National University of Computer and Emerging Sciences



Lab Exercise 06

For

Object Oriented Programming Lab

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**FAST School of Computing**

# Instructions:

1. Make a word document with the naming convention “SECTION\_ LAB#\_ROLLNO” and put all your source code and snapshots of its output in it. Make sure your word file is formatted properly.
2. Plagiarism is strictly prohibited.
3. Do not discuss solutions with one another.

# Useful links

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| **Question#1** |

Implement a class **matrix** having attributes row, column and a double pointer. Now provide a function **Build()** where it will input number of rows, columns and create a matrix. Another function **input().** In main function, make 2 objects of class matrix, build both of them and take input via calling functions.

Provide constructor to initialize the double pointer with NULL , row and column with zero and destructor to delete the memory assigned. (No memory leak)

Implement function **Adj()** outside the class to find adjoint of both matrices and display it.

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| **Question#2** |

**Q2:** Write a class named Employee that has the following member variables:

• **name**. A string that holds the employee’s name.

• **idNumber**. An int variable that holds the employee’s ID number.

• **department**. A string that holds the name of the department where the employee works.

• **position**. A string that holds the employee’s job title.

* **Struct date.** Having integer attributes of day, month, year. This will be an object in class.

The class should have the following constructors:

• A **default constructor** that assigns empty strings ("") to the name, department, and position member variables, and 0 to the idNumber member variable

* A **destructor** that displays the message that “I’m a destructor”.

Write appropriate set and get methods to set and retrieve values in these member variables.

Now use these set methods with three different objects to set the class members with the values given below.

**Name ID Number Department Position Date Hired**

Adnan Ashraf 47899 Accounting Vice President 19/02/2000

Shahzaib 39119 IT Programmer 29/03/1999

Ziaullah 81774 Manufacturing Engineer 20/02/2005

Display the data for each employee on the console using get methods.

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| **Question#3** |

Write a class Author with following features:

* Instance variables :
  + **firstName** for the author’s first name of type String.
  + **lastName** for the author’s last name of type String.
* Constructor:
  + **Author (String firstName, String lastName)**: A constructor with parameters, it creates the Author object by setting the two fields to the passed values.
* Instance methods:
  + **void setFirstName (String firstName)**: Used to set the first name of author.
  + **void setLastName (String lastName)**: Used to set the last name of author.
  + **string getFirstName()**: This method returns the first name of the author.
  + **string getLastName()**: This method returns the last name of the author.
  + **String toString()**: This method printed out author’s name to the screen.