**Punjab University College of Information Technology**



**OOP Assignment # 2**

**Deadline: 04 May, 2020 Marks: 10**

**Question:**

**ARITHMETIC OPERATIONS WITH MATRICES USING OPERATOR OVERLOADING**

**Objective:**

To gain the practical hands on experience of class, constructor, destructor, pointer, dynamic memory allocation/deletion, operator overloading using User Interface etc. Its core purpose is to develop the functionalities of user defined data types as available in built-in data types to use different types of operators for operations.

**Task:**

You are required to develop a program using class as per the following algorithm. You are also required to design a user interface and design as per the requirements of the algorithm:

**Algorithm**

**Step 1:** Create 3 object for the Matrix class m1, m2, m3.

**Step 2:** Your program also ask about the order of matrix before input at the time of object creation. After this allocate memory at runtime as per the order of matrix. Get input in matrix A and matrix B using the getInput function in the matrix class, which is invoked by the object m1 and m2.

**Step 3:** Invoked the operator function for matrix addition using the statement m3=m1+m2.

**Step 4:** Create an object c of the type Matrix in the body of the member function for matrix addition.

**Step 5:** Calculate matrix addition of the matrices of m1 and m2 and

Store it in the object c and then return c.

**Step 6:** Display the resultant matrix using the display member Function of matrix by invoking through the object m3.

**Step 7:** Call the operator function for matrix subtraction using the Statement m3=m1-m2.

**Step 8:** Pass the object m1 and m2 to the operator function.

**Step 9:** Create an object c of the type Matrix in the body of the member function for matrix addition..

**Step 10:** Calculate matrix subtraction using the object m1 and m2 and store in the object created mena c and then return c.

**Step 11:** Invoke the display function using the object m3.

**Step 12:** Call the operator function for matrix multiplication using the statement m3=m1\*m2.

**Step 13:** Create an object c of the type Matrix in the body of the member function for matrix addition.

**Step 14:** Perform the matrix multiplication and store it in the object c and return it.

**Step 15:** Invoke the display function using the object m3.