# Department of Computing

# CS361: Computer Graphics

# Class: BSCS

# Lab04: Object Transformation

**CLO2: Develop program to implement 3D Scenes**

# Date: 24th September, 2018

# Time: 9:00- 12:00

# Instructor: Dr. Muhammad Muddassir Malik

# Lab 4: Object Transformation

# Introduction

The **CanvasRenderingContext2D**.rotate() method of the Canvas 2D API adds a rotation to the transformation matrix. The angle argument represents a clockwise rotation angle and is expressed in radians.

**Objectives**

After performing this lab students should be able to:

Perform basic transformations.

**Tools/Software Requirement**

For testing HTML 5, CSS, JS

**References:**

<https://developer.mozilla.org/en-US/docs/Web/API/CanvasRenderingContext2D/rotate>

<https://github.com/toji/gl-matrix>

<http://learningwebgl.com/blog/?p=28>

**Lab Task**

Task 1: [Marks 10]

Create two triangles\*. Place one triangle in the top left quadrant. Place the second triangle in the

second quadrant and rotate it by 45 degrees. Place the third triangle in the third quadrant; rotate it by

-45 and scale by a factor of 2. Place the fourth triangle in the fourth quadrant and scale with a factor of (0.5. 0.75)

\* You can use vertices array with only 6 coordinates in it.

You cannot use any matrix library for this and you have to implement matrix creation and multiplication in the form of a library as part of the lab.

**Deliverable**

Upload your code with snap shots of the output.