IS F311 - Computer Graphics
BITS Pilani, Hyderabad Campus
Assignment -1
Due Date : 22nd February 2020 (by Midnight)
Total Marks: 16 (weightage : 8%)

Exercise 1: Implement Midpoint Line Drawing algorithm for line with any slope in openGL. [2]

Exercise 2: Implement Midpoint Circle Drawing algorithm using openGL. [2]

Exercise 3: The assignment objective is to read the below paper (Reference 1) and implement it to draw binary trees. When you draw the tree, use Bresenham's Line Drawing and Circle Drawing to draw the edges and nodes. [6]

Exercise 4: Be creative, and experiment with many examples. Record your experimental results along with the documentation of algorithm. Develop HTML pages to document the results produced by your code, issues in coding, general discussion on the algorithm, timing analysis, references, and any other remarks. Work towards producing aesthetically pleasing outputs. Credits will be given for creative outputs. [4]

Exercise 5: Use software Doxygen to produce the code documentation. [2]

Reference 1:

Title: Tidier Drawings of Trees **Author:** Edward M. Reingold and John S. Tilford
Journal: IEEE Transaction on Software Engineering, Vol-7, Issue-2, 1981.

General Instructions:

1. This assignment can be done in groups of no more than three students.
2. Design the classes and headers properly. The code should be well indented, well commented and easily readable. Points will be deducted for an unorganized and uncommented code.
3. The assignment has to be coded completely in C/C++ using openGL.
4. You need to submit your working code, and HTML documentation in zip file to me by the deadline.
5. The name of the file should be id1_CG_A1.zip, where id1 refers to the ID of only one member of the group.
6. There should be only one submission from a group.
7. How to submit the zip file will be notified later.
8. You can discuss with your friends but refrain from copying the code and submitting. Copied codes will receive no credits for the entire assignment.
9. You have to demo the code to the instructor on a scheduled date and timing after submission.
10. **During Demo all members must be present. Anybody not present will be awarded zero credit.**