COMPUTER GRAPHICS FINAL PROJECT

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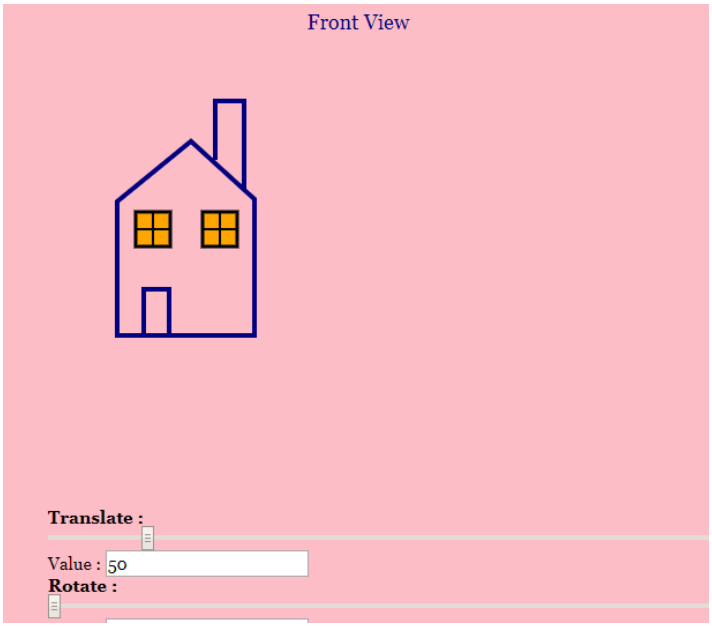
Contents

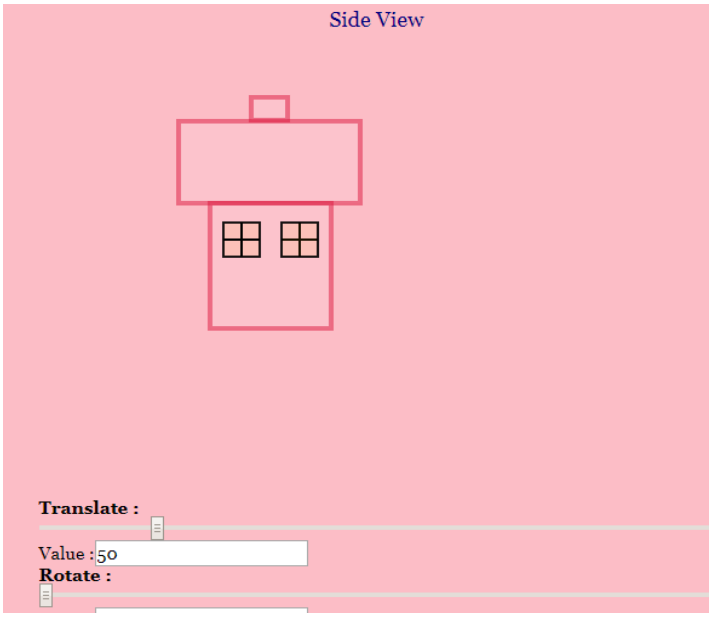
Week 1

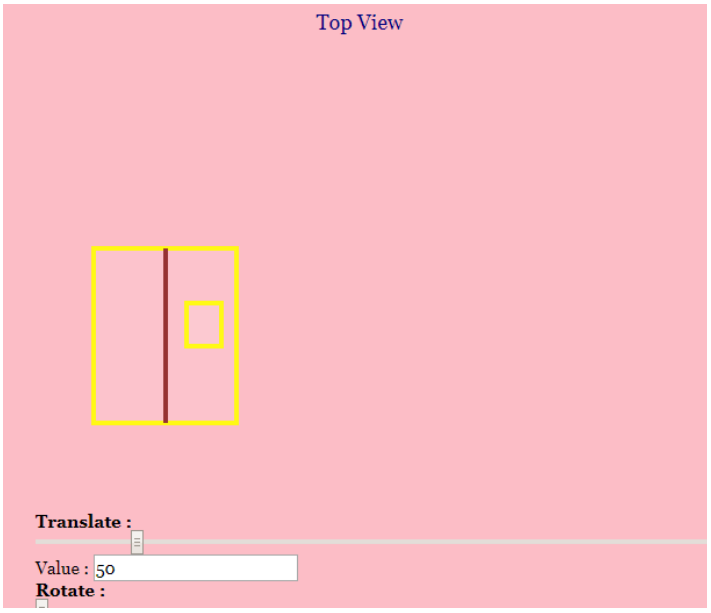
In this part, I implemented different views for an object viz.

- Top View
- Side View
- Top View

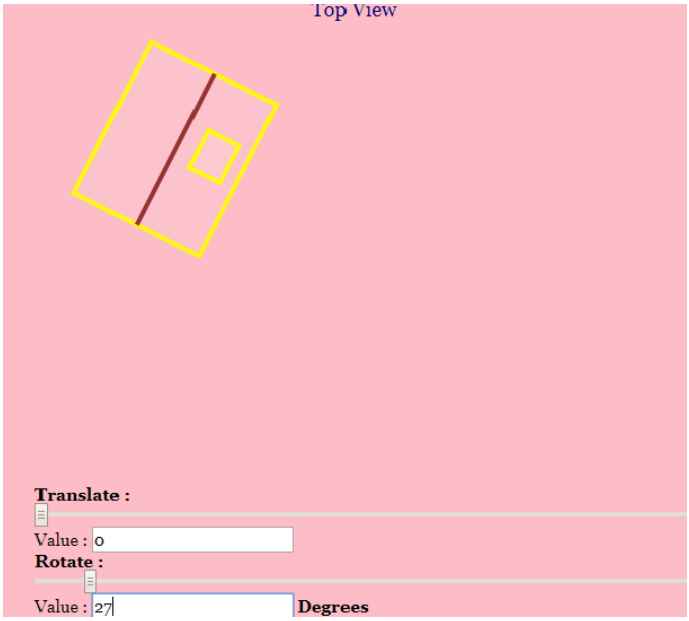
I performed different 2 D transformations like rotation, shear, translation, Scaling. The output is as below :



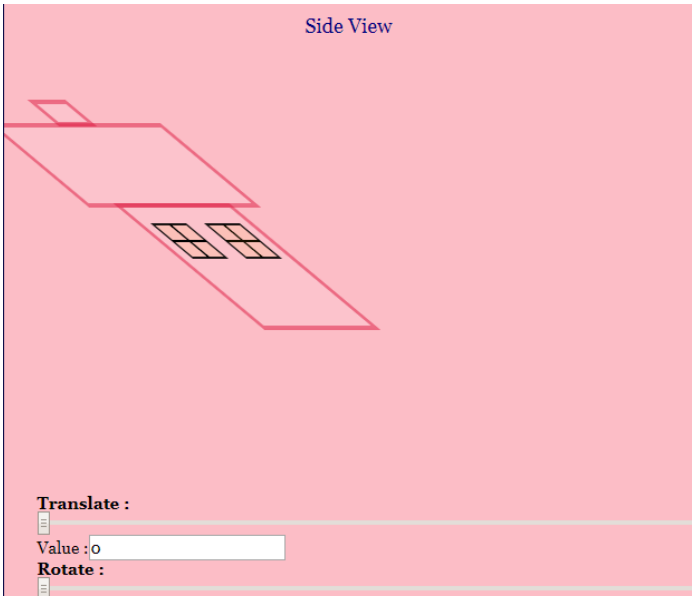




The below output is when the top view was rotated by 27 degrees.



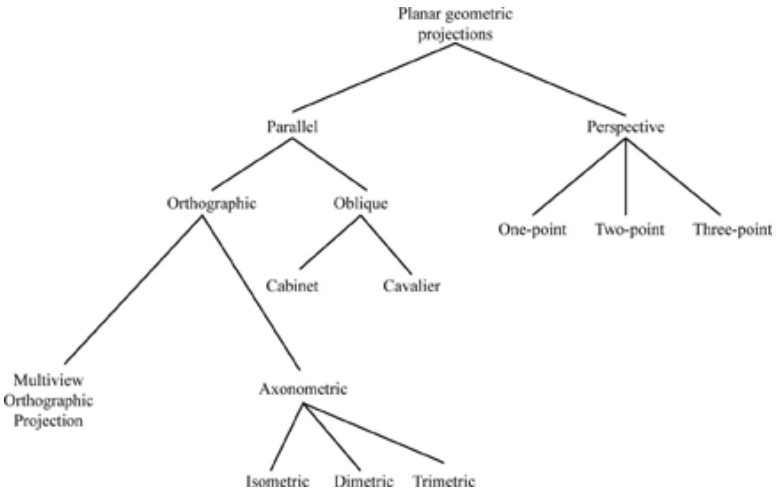
The below output is when the shear was 50 degrees for the side view.



Week 2

In this part, I implemented the below 8 projection types on a cube.

