

RAMANUJAN COLLEGE

UNIVERSITY OF DELHI

SOUTH CAMPUS IN KALKAJI 110019

PRACTICAL FILE

COMPUTER GRAPHICS

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Submitted to: Dr. Aakash

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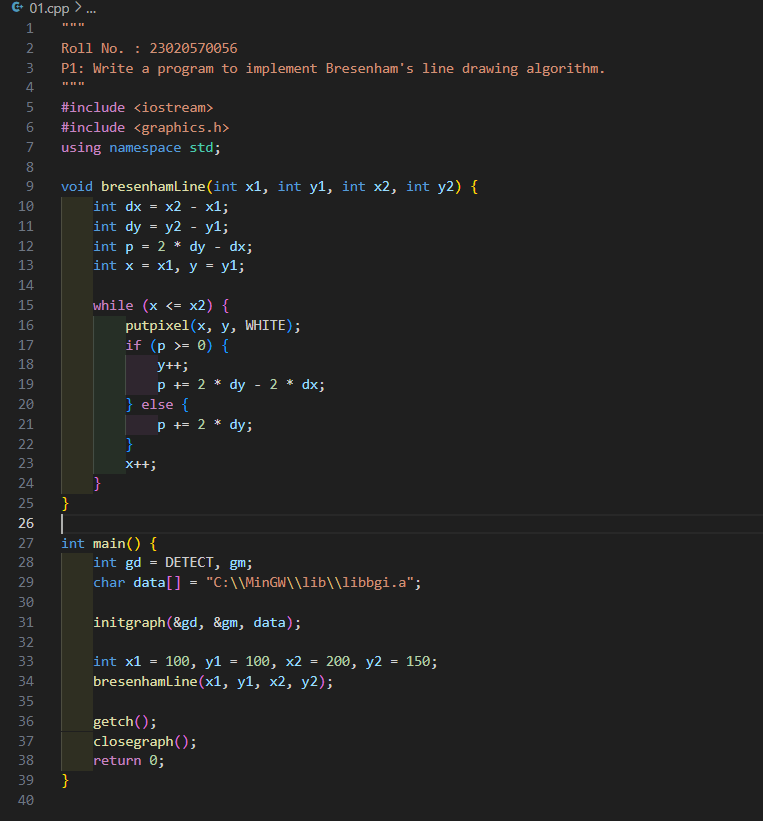
# ***Acknowledgment***

**I would like to express my sincere gratitude to my instructor, DR. Aakash, for providing me with the opportunity to work on this series of practical. Their invaluable guidance and support have been instrumental in understanding the core concepts of computer graphics.**

**I would also like to thank Ramanujan College, University of Delhi, for offering such a rich curriculum that fosters technical learning and hands-on experience. The practical applications of various algorithms and transformation techniques have deepened my knowledge in the field.**

**Furthermore, I would like to thank my peers for their encouragement and collaboration during the course of this project. Their inputs have enhanced my learning experience and contributed to a stimulating environment for problem-solving.**

