

# Computer Graphics

## Final Project Report: 3d Objects and Implementations

Name: Tejaswini Gaddam

ID: 01672822

## Table of Contents

---

Introduction.....	1
Implementation .....	1
Output.....	1
References.....	8

## **Introduction:**

The project's aim is to implement the transformations and projections of the 3d objects practically. In this project the features I would implement are Creating and storing of a 3d object, Displaying the 2d elevations of the object, transforming of the object that is Translating, Scaling, Rotating and Shearing of the 3d object. Some other features are developing different views of the 3d object, generating projections of the object, editing, or changing the perspective projection vanishing points (1,2,3), creating texture or bump or environmental mappings for the object. All the features are implemented part by part.

## **Implementation:**

### **Part 1:**

In this part of the project, until now I have created a web portal which shows the progress of the project. Then I have selected 3 generic objects house, sliding box and pile of boxes. Created a svg to draw the 2d views of the object. I have developed front, top and side views of the object. Then storing these values, I have developed the 3d model of the object.

I have included all the styling for the webpage in style.css file. I have created the buttons for each object to direct for each object created. And each page has the links for the 3d views.

### **Part 2:**

In this week, I have implemented the 3d transformations on the object. I have created text boxes fields to enter the values for the change of translation, rotation, scaling and shearing. When the value is entered in the textbox for the Translation, I created function which takes the value from textbox and moves the object to that location.

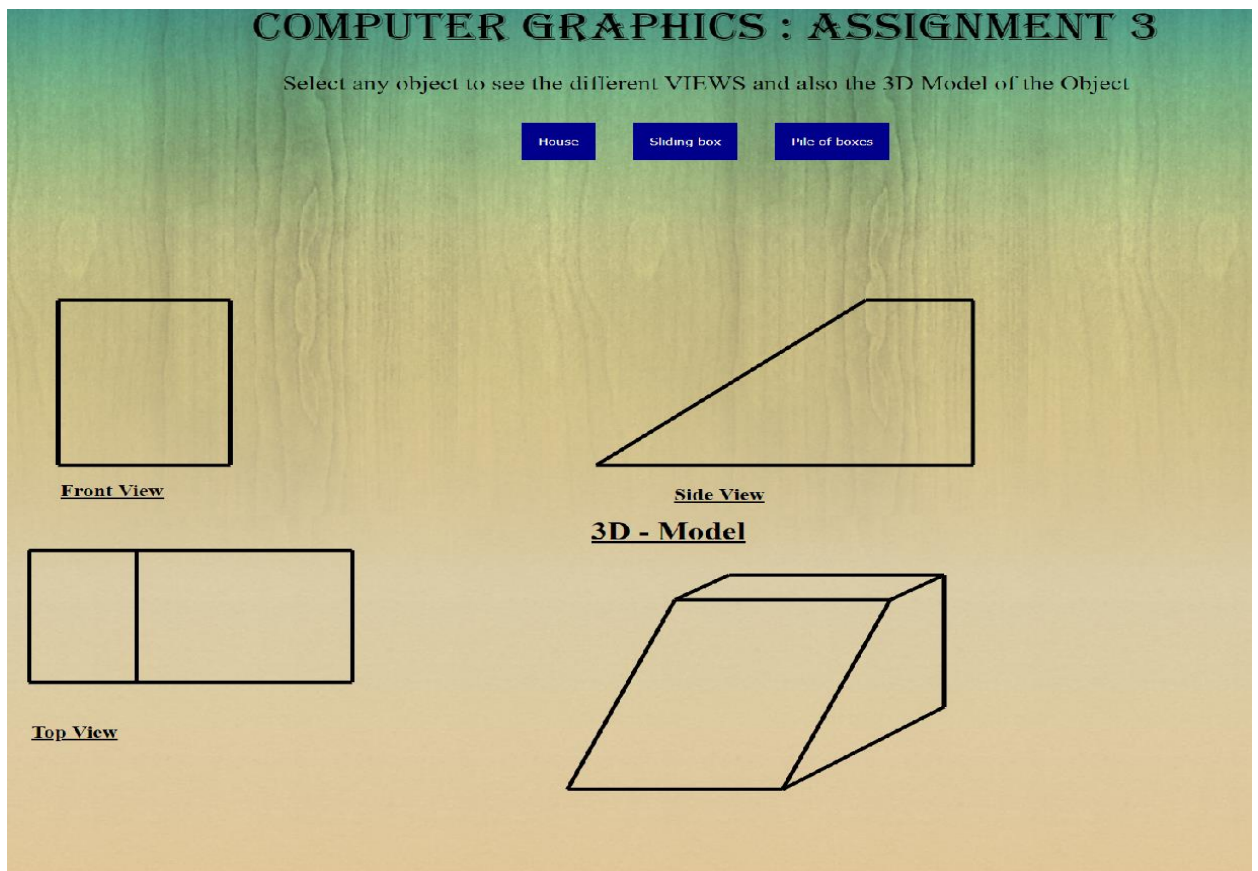
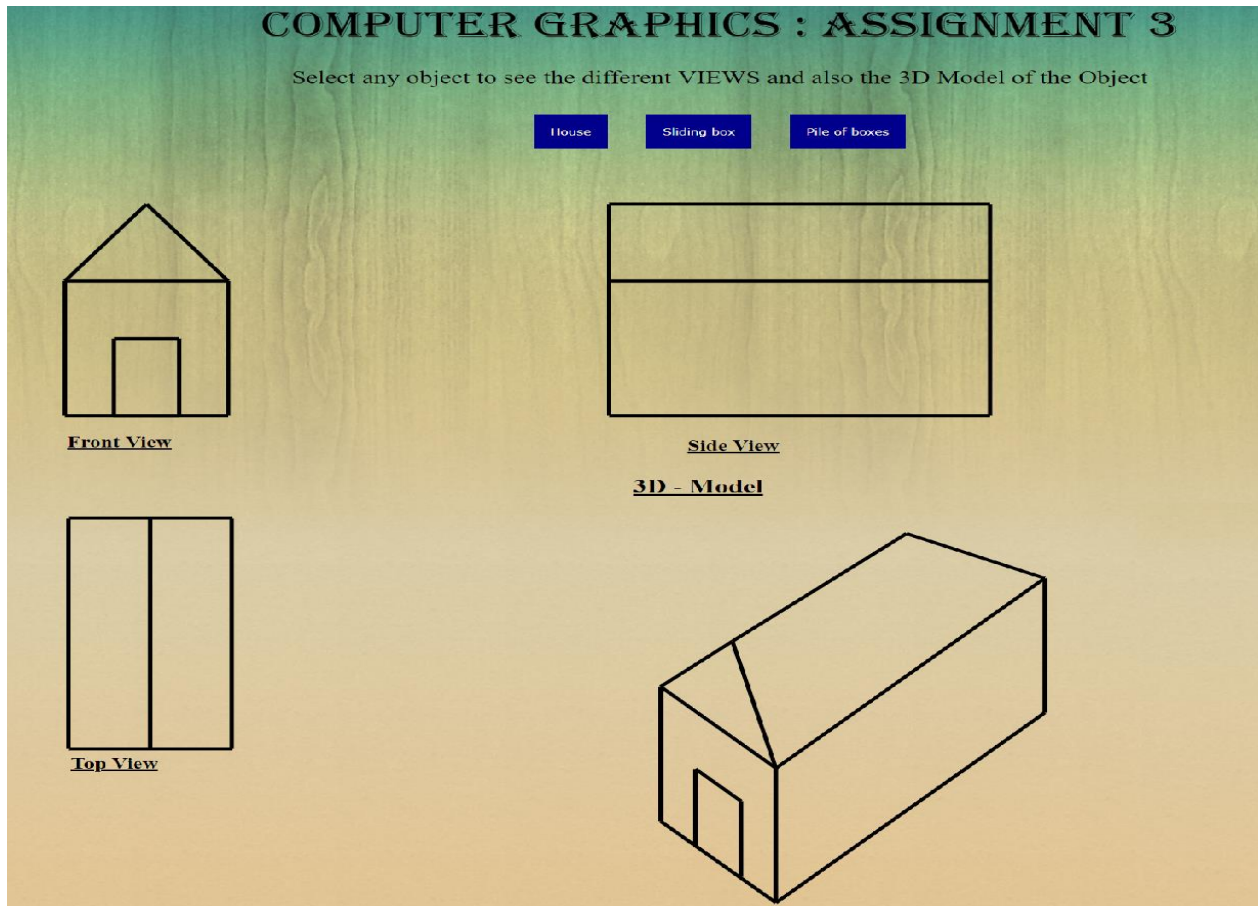
The same was implemented for the rotation, scaling and shearing. We enter the values in the textboxes and the values entered will be taken by the functions in console and they rotate the object with the angle entered, scale the object with the scaling factor and shear the object with the angle.