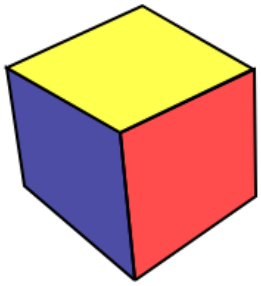
- Top view
- Front View
- Side View
- Isometric Projection
- Dimetric Projection
- Trimetric Projection
- Oblique Projection
- Perspective Projection



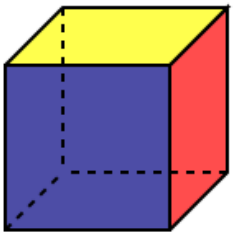
I also a rotating performed transformation on the cube.

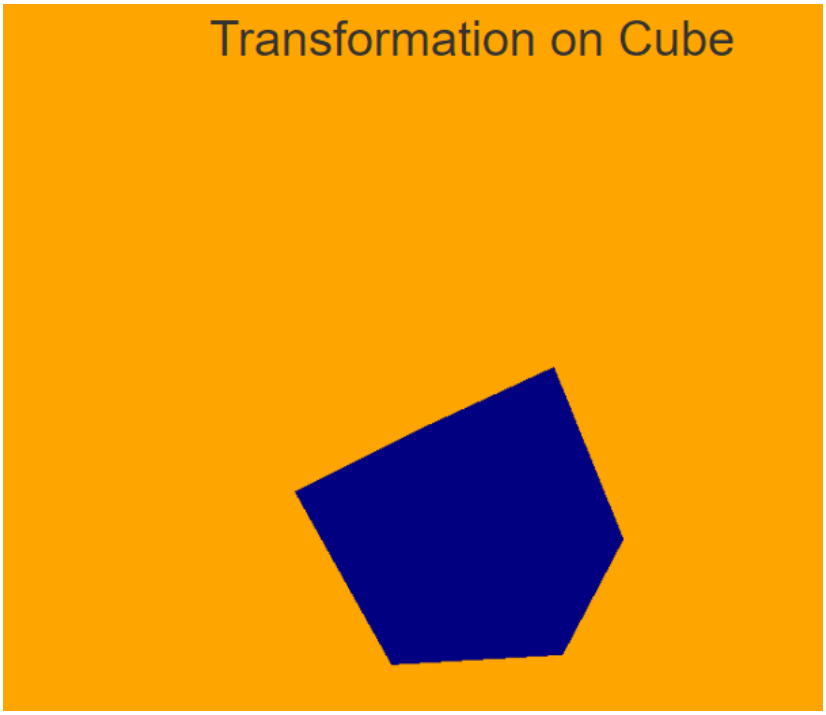
Below are some screenshots of the output :

