**Book Club Management System.**

Write a program to manage book reviews.

* The program will allow a user to enter Book Ids and scores for each book.
* Data will be validated as it is input.
* A report will be generated, summarising the review scores.

**Part 1: Input [35 marks]**

Write a program that accepts the input of book IDs and review scores, it will continue looking for input until the user enters a value of -999 for the BookID. [10]

Your program will include **data validation** for the review score and book id. Check that the book ID is present and begins with a 'B', followed by 8 digits. [10]

Check that the score is present, it is a double and is between 0 and 5 [10]

If either input is invalid, display a message and prompt for re-entry.

Store the book ids in an array and the scores in a second array (with a maximum of 10 entries in each). Note: You may use a List if you prefer.

The input part of the program will finish when the user has entered 10 books or when they have entered a bookID of -999. If there is an attempt to enter more than 10, inform the user and terminate the program.  [5]

**Part 2: Generate a rating message. [20 marks]**

As each review score is entered, determine and display the corresponding rating using the following conversion:

|  |  |
| --- | --- |
| Score | Rating Message |
| 0-1 | Poor |
| >1 and <=2 | Fair |
| >2 and <=3 | Good |
| >2 and <=4 | Very Good |
| >4 and <=5 | Excellent |

This should be implemented as a method that receives the score and returns the relevant message.

**Part 3: Generate a report of all reviews [35 marks]**

When the user input has finished:

1. Display a list of all the book IDs and their ratings. [10]
2. Display a table showing the rating categories , the number of books in each category, and the average score for each rating category. [20]
3. Finally, display the total number of reviews, the overall average score and the details of the book with the highest rating. [15]

**Part 4: Exception Handling.**

Your program should demonstrate how exception handling could be used to catch arithmetic exceptions such as division by zero. [10]

(See Example execution on next page)

Enter Book ID: B12345678

Enter Score : 4.5

Book B12345678 is rated as excellent

Enter Book ID: B12345666

Enter Score : 4h

Invalid data type for score

Enter Book ID: A12345666

Enter Score : 4

Invalid Book ID, must begin with a ‘B’

Enter Book ID: B12345888

Enter Score : 5

Book B12345888 is rated as excellent

Enter Book ID: -999

**Book Report**

Book ID Rating

B12345678 4.5

B12345888 5

**Rating Report**

Rating Books in this rating Average Rating

0-1 0

1+ -2 0

2+ -3 0

3+ -4 0

4+ -5 2 4.75

Total Reviews : 2

Overall Average : 4.75

Book with Highest score : B12345888