**Q1. Write a program to implement Bresenham’s line drawing algorithm.**

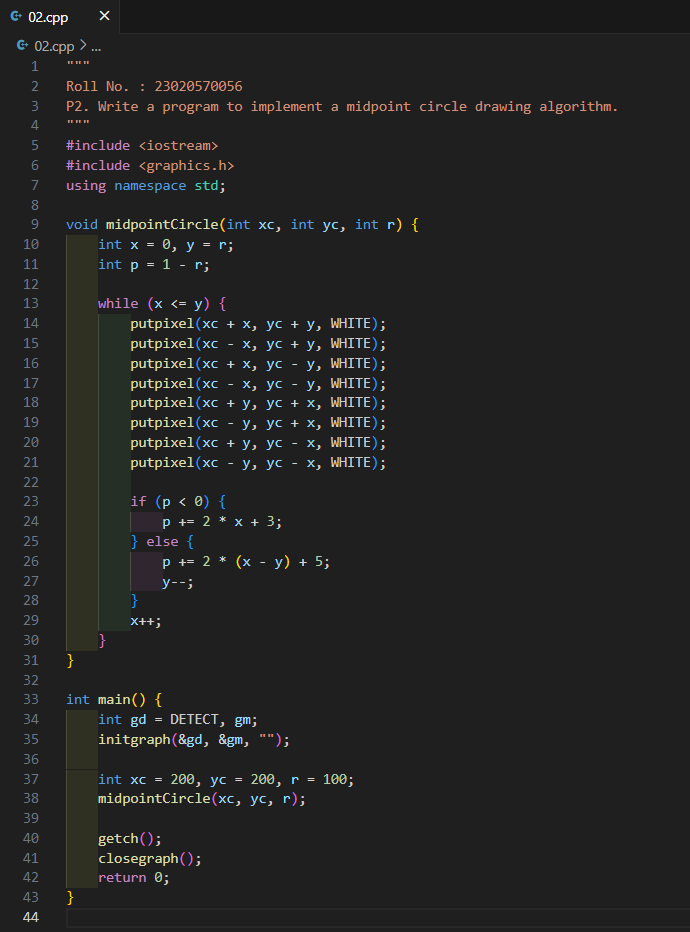


**Output:**

A white line in a black background

Description automatically generated

**Q2. Write a program to implement a midpoint circle drawing algorithm.**

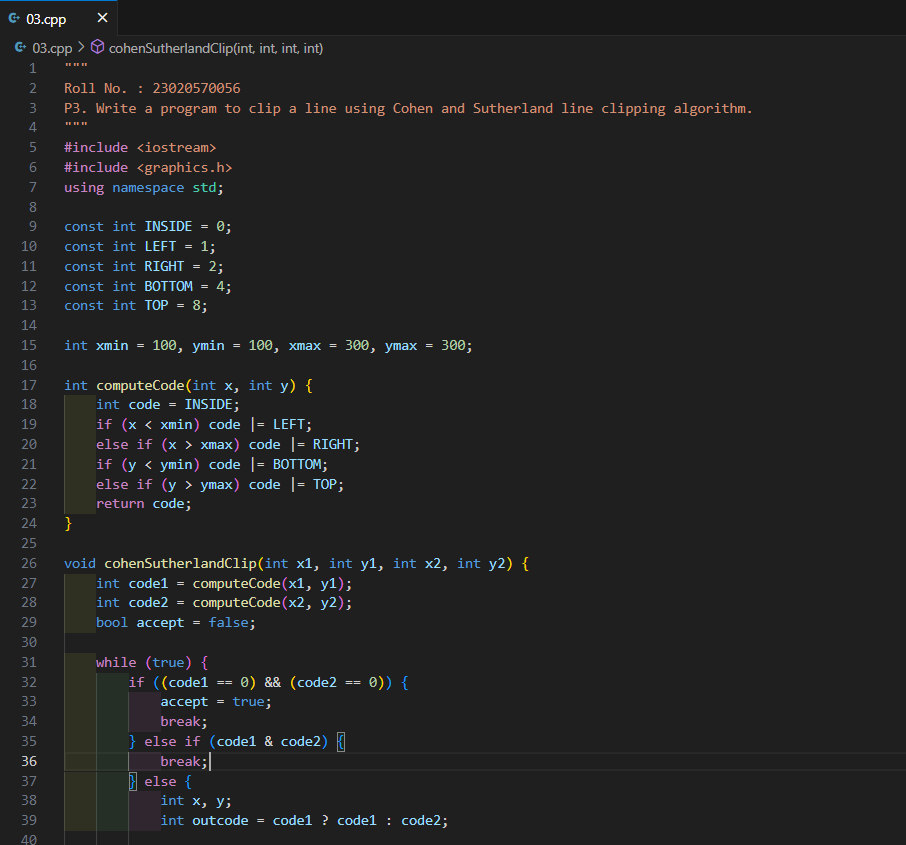
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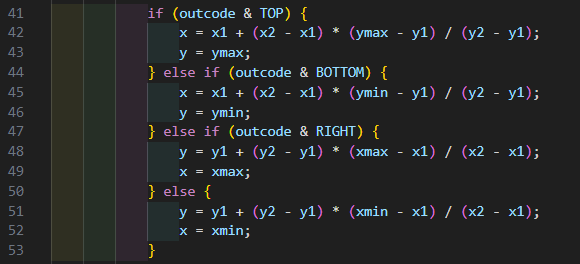
**Output:**

