

Laporan Tugas 1 IF3260 Grafika Komputer
2D Web Based CAD (Computer-Aided Design)



Disusun oleh:

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Deskripsi Program

Program dibuat dalam bahasa HTML, CSS, dan JS murni. Program merupakan sebuah implementasi fungsi-fungsi primitif dari WebGL 2D yang mencakupi pembuatan **model** 2D seperti garis, persegi, persegi panjang, dan polygon yang diimplementasikan dengan menggunakan fitur dasar WebGL.

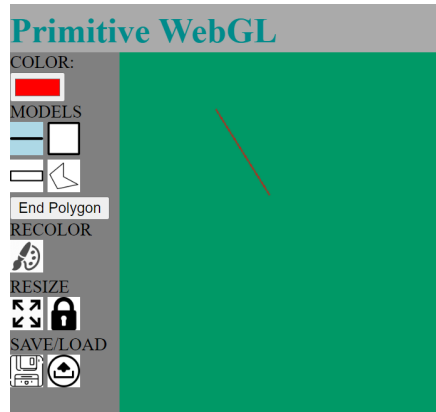
Program juga memiliki fungsi **transformasi** yaitu translasi, dilatasi yang diimplementasikan menggunakan WebGL serta matematika, Aljabar, dan Geometri dasar.

Program memiliki fitur perubahan warna, baik dalam perubahan warna object yang akan dibuat, serta object yang sudah dibuat.

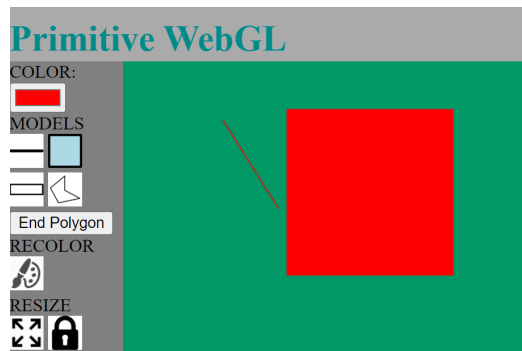
Sebagai fitur tambahan, terdapat fitur untuk melakukan **penggerakan sudut** sebuah object serta melakukan **locking** terhadap object tersebut untuk menjaga kesebangunan, geometri dan orientasi dari object tersebut.

