



Assignment 1

Advanced Book Class

The coded solution to the following problem is to be done by you and only you. You may ask for help only from the professor and the tutors, and no one else. You may use your texts, notes, online tutorials, etc., but the code must be your own. Bear in mind that the professor and tutor are helping you with your C++ problem and not writing your program! If you have trouble compiling or debugging your code, see the professor or tutors as soon as possible. If none of us are available, you may email your question to your professor directly.

Problem Statement:

Extend the Book class from Lab 3 to support additional “Review” functionality.

- Use the additional files contained in the zip file to extend your program.
- Each review file contains a sequence of integers. Each number represents the star ratings (5-1) reviewers have given the corresponding book. For example:

```
12    // 5 star reviews
9      // 4 star reviews
4      // 3 star reviews
3      // 2 star reviews
2      // 1 star reviews
```

- Implement functions with the following prototypes:

```
public:
void addReviews( const string& reviewFile ); //reads the passed in reviews file and
                                              adds review data to the book
float calculateAverageReview(); //calculate the average of the reviews
int  getMostFrequentReview(); //get the review (number of stars) with the highest count

private:
void getReviews( int reviewsArray[], int size ); //fill reviewsArray with reviews
```

- Add member data to keep the review data – modify constructors as needed to initialize this data.
- The report for each book should look something like this:

Utopia | Type: Paperback Pages: 176 Weight(lbs):0.25 Average stars: 3.86667 Most frequent review: 5

- Verify that the output is correct and matches the data files.

Additional Requirements:

- Follow the coding standard!
- Make sure there are no compiler warnings as well!
- All code must be submitted through Canvas before the deadline.
- All work must be your own. Others may help in identifying bugs and compile errors but not in writing the code.

- Include all necessary files in a .zip file (include any data files) and submit it via Canvas.
- You will receive 0 points if your code does not compile and link.

Grading (20 points total):

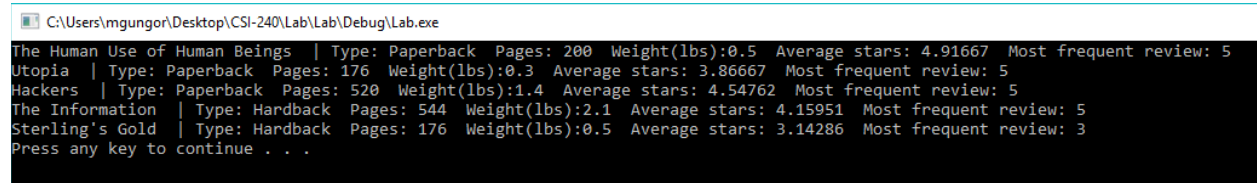
- Followed Coding Standard (including submitting assignment properly) – 5 points
- Class function implementations – 8 points (2 points each)
- Appropriate class member data added to hold reviews – 2 points
- Program produces correct output – 5 points

The Alternate Path...

- Produce your own implementation from scratch that achieves the same purpose as the solution above: Create a program that reads the info in books.txt and the accompanying review text files, and outputs a report (see report line above).
- You must use a class!

The class must contain: private data members, at least one private function, multiple public functions, a default constructor, constructor, destructor, and accessors (don't have to be used, but at least must exist).

Sample Output Screen



```

C:\Users\mgungor\Desktop\CSI-240\Lab\Lab\Debug\Lab.exe
The Human Use of Human Beings | Type: Paperback Pages: 200 Weight(lbs):0.5 Average stars: 4.91667 Most frequent review: 5
Utopia | Type: Paperback Pages: 176 Weight(lbs):0.3 Average stars: 3.86667 Most frequent review: 5
Hackers | Type: Paperback Pages: 520 Weight(lbs):1.4 Average stars: 4.54762 Most frequent review: 5
The Information | Type: Hardback Pages: 544 Weight(lbs):2.1 Average stars: 4.15951 Most frequent review: 5
Sterling's Gold | Type: Hardback Pages: 176 Weight(lbs):0.5 Average stars: 3.14286 Most frequent review: 3
Press any key to continue . . .

```

```

The Human Use of Human Beings | Type: Paperback Pages: 200 Weight(lbs):0.5 Average stars: 4.91667 Most frequent review: 5
Utopia | Type: Paperback Pages: 176 Weight(lbs):0.3 Average stars: 3.86667 Most frequent review: 5
Hackers | Type: Paperback Pages: 520 Weight(lbs):1.4 Average stars: 4.54762 Most frequent review: 5
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```