This program implements a roller coaster construction and first person perspective ride. The program takes as input a spline (.sp) file and renders a 3d spline using the catmull rom interpolation method. In addition to the spline file, three other texture files are used to texture map scenery onto the program. In order to begin the first person animation press the “1” key, and the “2” key to pause.

Extra credit features:

1. Texture mapped steel roller coaster
2. Double rail and cross bar
3. Texture mapped sky dome

This program implements a height map transformation. The program takes in a

2-dimensional jpeg image as input, and produces a 3d representation of that

image. The image is set on a z by x plane, and the height (y) is determined by

the grayscale color of each pixel in the original jpeg.

This program allows for several user enabled functions:

To rotate the height map: click and drag

To scale the height map: hold shift, click, and drag

To translate(move) the height map: hold control, click, and drag

To manipulate the rendering style:

press (2) to render by triangles

press (3) to render by points

press (4) to render by lines

To take a screenshot, press 1.

The height map’s color is a gradient with an RGB value proportional to the x, y,

and z coordinates.