Hasil

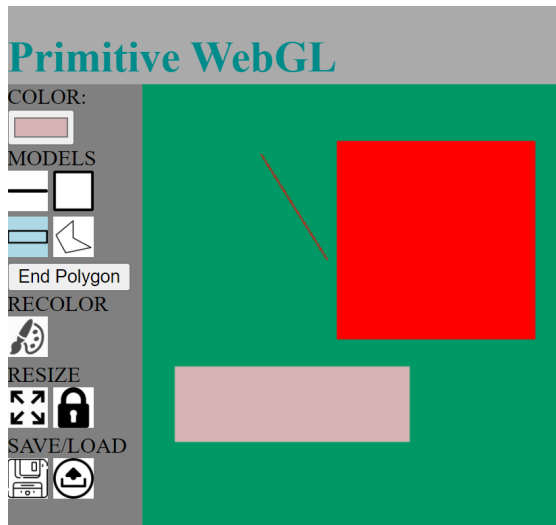
Model: Line



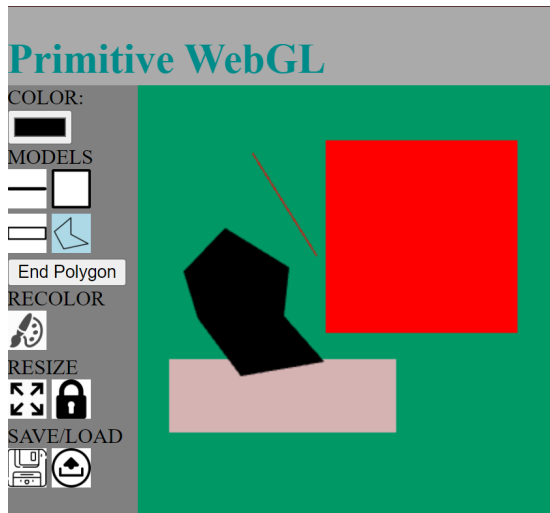
Model: Square



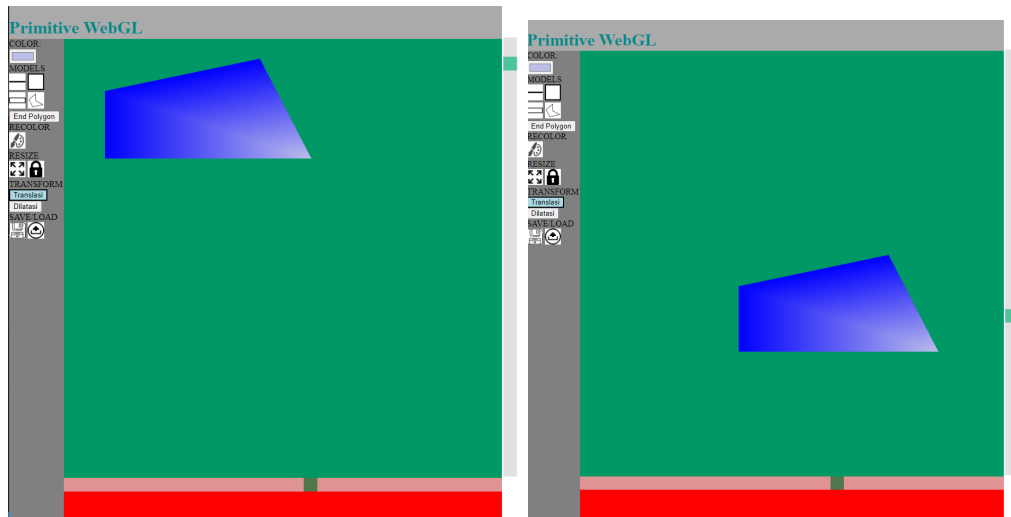
Model: Rectangle



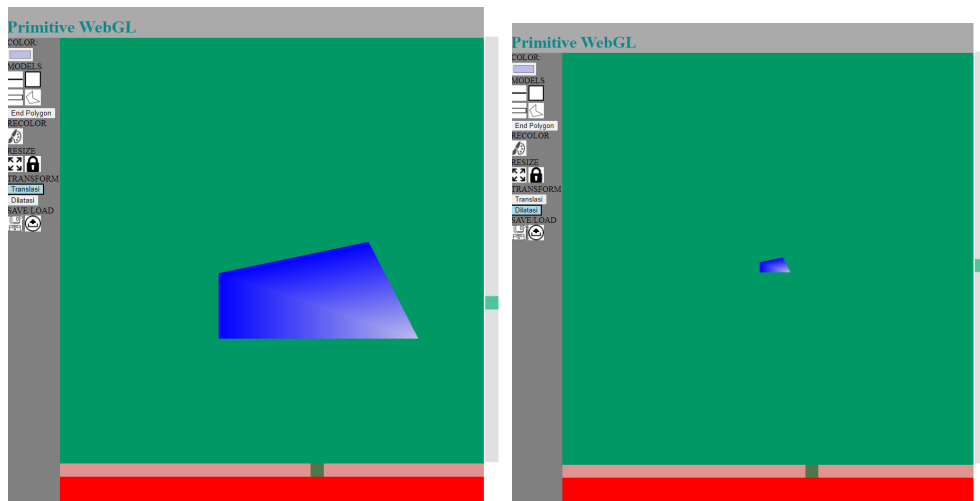
Model: Polygon



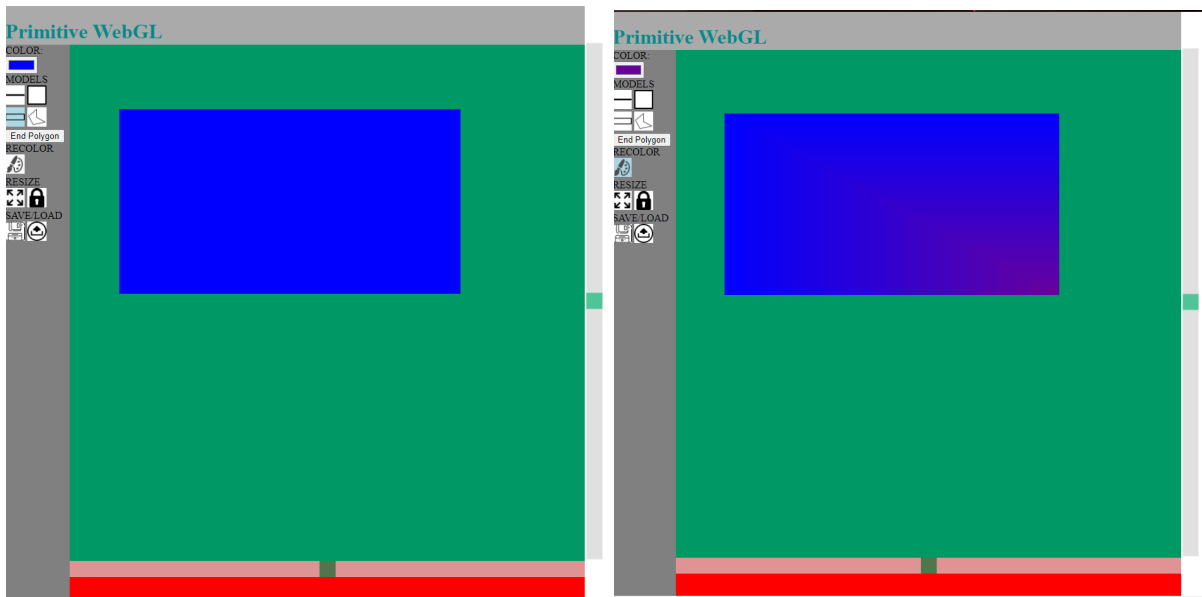
Transformation: Translation



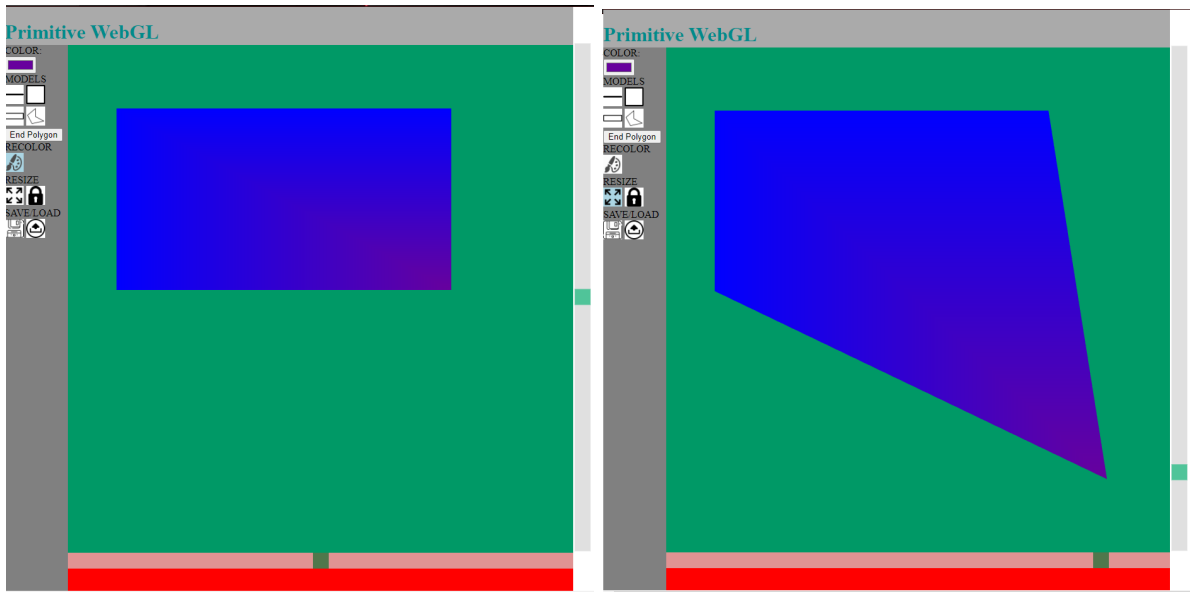
Transformation: Dilatation



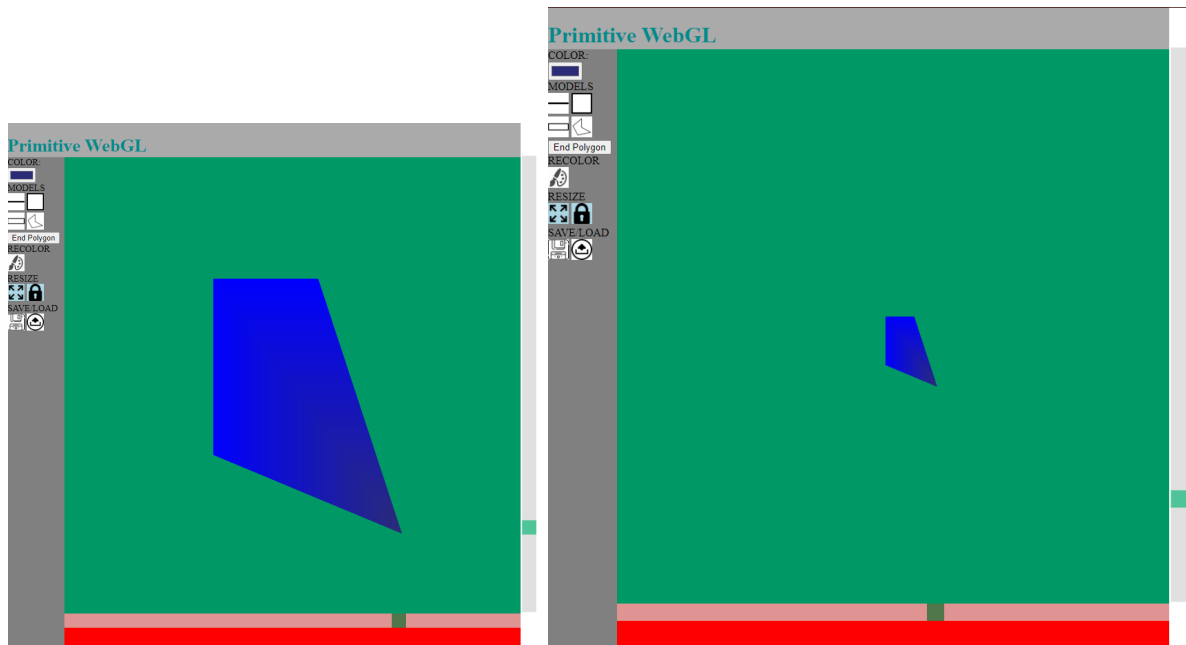
Color Change of a point



Moving a point

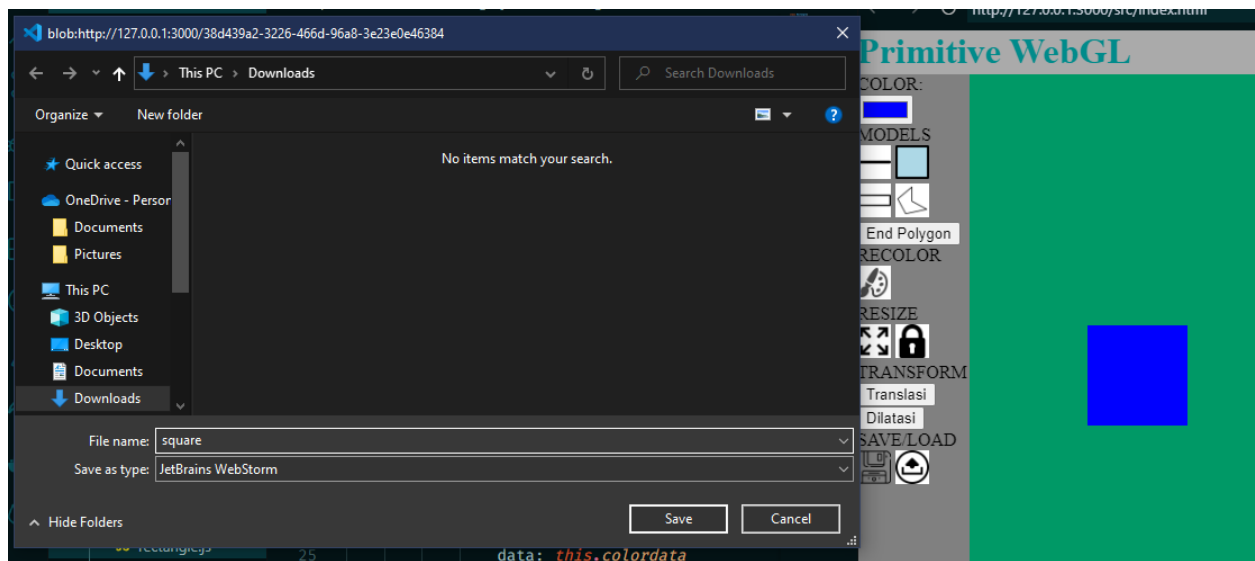


Bonus: Moving a point with locking (preserve congruence and orientation)

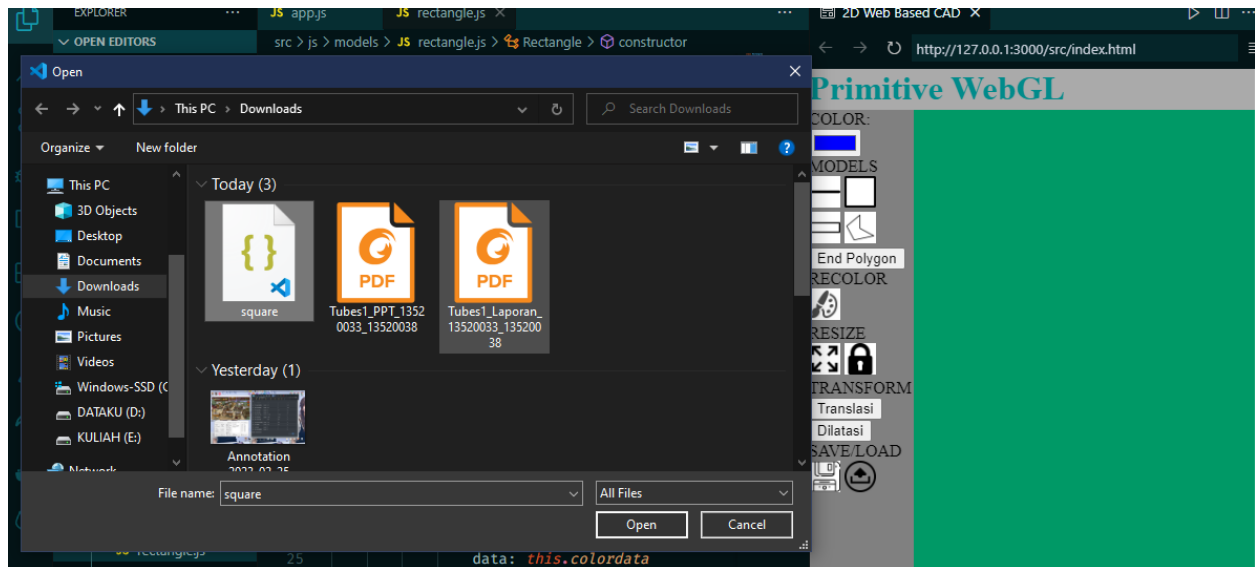


Save and Load

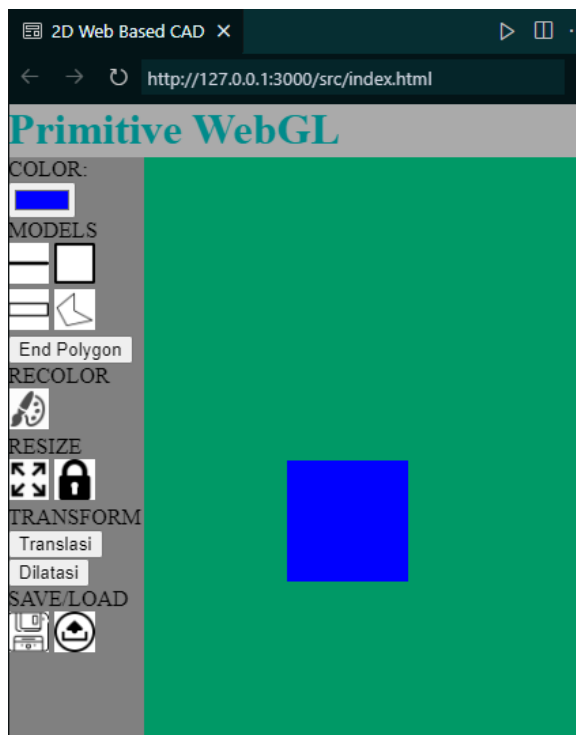
Save



Load



Load result



Manual/Contoh Fungsionalitas

Draw Models (Line, Square, Rectangle)

1. Select the **Model** button
2. Click two point in the canvas
3. Model has been drawn

Draw Models (Polygon)

1. Select the **Model** button
2. Click as many point in the canvas as you'd like
3. Click **End Polygon** button
4. Polygon has been drawn

Change Color of future models

1. Select the **Color Picker**
2. Choose a color
3. Any new models are drawn in that color now

Change Color of a point in an object

1. Select the **Color Picker**
2. Choose a color
3. Select the **Color Changer** button
4. Click close to the points of which you would like to change color
5. Point's color has been changed

Note: Color Changer ONLY changes the newest object, any older objects can no longer be changed

Move a point in an object

1. Select the **Move** Button
2. (Optional) Toggle on the **Lock** button to lock the geometry, symmetry, and angle of the object
3. Click close to the points of which you would like to change move
4. Drag either of the sliders to move the point
5. Point (and entire object if locked) position has been changed

Note: Move ONLY changes the newest object, any older objects can no longer be changed

Transformation: Translation

1. Select the **Translasi** Button
2. Click close to the points of which you would like to move
3. Drag either of the sliders to move the object
4. Object position has been changed

Transformation: Dilatation

1. Select the **Dilatasi** Button
2. Click close to the points of which you would like to move
3. Drag either of the sliders to move the object
4. Object position has been changed

Save

1. Select the **Save** Button
2. Name the object
3. Click save on dialog file

Load

1. Select the **Load** Button
2. Select the file
3. Click open on dialog file