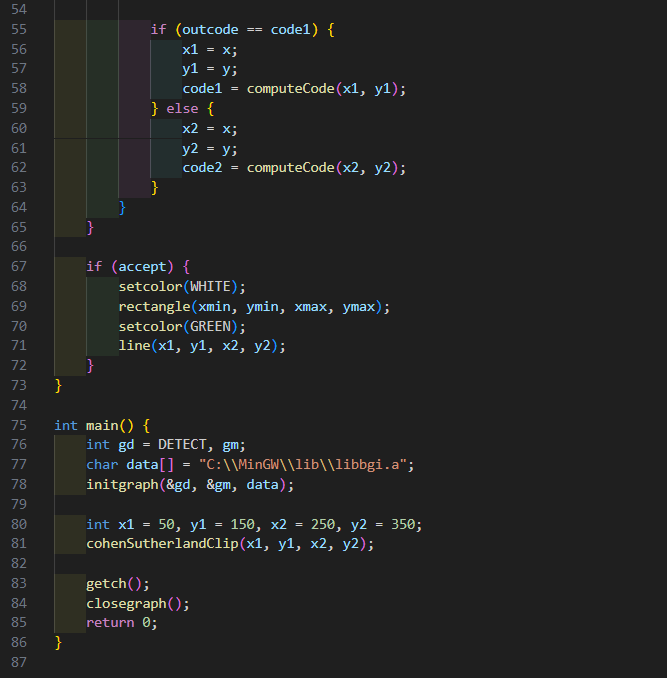
A screenshot of a computer

Description automatically generated

**Q3. Write a program to clip a line using Cohen and Sutherland line clipping algorithm.**

****

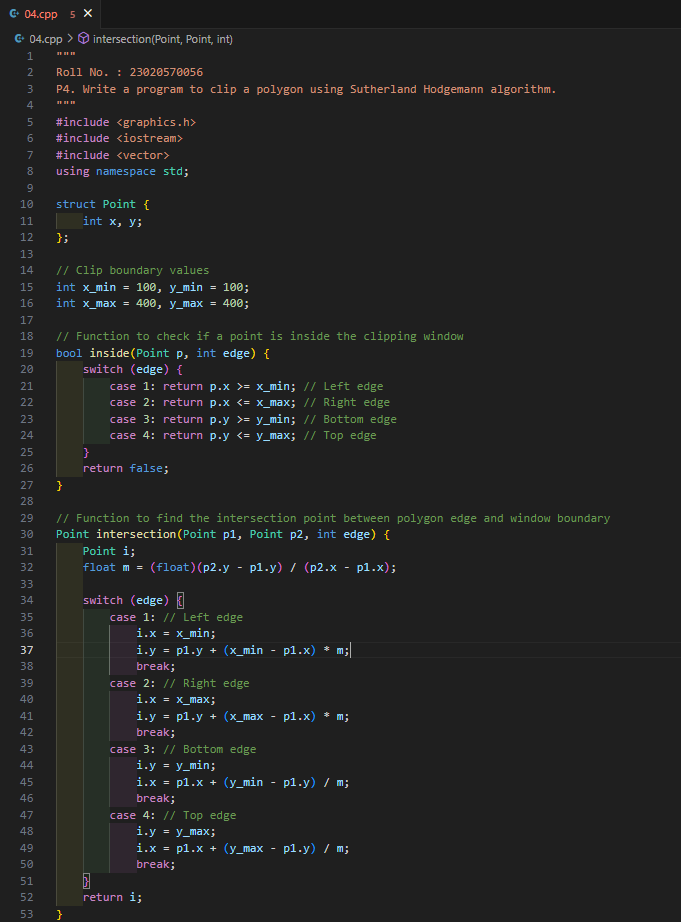
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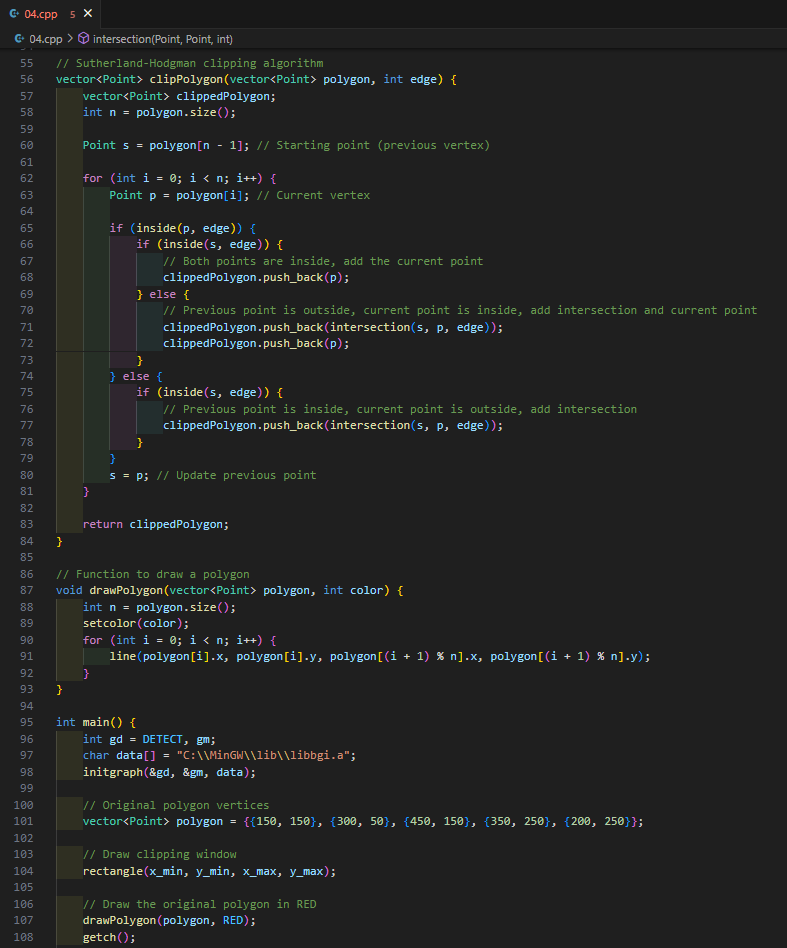
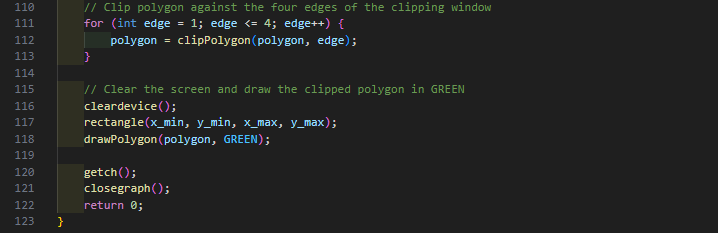
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**Output:**

