National University of Computer and Emerging Sciences



Lab Manual 07

Object Oriented Programming

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## Objectives

After performing this lab, students shall be able to:

* Copy constructor
* Pointers revision
* Constructors (default, overloaded).
* Destructor
* dynamic memory for data members as well as declaring objects.

**TASK 1:**

You are given files “LabManualStatic.cpp”, “CarsData.txt” and “RequiredOutput”. Partial definitions of classes Car in cpp file. Your task is to update the classes’ definitions according to the RequiredOutput.

* Do Not change Main and ReadDataFromFile functions.
* Your program should not leak any memory.
* Your program should not throw any exception.

**TASK 2:**

Write a class Matrix and perform following task.

* Class have three parameters (int \*\* matrix, int rows, int size)
* Write default constructor (make matrix point to null ptr)
* Write Copy Constructor
* Create 2 matrix objects in main and one should be the copy of other matrix using copy constructor.
* Write setters and getters
  + int\*\* GetMatrix()
  + int GetSize()
  + int GetRows()
  + void SetRows(int r)
  + void SetSize(int s)
  + void SetMatrix(int\*\* m)
* **InputMatrix**
* **Void OutputMatrix()**
* **Int\*\* AddMatrix(Matrix &matrix2)**
* **Description:** This function take matrix as parameters, adds them and saves the result in a newly created matrix R and returns the result
* Write Destructor