

Chapters 4-6: Production Exam

What to submit:

Zip file named **YourName-Exam2-Code** which includes all four .cpp files.

Expected for each program:

(points built in to each program)

- Your name and date at the top of each .cpp file. (2 points each program)
- Comments for each "section" of code. These comments should resemble an algorithm or IPO chart which would walk someone through the program. (up to 10 points each program)
- Communication with the user ... Let the user know what the program purpose is, identify any input data provided by the user, and provide complete, easy-to-read description of the processed output. (up to 10 points each program)¹
- If money is involved, use 2 decimal places.
- User input is to be valid or not processed. (let the desk check examples be your guide)
- Execution: no points are available if the program doesn't run
- Execution: half credit is available if program executes, but has logic errors
- It is expected that your work will reflect your very best effort. There are various skill levels in the class Make sure to perform at your top level. Please don't just do the minimum.

Programs:

pies.cpp: (40 points)

TwinSister's Organic Pie Shop sells four different sizes of pies: small, medium, large, and family. The owners would like a program that displays the total number of pies sold as well as the percentage of the total number contributed by each different size. Use one decimal place for the percentage output.

desk check of 5, 10, 15, 20

```
Total sold: 50
Small percentage: 10.0%
Medium percentage: 20.0%
Large percentage: 30.0%
Family percentage: 40.0%
```

desk check using 0, 20, 30, 85

```
Total sold: 135
Small percentage: 0.0%
Medium percentage: 14.8%
Large percentage: 22.2%
Family percentage: 63.0%
```

water.cpp: (40 points)

It's time for the water bill! Fletcher Water Works need a program to calculate a customer's monthly water bill based on the difference between the current and previous meter readings. The program should display the number of gallons used as well as the total charge for the water. The water fee is \$7 per 1,000 gallons. HOWEVER, there is a minimum monthly charge of \$16.67 regardless of how little water is used.

desk check

```
Current reading: 16000
Previous reading: 12000
Gallons used: 4000
Total water charge: $28.00
```

desk check

```
Current reading: 16000
Previous reading: 15950
Gallons used: 50
Total water charge: $16.67
```

song.cpp: (10 points)

Examine, compile, and desk check the song.cpp file. Then, modify it so displays only the name of the gift corresponding to the day entered by the user.

desk check

```
Enter the day (1 through 12): 12
12 drummers drumming
```

newPrice.cpp (10 points)

The program should calculate and display an item's new price, but it is not working correctly. Test the program using 1, 10 | 2, 12, | 3, 10 | 4, 10. Edit the file so it executes correctly.

desk checks

```
C:\Users\Marlene\Desktop\CSC134>price
Item code (1, 2, or 3 only): 1
Old price: 10
New price: $11.00
```

```
C:\Users\Marlene\Desktop\CSC134>price
Item code (1, 2, or 3 only): 2
Old price: 10
New price: $15.00
```

```
C:\Users\Marlene\Desktop\CSC134>price
Item code (1, 2, or 3 only): 3
Old price: 20
New price: $18.00
```

```
C:\Users\Marlene\Desktop\CSC134>price
Item code (1, 2, or 3 only): 4
Old price: 10
Old price: $10.00
The item's price was not updated because the item code is not valid.
```

ⁱ These desk checks were done “quick and dirty” to provide output results for this exam. They do NOT reflect clear communication with the user!