A WORLD MADE OF DRAWINGS

In the children book Harold and the Purple Crayon a boy explores this world by walking through it. This is a virtual environment allowing user to explore and create a virtual world around them the problem starts when we want to make an environment and look at it from different viewpoints and move around it.

The previous researches shows two problem 1) geometric 2) image based. In geometric approach the system creates geometric description of 3D scene. From the 2D input the system tries to recreate a geometric description of the scene, new rendering doesn’t have a real base point results in a geometry which is not what it really is.

The image-base approaches redisplay the original input image and it lets user to draw inside a sphere as long as camera is fixed, therefore, user can not view the scene from different view point.

Harold system finds a middle ground, it creates a 3D model of the environment although it is the world filled by drawings not 3D objects but our drawing is drawn in billboards. Billboard is a plane with an image texture mapped onto it that rotates around a point or axis. When the user strokes over billboard Harold project the stork on to the billboard and stores it. To display the billboard Harold renders it. In the Harold world ground is large planner area of the XZ plane and sky is inside of an enormous sphere.

We can change colors by clicking on color toolbar icon; there are also some toolbars for stroke styles width and drawing mode. We can stroke on sky or ground that makes our starting point sky or ground. A bridge is bridging a stroke that starts on one billboard and ends stroke in another billboard; so if we call the starting point “S” and the end point “E.” S.E. creates a vector which helps to maintain the connection between strokes. We have camera in our system to view the drawing the camera can look up to sky or swivels and tilt.

There are some obvious improvements that can be made to Harold, for example adding more rendering systems, or adding more choices to the brush selection. Other improvements could range from adding floe to the river or creating behaviors in 3D interactive environment.