1.0) AIM:

Write a program in VRML for positioning of shapes.

2.0) SCOPE:

- To understand positioning and appearance of shapes.
- To understand transformation

3.0) FACILITIES/ APPARATUS:

i) Software: VRML Browser(Cortona)

4.0) THEORY:

This is a VRML (Virtual Reality Modeling Language) program that defines a 3D scene consisting of a blue cylinder and a red sphere. VRML is a markup language used to describe 3D scenes for the web.

The program begins with specifies the encoding type of the VRML file.

The program defines two nodes, Shape and Transform, which are used to specify the appearance and position of objects in the scene.

The first node, Shape, defines a blue cylinder with a radius of 0.1 and a height of 3.0. The appearance of the cylinder is defined using the Appearance node, which specifies a blue Material with a diffuse color of (0.1, 0.1, 0.9).

The second node, Transform, specifies a translation of (0, 2.5, 0), which moves the pen (the coordinate system used to draw objects in the scene) up by 2.5 units in the y-axis. The children of the Transform node are defined as a single Shape node, which specifies

a red sphere with a radius of 1. The appearance of the sphere is defined in the same way as the cylinder, but with a diffuse color of (1, 0, 0) to produce a red color.

The overall effect of the program is to create a simple 3D scene with a blue cylinder and a red sphere, with the sphere positioned above the cylinder. The program can be rendered in a VRML viewer or integrated into a web page using a VRML plugin.

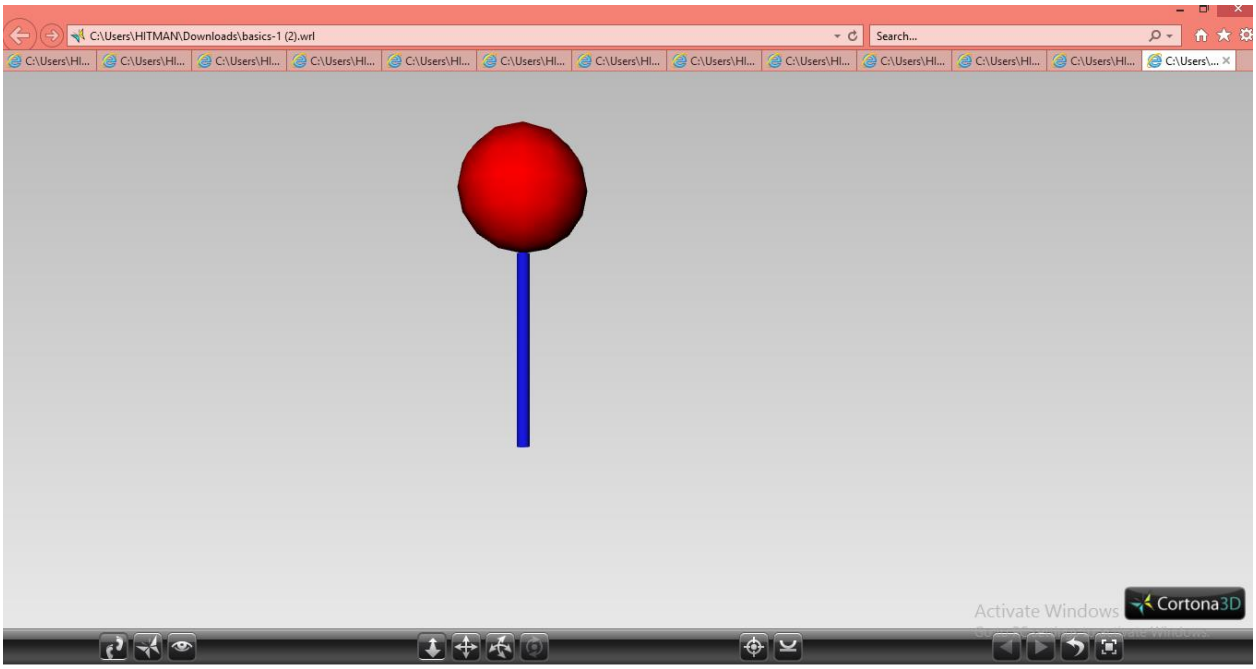
Program

```
#VRML V2.0 utf8


# Draw a blue cylinder - a first node specifying an object
# Watch out: radius and height are floating numbers !
Shape {
  geometry Cylinder {
    radius 0.1
    height 3.0}
  appearance Appearance {
    material Material { diffuseColor 0.1 0.1 0.9 }
  }
}

Transform {
  # Move the pen up - a second node specifying a translation
  # and a red sphere
  translation 0 2.5 0
  children [
    Shape {
      geometry Sphere { radius 1 }
      appearance Appearance {
        material Material { diffuseColor 1 0 0 }
      }
    }
   ]
}
```

Output



5.0) Conclusion:

Executed VRML program for positioning of shapes on the browser.