A screenshot of a computer

Description automatically generated

**Q4. Write a program to clip a polygon using Sutherland Hodgemann algorithm. **

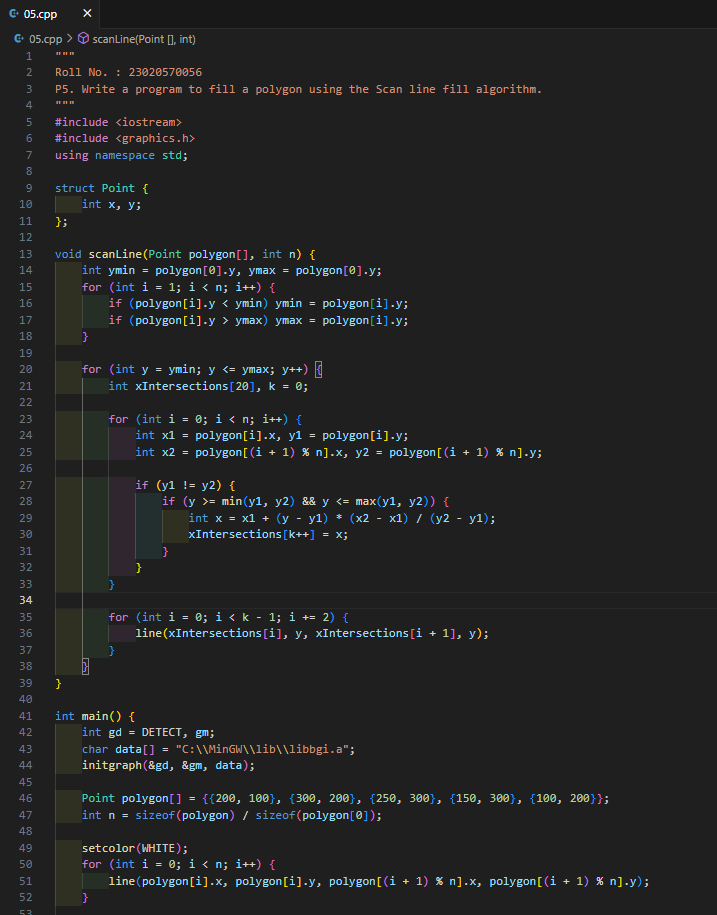
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**Output:**

