**Sample questions**

Q1. Hours, minutes, and seconds (HH:MM:SS) should be the three data members of the class Time. Use the overload + operator to add two more time objects. The first line of input comprises hours, minutes, and seconds (separated by spaces). The second line provides the same information again, again separated by spaces: hours, minutes, and seconds. Your job is to sum these two times and output the result.

Input Format:  
First line : hours , minutes and seconds (space separated)

Second line: hours , minutes and seconds (space separated)

Output Format:

Addition of two time

Example testcase:

|  |  |
| --- | --- |
| Input | Output |
| 11 59 59  12 59 59 | 0 59 58 |

Q. Create a matrix class to represent two-dimensional arrays. To add two 2D arrays, use the overloading of the + operator. To accomplish addition, include the overloaded operators and required member functions. Give a succinct implementation of how it's done.

Input:

First line contains number of rows ‘M’ and number of columns ‘N’

Second line contains MxN elements on first matrix

Third line contains MxN elements on second matrix

Output:

Addition of two matrix after operator overloading

Example test case:

|  |  |
| --- | --- |
| Input | Output |
| 2 3  1 2 3  2 4 5  4 5 6  8 6 7 | 5 7 9  10 10 12 |

Q. Create a C++ class called ArraySorter, which has a constructor, destructor, and member function called sortArray. This function uses the Bubble Sort algorithm to sort an array of numbers in ascending order. The class member variable should be initialised by the constructor using an integer array that is passed in as input. Any dynamic memory allocation should be cleaned up by the destructor. The Bubble Sort algorithm should be used by the sortArray function to sort the array.

Input:

First line contains length of array

second line contain array elements

You are required to design a C++ program for managing a library system. Implement a class Book to represent a book with the following attributes: title, author, and publicationYear. Q. Q. Implement the necessary constructor and destructor for the Book class. The constructor should initialize the attributes, and the destructor should display a message indicating the destruction of the object.

Implement the class and demonstrate the usage of the constructor and destructor by creating objects and observing their creation and destruction.

Implement the following class:

**Book Class:**

Properties: title (string), author (string), publicationYear (integer)

Methods:

**Book(string title, string author, int publicationYear)** - A constructor to initialize the title, author, and publicationYear of the book.

Destructor - Display a message indicating the destruction of the object.

**Input:**

First line contains books name

second line contains author name

Third line contains year of publication

**Example Test case:**

|  |  |
| --- | --- |
| **Input** | **Output** |
| Harry Potter  J.K. Rowling  1965 | Book Created: Harry Potter  Book author: J.K. Rowling  Destruction of Book: Harry Potter |