

CS 542 HW Assignment 7 (Due by 12pm on May 3rd)

1. [40 points] Use the **Strategy Pattern** to improve the code in the hw7.cpp file.

In hw7.cpp,

Class **NormalBill** is used to create a bill for usual days and times. The total price for the normal bill is $1 * price * (1 + tax_rate)$

Class **HappyHourBill** is used to create a bill for happy hours with 20% discount. The total price for the normal bill is $0.8 * price * (1 + tax_rate)$

Class **HolidayBill** is used to create a bill for holidays with 20% more extract price. The total price for the normal bill is $1.2 * price * (1 + tax_rate)$

Use the Strategy design pattern to improve the code so that the clients only need to create one Bill object. The clients can change the only one Bill object for normal days, for happy hours, and for holidays at run-time.

Submission

SUBMIT ALL THE FILES IN A ZIP FILE TO COUGAR COURSES:

Always make sure the files you submit can be compiled on empress.csusm.edu.

- Program1: Submit **all the source code files** in a zip file to cougar course.

Note: Compress all the above files in a zip file, name it with your name, and submit the zip file on Cougar Course. For example, my first name is Xin and my last name is Ye, then I will name the zip file as XinYe.zip.

Grading

1. On Cougar Course, submit all the files in a zip file with your name. Otherwise, we will not grade it.
2. Your code should be compiled on Cougar Course. If there is a compilation error, you will get 0 points.
3. If your code fails in 1 test case, we will deduct 10% of the total points.
4. If your code fails in 2 test cases, we will deduct 20% of the total points.
5. If your code fails in 3 test cases, we will deduct 40% of the total points.
6. If your code fails in more than 3 test cases, we will deduct 90% of the total points.
7. The comments in your code count for 10% of the total points.
8. Additionally, we will deduct 10% points for each day after the due date.