A screenshot of a computer

Description automatically generated

**Q5. Write a program to fill a polygon using the Scan line fill algorithm.**

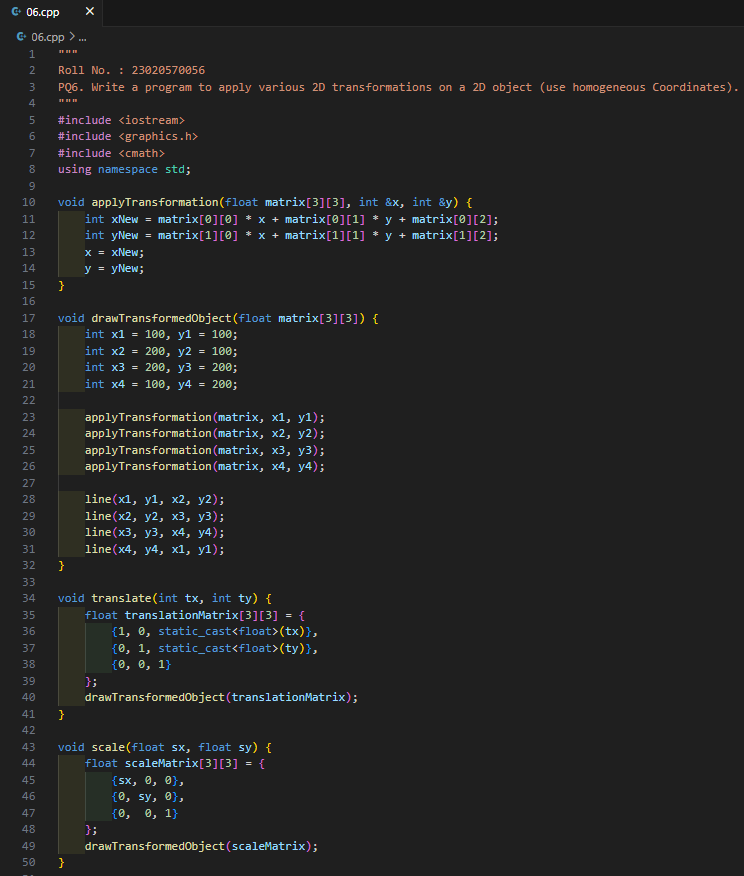
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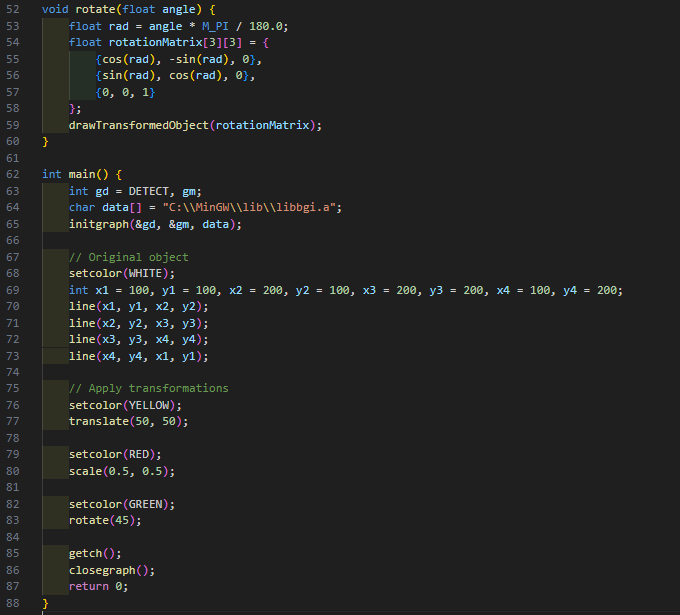
**Output:**

