

Port City International University

Course Name: Computer Graphics

Course Code: CSE 421

Assignment no: 02

Report On: 2D transformation, Bresenham’s circle drawing algorithm.

Submitted to: Emam Hossain

Lecturer, Department of CSE

Port City International University

Submitted by: Taspia Afrin

Program: BSc. in CSE

Batch: 16(Day)

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| Program No. | Program Name |
| 01 | Write a program to draw a circle using Bresenham’s circle drawing algorithm. |
| 02 | Write a program to do 2 Dimensional GEOMETRIC transformations (translation, rotation, scaling, mirror reflection about X and Y axes) for a line. |
| 03 | Write a program to do 2- Dimensional COORDINATE transformations (translation, rotation, scaling, mirror reflection about X and Y axes) for various objects. |

**Program no: 01**

**Program name:** Write a program to do 2- Dimensional COORDINATE transformations (translation, rotation, scaling, mirror reflection about X and Y axes) for various objects.

**Theory:** Bresenham’s line algorithm is a line drawing algorithm that determines the points of an *n*-dimensional raster that should be selected in order to form a close approximation to a straight line between two points. It is commonly used to draw line primitives in a bitmap image (e.g. on a computer screen), as it uses only integer addition, subtraction and bit shifting, all of which are very cheap operations in standard computer architecture. It is an incremental error algorithm. It is one of the earliest algorithms developed in the field of computer graphics. An extensionto the original algorithm may be used for drawing circles.

**Discussion:**

**Program No: 02**

**Program Name:** Write a program to do 2 Dimensional GEOMETRIC transformations (translation, rotation, scaling, mirror reflection about X and Y axes) for a line.

Theory: