***Introduction to the Lab***

**1.1 Lab Objective**

This course aims to develop the understanding of concepts and algorithms of computer graphics using C Programming. Also, this helps in understanding the working of MAYA tool for 2D/3D objects and their transformation using MAYA tool.

**1.2 Course Outcomes**

On successful completion of this Course, students should be able to:

257.1. Understand the use of C Graphics Library for writing the programs.

257.2. Implantation of scan conversion algorithms using C Programming.

257.3. Implementing the concept of 2D/3D transformation,

257.4. Implementing the concept of World & View Coordinate System and Clipping Algorithms.

257.5. Understand the object modeling and transformation using MAYA tool.

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| **Exp. no** | **Experiment Name** | **Date of performance** | **Date of checking** | **Marks** | **Signature** |
| 1. | a) Study and prepare list of Graphic functions.  b) Write a C program to make a hut and car using built-in graphic function. | 25 – 08 - 2020 | 30 – 08 - 2020 | 9 |  |
| 2. | DDA Algorithm  Write a C program to draw a line using DDA algorithm. | 06 – 09 - 2020 | 07 – 09 - 2020 | 10 |  |
| 3. | Bresenham’s Algorithm  Write a C program to draw a line using Bresenham’s algorithm. | 06 – 09 - 2020 | 11 – 09 - 2020 | 9 |  |
| 4. | Midpoint Circle Generation Algorithm  To implement midpoint circle generation algorithm or bresenham’s circle algorithm for drawing a circle of given center (x, y) and radius r. | 09 – 09 - 2020 | 11 – 09 - 2020 | 10 |  |
| 5. | BRESENHAM’S CIRCLE DRAWING A LGORITHM  Implementation of Bresenham’s circle drawing algorithm. | 15 – 09 - 2020 | 20 – 09 - 2020 | 10 |  |
| 6A. | Write C Programs for the implementation of 2D transformations. | 22 – 09 - 2020 | 03 – 10 - 2020 | 10 |  |
| 6B. | Write C Programs for the implementation of 2D and 3D transformations. | 29 – 09 - 2020 | 03 – 10 - 2020 | 10 |  |
| 7. | Write a C program to demonstrate Cohen Sutherland line clipping algorithm. | 27 – 10 - 2020 | 25 – 11 - 2020 | 10 |  |
| 8. | Write a C program to draw 4 point Bezier Curve. | 27 – 10 - 2020 | 25 – 11 - 2020 | 10 |  |
| 9. | Using Flash/Maya perform different operations (rotation, scaling, move etc.) on objects. | 03 – 12 - 2020 | 03 – 12 - 2020 | 10 |  |
| 10. | To bounce a ball using animation. | 03 – 12 - 2020 | 03 – 12 - 2020 | 10 |  |
| **Beyond Syllabus** | | | | | |
| 1. | Write a program to draw a car using inbuild graphics function and translate it from bottom left corner to right bottom corner of screen (Animation). | 3 – 11 - 2020 | 24 – 11 - 2020 | 10 |  |
| 2. | Write a program to rotate a circle (alternatively inside and outside) around the circumference of another circle (animation). | 3 – 11 - 2020 | 24 – 11 - 2020 | 10 |  |
| 3. | To Write a program in C to draw a Rainbow. | 03 – 12 - 2020 | 03 – 12 - 2020 | 10 |  |
| 4. | To Write a program in C to display a digital and analog clock displaying current time. | 03 – 12 - 2020 | 03 – 12 - 2020 | 10 |  |
| 5. | Created a program using C. A man walking in Rain. | 03 – 12 - 2020 | 03 – 12 - 2020 | 10 |  |