A white hexagon on a black background

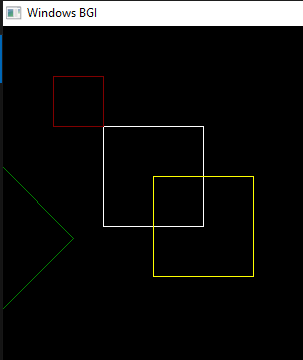
Description automatically generated

**Q6. Write a program to apply various 2D transformations on a 2D object (use homogeneous Coordinates).**

****

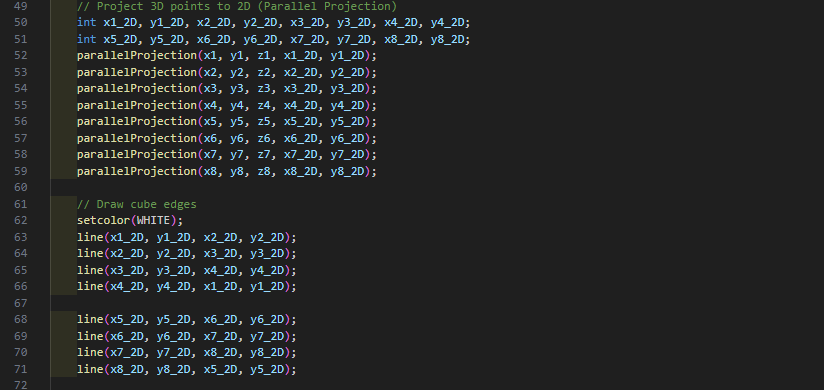
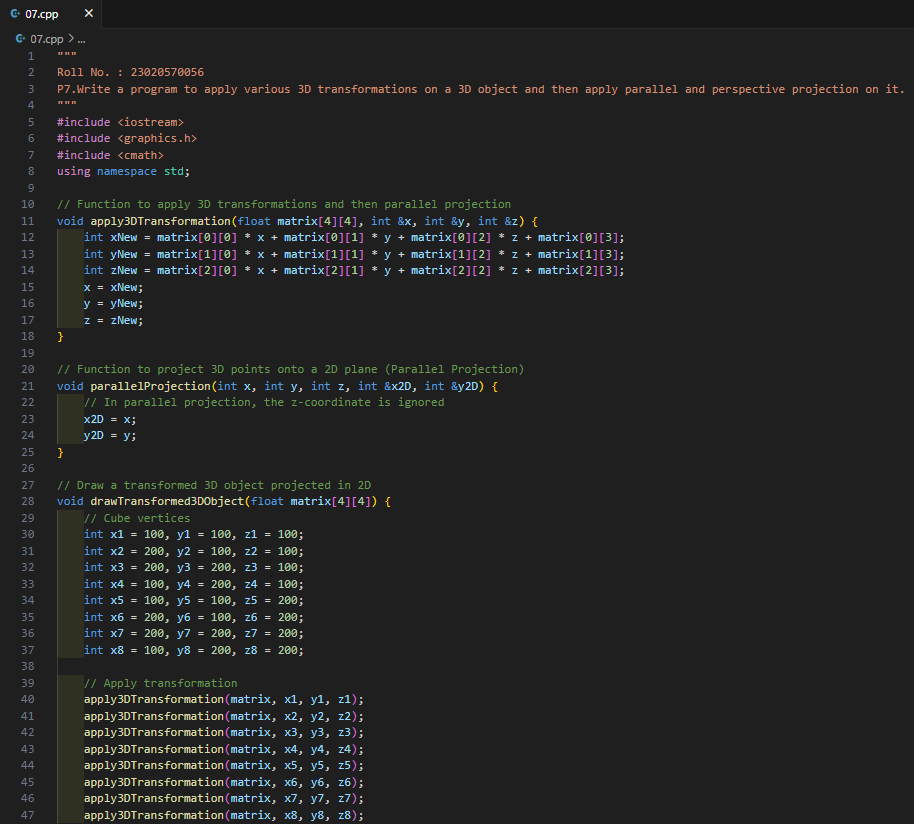
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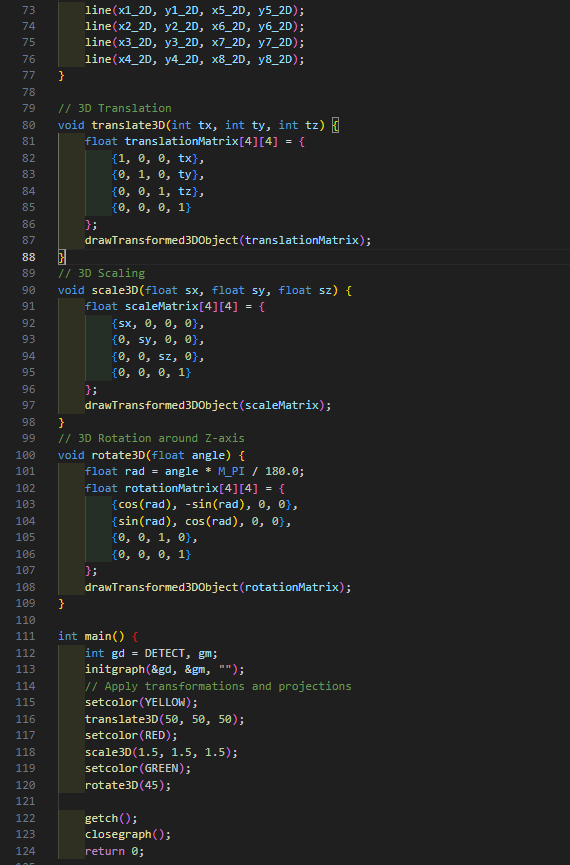
**Output:**



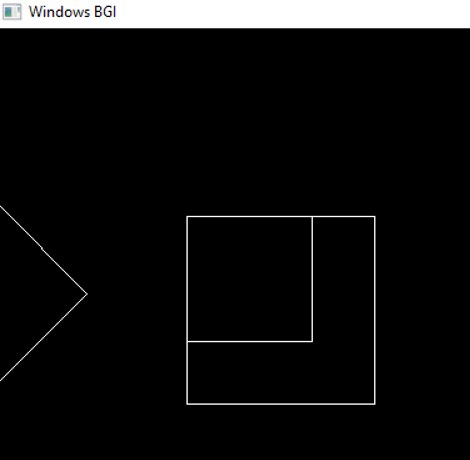
**Q7.Write a program to apply various 3D transformations on a 3D object and then apply parallel and perspective projection on it.**

