Institute of Engineering and Technology
Ahmedabad University
Semester – II
Section – A & B
Lab Assignment – Session 5

Assignment Date: Tuesday, February 17, 2015 **Submission Date: Monday, February 23, 2015**

Q1. Design a class called "Matrix" in **Java** to store various attributes required for a dynamic matrix. Create appropriate constructors (including a copy constructor) for the class. Create appropriate member functions for performing the following operations:

(a) Assign values to a matrix
(b) Extract values from a matrix
(c) Find transpose of a matrix
(d) Add two matrices after checking validity of the operation
(e) Multiply two matrices after checking validity of the operation
(f) Multiply a matrix with a scalar value

Q2. Design a class in **C++** called "Polynomial" that would store two dynamic arrays. The first array would represent the co-efficient of the terms and the second array would represent the degree (or exponent) of the terms. Create appropriate constructor(s) and destructor for the class. Overload the "+" operator to add two polynomials and store the result in the third polynomial. Overload the "*" operator to multiply a polynomial with a scalar value and store in another polynomial. Overload the unary "–" that would assign negative of a polynomial to another polynomial. Overload the "<<" and ">>" operators to read and display a polynomial.

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