file to your project. (refer to Lab 1 if you don't know how)
3. Add the following content in the header file.  
   #pragma once  
     
   #include <string>  
     
   namespace lab3  
   {  
    class TimeSheet  
    {  
    public:  
    TimeSheet(const char\* employeeName, int maxEntries);  
     
    // Write a copy constructor and a destructor here.  
     
    void AddTime(float hours);  
    float GetTotalTime() const;  
    float GetAverageTime() const;  
    const std::string& GetName() const;  
     
    private:  
    // You will need to add some private variables  
    // to keep track of the time record. Define them here.  
    };  
   }
4. Add TimeSheet.cpp file to your project.
5. Add the following empty implementations in the cpp file.  
     
   namespace lab3  
   {  
    TimeSheet::TimeSheet(const char\* name, int numDays)  
    {  
    }  
     
    void TimeSheet::AddTime(float timeInHours)  
    {  
    }  
     
    float TimeSheet::GetTotalTime() const  
    {  
    return 0.0f;  
    }  
     
    float TimeSheet::GetAverageTime() const  
    {  
    return 0.0f;

}  
  
 const std::string & TimeSheet::GetName() const  
 {  
 return "";  
 }  
 }

### Expected Behavior of TimeSheet class

* Each employee will get a timesheet.
* TimeSheet class will need to take
  + the name of the employee
  + the number of time entries he or she can enter to the project.
* Each day, each employee will punch in the number of hours he or she worked via TimeSheet::AddTime() method
* Employees cannot work more than 10 hours each day. If the value is invalid, TimeSheet::AddTime simply ignores the value.
* For billing purposes, the company requires to know the total number of hours an employee worked. TimeSheet::GetTotalTime() returns the total number of hours employee put on a project so far.
* For statistics, the company also requires to know the average work hours of an employee. TimeSheet::GetAverageTime() returns the average time an employee works each day in hours.
* TimeSheet::GetName() will show who’s timesheet it is.

## 2. Add and Implement Copy Constructor

The function signature is not shown intentionally.

## 3. Add Destructor

The function signature is not shown intentionally.

## 4. Implement All Class Functions Introduced in Step 1

* you will also need to introduce a number of member variables to make this class work
* don't forget to delete any memory that you create.
* using of C-style malloc and free is not allowed

## 5. Commit, Push and Ask for a Build

You know the drill :)

# 