

Assignment 3

CEG4500/CEG6500

Computer Graphics

Assignment 3:

Design and implement a program to display a volumetric image using a cloud of points. Draw an image entry (x,y,z) that has a value larger than or equal to a provided threshold value by a 3-D point at (x,y,z) in the view volume. Let the RGB values of the point be the intensity at entry (x,y,z) . This will display the volumetric image in intensity form. Provide a means to rotate the volumetric object about the x, y, and z axis by desired amounts using three sliders. Also, provide the means to scale up and down the object using another slider.

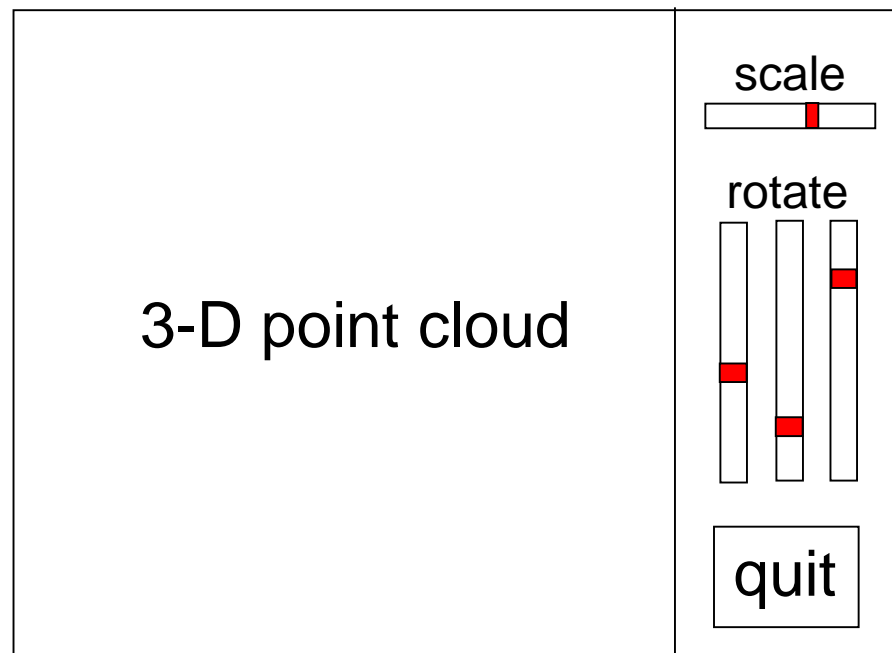
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Suggested interface layout:



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The provided data sets are given as raw volumetric images. Each data point is represented with a single byte (char) and represented on a regular grid. To import the file into your program, simply open the file and read one char after another. This will give you the intensity value for a single point. The points are consecutively stored in the file, i.e. the first row (in x-direction) of the first slice at the beginning of the file followed by the second row of the first slice and so forth until you reach the last row of the last slice. The dimensions for each file; i.e. the width, height, and depth of the volume; is given on the course web page where you downloaded the data files.