National University of Computer and Emerging Sciences



Laboratory Manual

for

Computer Programming

(CS 104)

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| Section | C&D |
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## Objectives

After performing this lab, students shall be able to:

* Overloaded operators.
* Practice with Constructor and Destructor

**Note:**

* Your code should not crash in any case.
* All data members should be private.
* Comment your code properly.

## In Lab: Problems / Exercises

|  |  |
| --- | --- |
| Exercise 1: A matrix class | **Estimated completion time (mins):** 30 |

1. Define a class Matrix having int\*\* data, int rows and int cols.

* Default constructor (initializes everything to zero) and destructor
* Copy constructor
* Assignment Operator

1. There should be a running driver (main) to test all functions.

|  |  |
| --- | --- |
| Exercise 2: Extend the matrix class and add Overloaded operators | **Estimated completion time (mins):** 90 |

1. **Extend the above class** and add following operators

* >> fill matrices from user
* << display the matrices
* + add two matrices
* != compare two matrices returns true if not equal
* subtract one from other (for your practice only. Submission not required)
* multiply two matrices (for your practice only. Submission not required)

1. Following program should run successful on your Matrix class.

|  |
| --- |
| Void main()  {  Matrix A,B,C; // Default constructor should set everything to zero  Cin >> A; //This will take rows and cols from user, allocate space for data and take elements of matrix  Cin >> B;  Cout<<A;  Cout << B;  C = A+B;  Cout << C;  If(A != B)  Cout<< “A is NOT Equal to B”;  } |