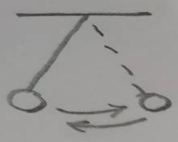
COMPUTER GRAPHICS

List of Practice CG Assignments

1. Write a Program to implement DDA Line drawing algorithm.
2. Write a Program to implement Bresenham's Line drawing algorithm.
3. Write a Program to implement Bresenham's Circle drawing algorithm.
4. Write a Program to implement Mid-point Circle drawing algorithm.
5. Write a Program to draw a face of Teddy bear using midpoint algorithm only.
6. Write a Program to draw a car using Bresenham's algorithm only.
7. Write a Program to implement Flood fill algorithm for a convex polygon. Draw polygon edges by DDA / Bresenham line algorithm.
8. Write a Program to implement Boundary fill algorithm for a convex polygon. Draw polygon edges by DDA / Bresenham line algorithm.
9. Write a Program to implement Fence fill algorithm for a concave polygon. Draw polygon edges by DDA / Bresenham line algorithm.
10. Write a Program to implement Edge fill algorithm for a convex polygon. Draw polygon edges by DDA / Bresenham line algorithm.
11. Write a Program to implement Scan line fill algorithm for a concave polygon. Draw polygon edges by DDA / Bresenham line algorithm.
12. Write a Program to implement 2D Scaling and rotation of a triangle.
13. Write a Program to implement 2D Scaling and translation of a triangle.
14. Write a Program to implement 2D rotation and translation of a triangle.
15. Write a C program to show that $R(\theta_1) \cdot R(\theta_2) = R(\theta_1 + \theta_2)$
16. Write a C program to show that $R(\theta_1) \cdot R(\theta_2) = R(\theta_2) \cdot R(\theta_1)$
17. Write a C program to show that two successive translations are additive in nature.
18. Write a C program to show that two successive rotations are commutative in nature.
19. Write a C program to show that two successive translations are commutative in nature.
20. Write a C Program to show that Reflection about a line Y=X is equivalent to reflection relative to X-axis followed by anticlockwise rotation of 90^0.
21. Write a Program to implement all type of reflections about X axis and about Y axis of a triangle.

22. Write a Program to implement all type of reflections about origin and about a line Y = X for a triangle.
23. Write a Program to implement X and Y shear transformation
24. Write a Program to implement rotation about arbitrary point.
25. Write a Program to implement Cohen Sutherland line clipping algorithm.
26. Write a Program to implement midpoint line clipping algorithm.
27. Write a Program to implement Sutherland-Hodgeman Polygon clipping algorithm.
28. Write a Program to implement Generalized Polygon clipping algorithm.
29. Write a Program to draw a Koch curve upto ‘n’ iterations
30. Write a Program to draw a Hilbert curve upto ‘n’ iterations.
31. Write a Program to draw a Bezier curve upto ‘n’ iterations using midpoint method.
32. Write a Program to draw a coastline using Fractal line upto ‘n’ iterations.
33. Write a Program to draw a mountain using Fractal surface upto ‘n’ iterations.
34. Write a program to achieve various animations without using any readymade line or circle function. Use DDA or Bresenham algorithm for implementation of line and circle. (for sample animations refer attached sheet).

1)



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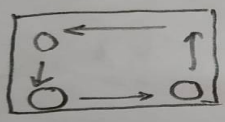

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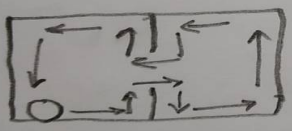

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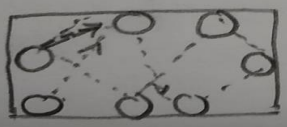

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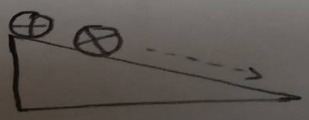

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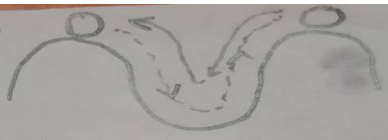

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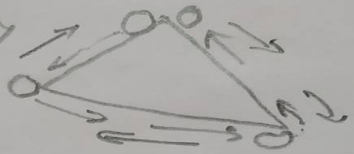

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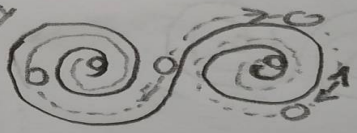

13)

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