1. **Parallel Projection**

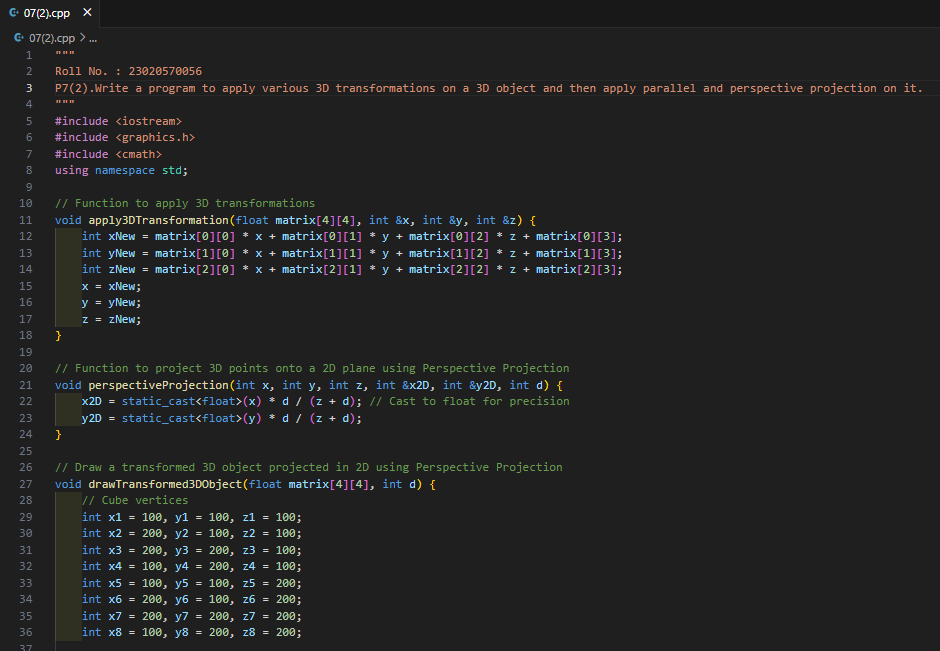
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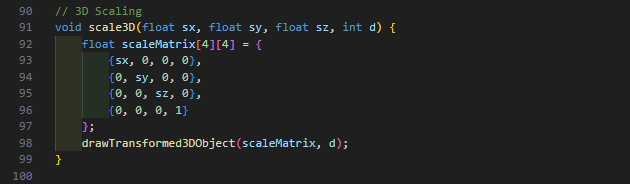
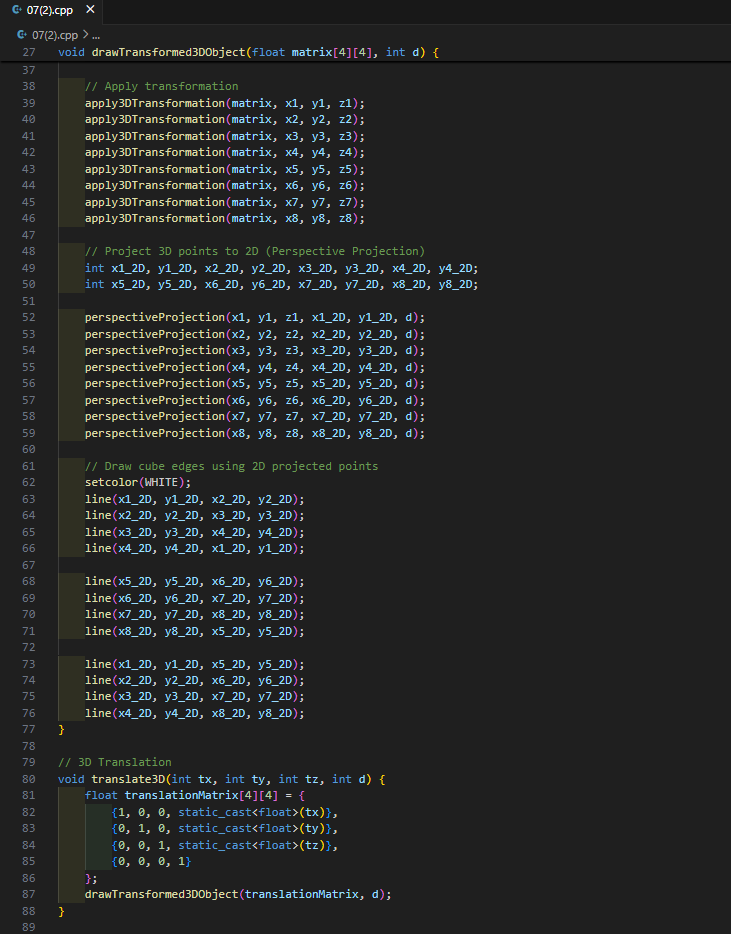
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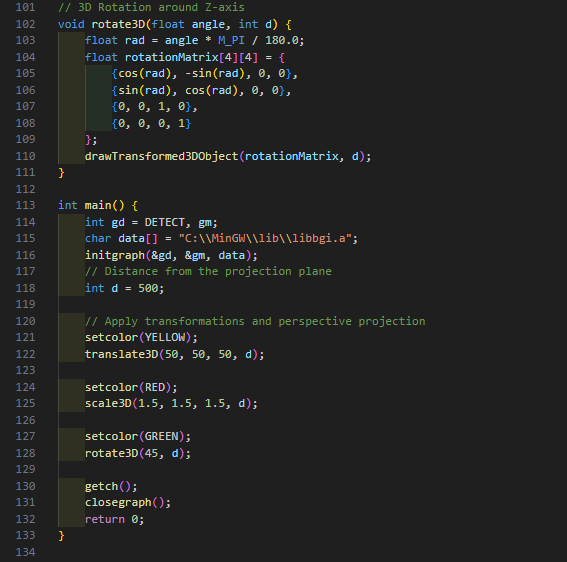
**Output:**