8.Three Point Projection



5.Oblique Projection II

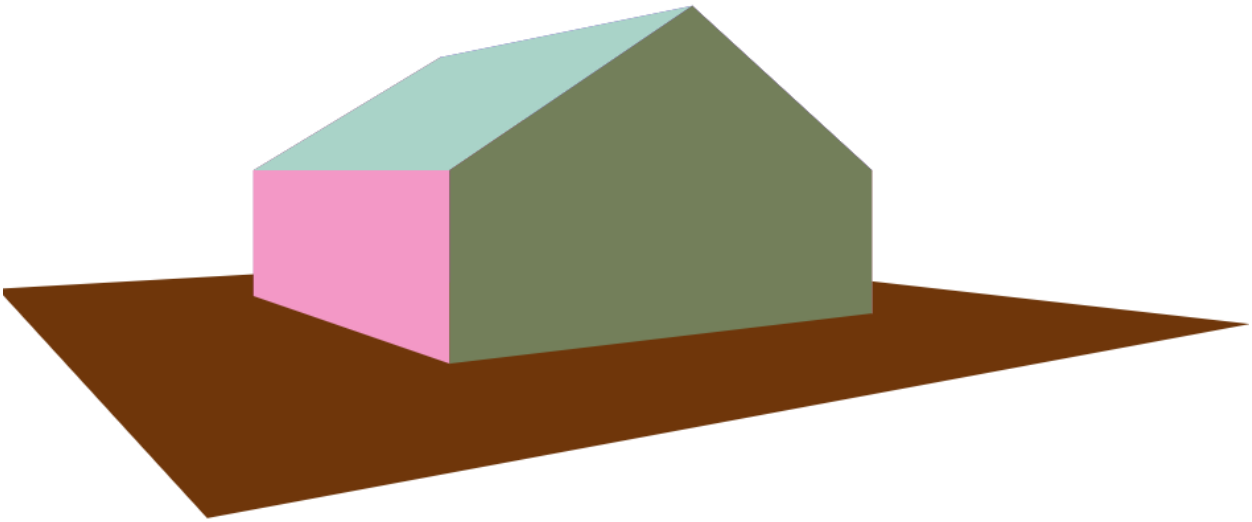


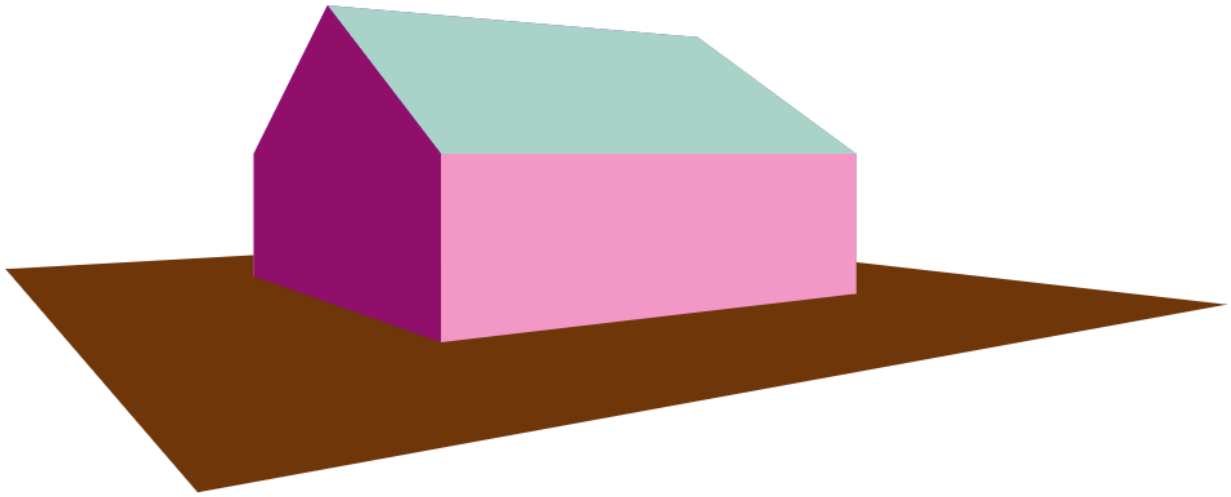

Transformation on Cube

Week 3

In this part, I implemented a 3 D model of house where it can be viewed from different lateral angles.

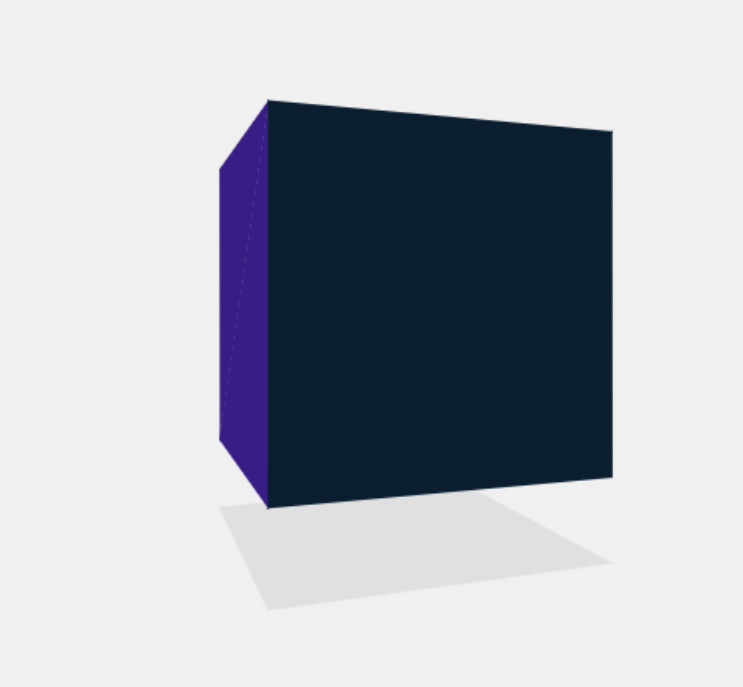
The output is as below :





Week 4

In this week, I tried two features. In the first part, I implemented a controllable rotating cube. I also created a shadow of the cube on the ground. This is an extension of my previous submission where the house model was rotated only one side at a time. In week 2, I was able to rotate the cube, but the user had no control over the motion.



In part two, I implemented random cubes which could be targeted. When a user clicks on a particular cube, it moves in random direction for a certain distance.