These 3d transformations are performed on all the objects created in the first part of the object.

## **Output:**

Here are some of the output screens available, how will the 3d model and views look like. The 3d Transformations of a object are also here.

Week-1:



# COMPUTER GRAPHICS : ASSIGNMENT 3

Select any object to see the different VIEWS and also the 3D Model of the Object

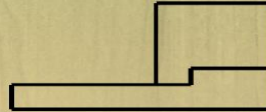
House

Sliding box

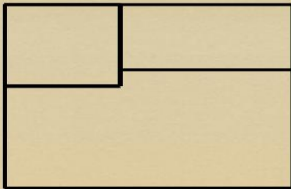
Pile of boxes



Front View

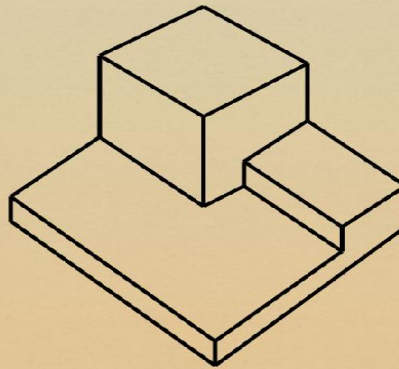


Side View



Top View

## 3d - Model



Week-2: These are the outputs for one of the objects. The original image is below, and the other transformations are below.

# COMPUTER GRAPHICS : FINAL PROJECT

3D Transformations on the Object

House

Sliding box

Pile of boxes

2D views

Translate : 100

Enter as 100,200,300....

Rotate : 0

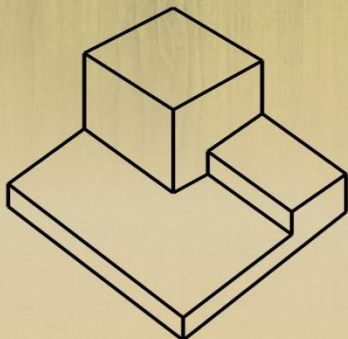
Enter angle between 0 to 360 degrees

Scale : 1

Enter as increase intervals of 0.05 eg: 1,1.05,1.10...

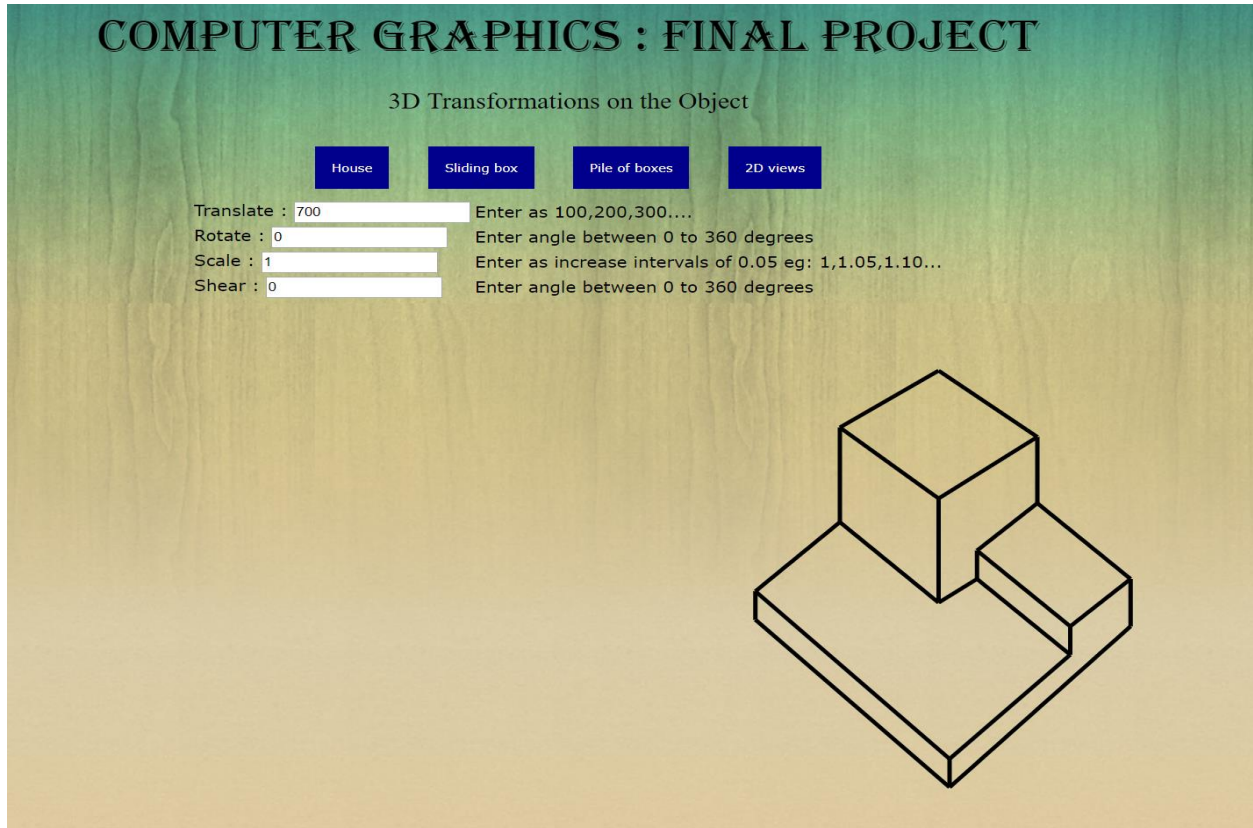
Shear : 0

Enter angle between 0 to 360 degrees