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1. **Perspective Projection**

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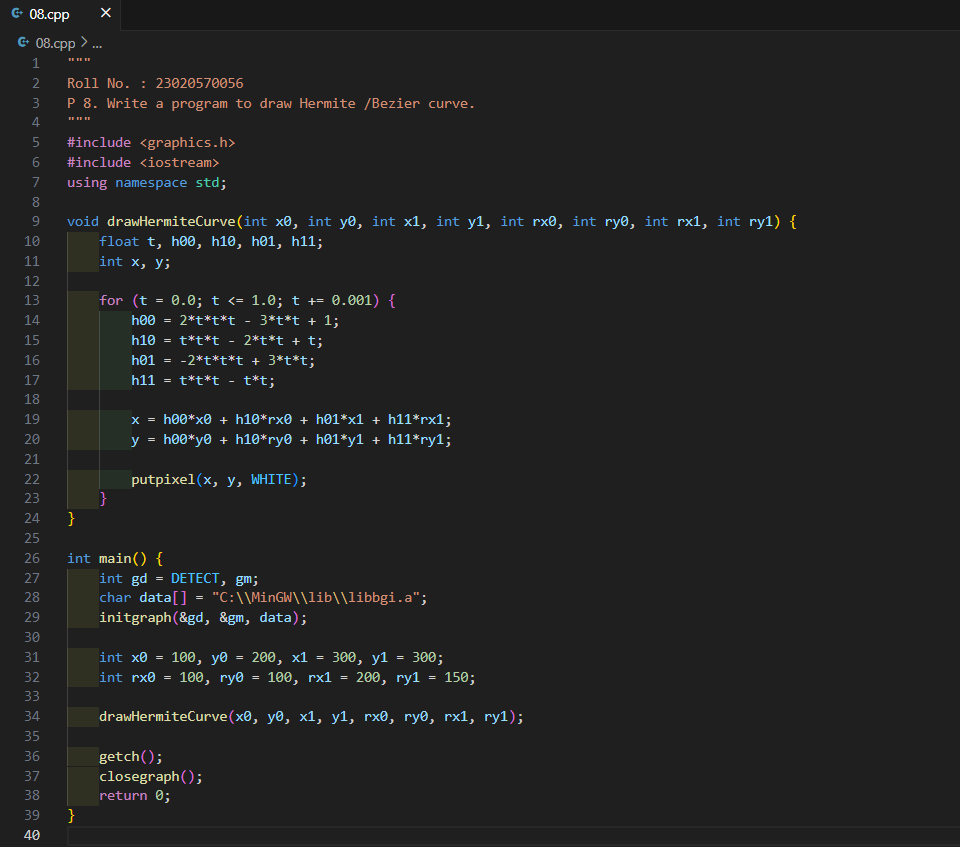
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**Output:**

A screenshot of a computer

Description automatically generated

**Q8. Write a program to draw Hermite /Bezier curve.**

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**Output:**

A screenshot of a computer

Description automatically generated