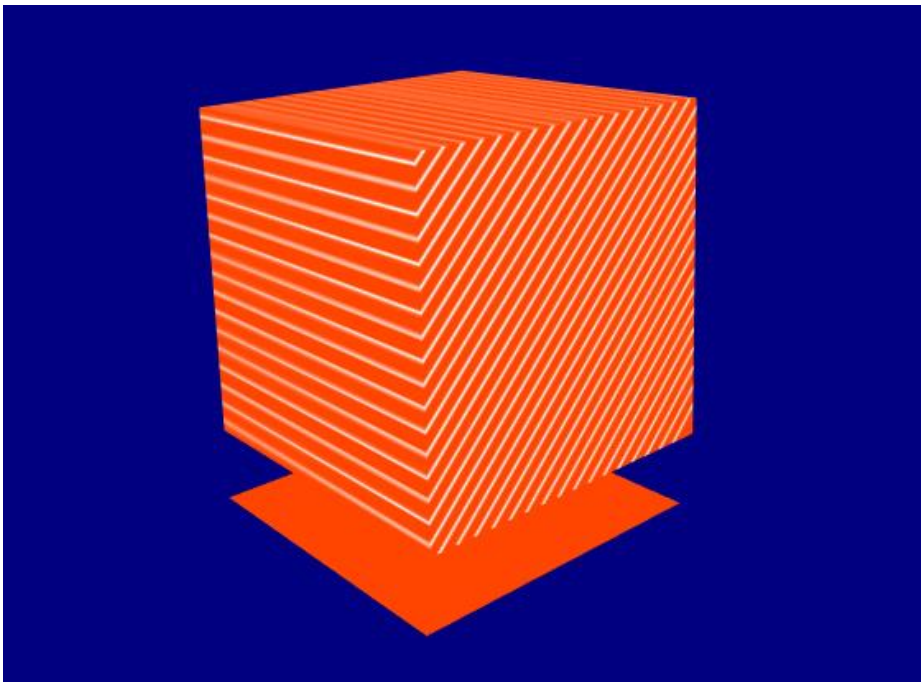
Week 5

In this week, I implemented a 3-dimensional house model where the interiors of the house can be seen. I also tried creating some texture by giving an option of changing the season. When the user clicks on the screen, the interior of the top floor and the ground floor can be seen. This is an extension of my previous submission, where I implemented clickable objects and shadows. Here, the shadow of the house can be seen on the ground when it expands.

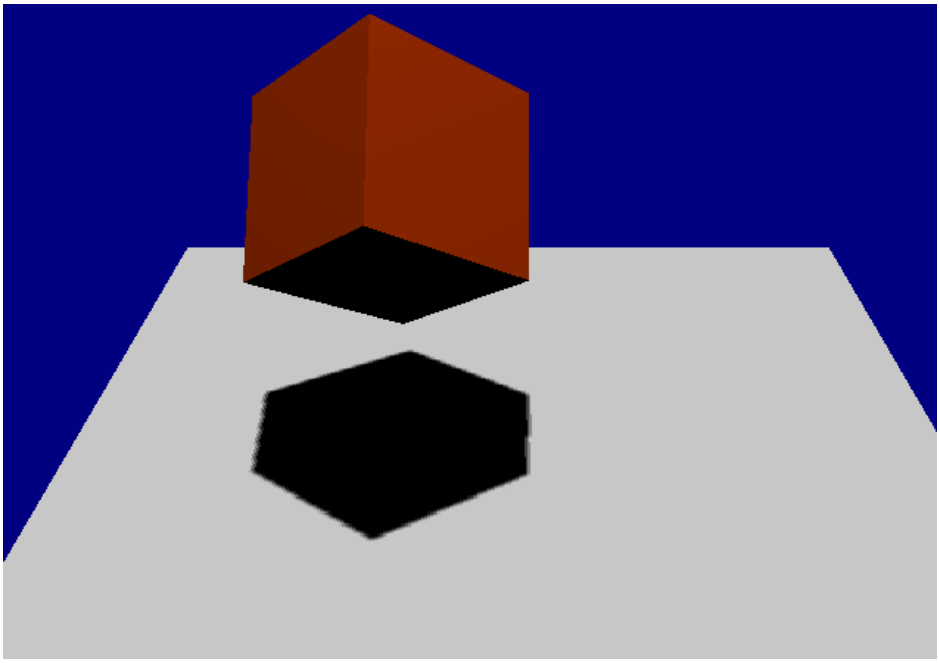
Change of season :

Additional Features

I experimented with a dynamic texture on a cube. However, I was not successful in demonstrating the same on the house model.



I also tried to get the shadow of a continuously rotating cube but I was not able to rotate the entire house successfully. The cube here is moving in a 3_dimentional space and not just around a single point like the previous submissions.



References

https://threejs.org/

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https://www.w3schools.com/

https://www.chegg.com/

https://github.com/matthiasak/