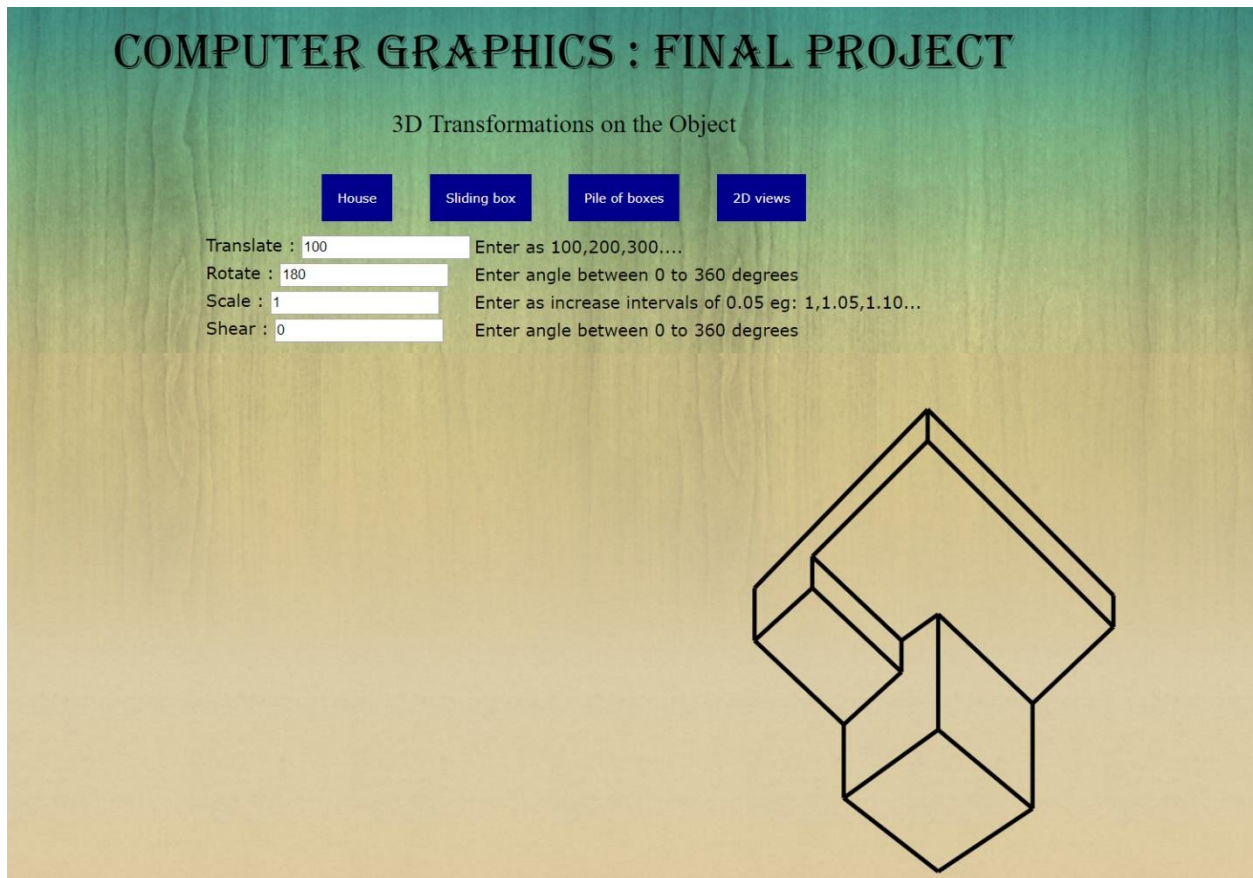




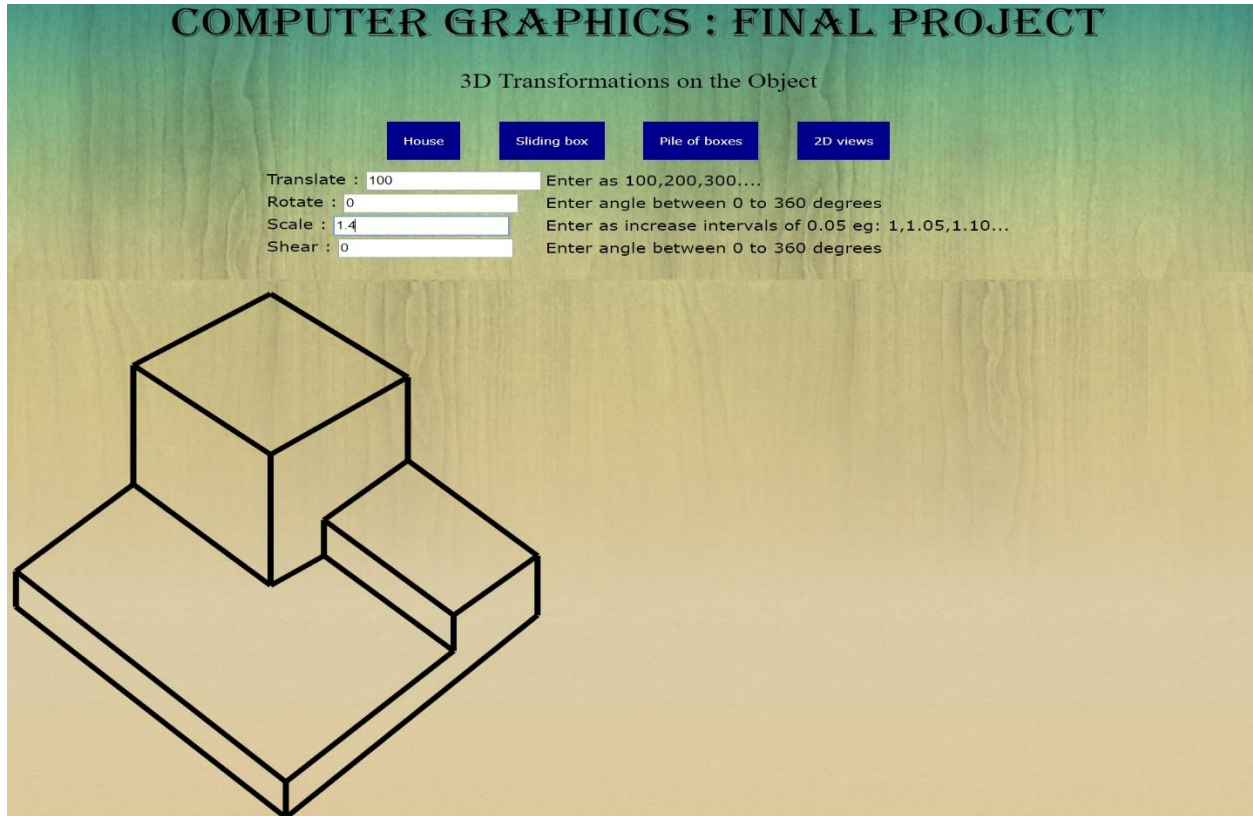
Translation:



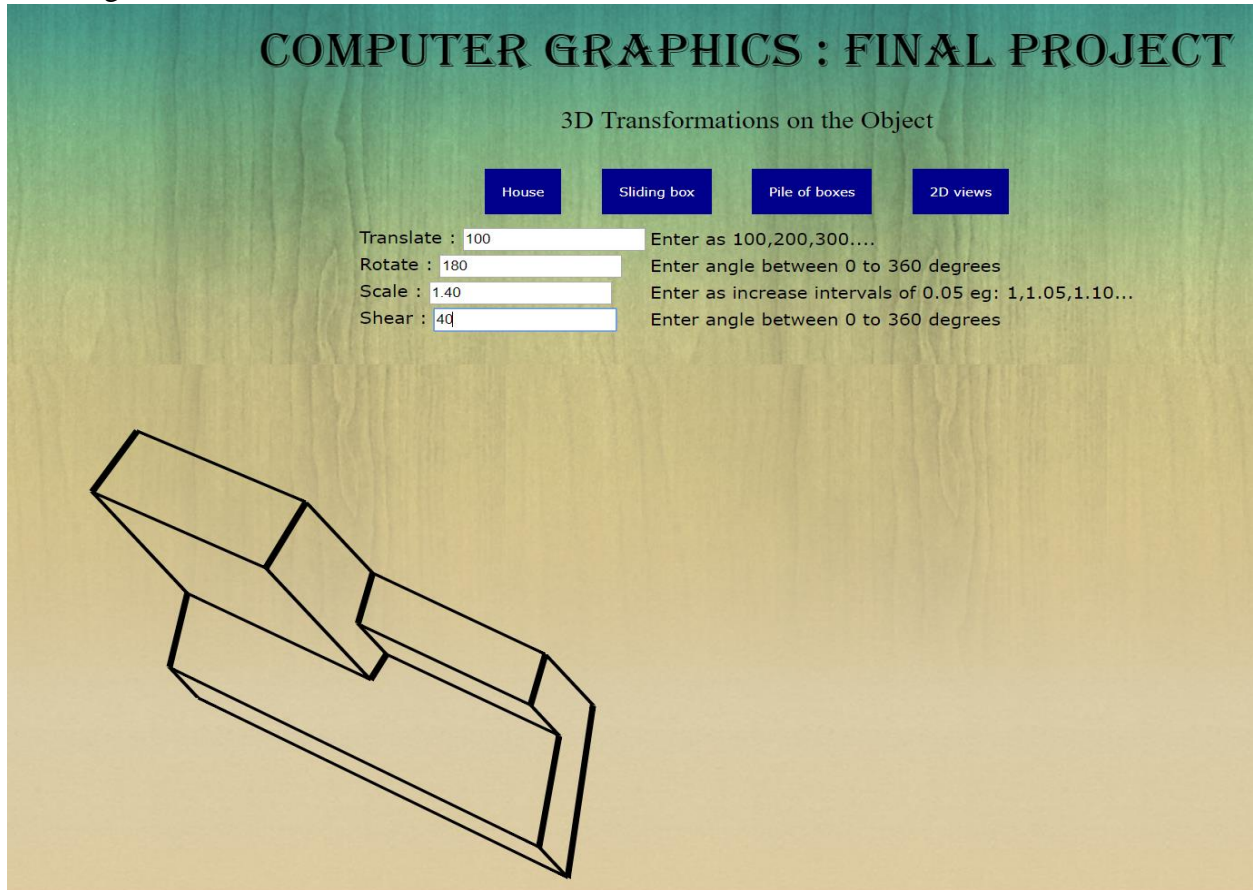
Rotation:



Scaling:



Shearing:



## **REFERENCES:**

1. <https://www.w3schools.com/html/>
2. <http://stackoverflow.com/>