

SSGMCE	SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGG.		LABORATORY MANUAL	
	PRACTICAL EXPERIMENT INSTRUCTION SHEET			
	EXPERIMENT TITLE : Write a program in VRML to view prototype of table with variable color for the legs & top.			
EXPERIMENT NO. : SSGMCE/WI/IT/01/8IT06/01		ISSUE NO. : 00	ISSUE DATE : 14.01.2023	
REV. DATE :		REV. NO. :	DEPTT. : INFORMATION TECHNOLOGY	
LABORATORY : Virtual and Augmented Reality (8IT06)			SEMESTER : VIII	PAGE: 1 OF 4

**1.0) AIM:**

Write a program in VRML to view prototype of table with variable color for the legs & top.

**2.0) SCOPE:**

- To create prototype of table.

**3.0) FACILITIES/ APPARATUS:**

i) **Software:** VRML Browser

**4.0) THEORY:**

This is a VRML program that defines a prototype for a two-colored table and an instance of that prototype with specific colors.

The program begins by defining a new prototype called TwoColorTable. This prototype defines a table consisting of a table top and four table legs. The table top is a Box shape with a size of 1.2 units by 0.2 units by 1.2 units. The table legs are Cylinders with a height of 1 unit and a radius of 0.1 units. The positions of the table legs are defined using the Transform node, which specifies the translation of each leg from the center of the table top. The appearance of the table top and legs is defined using the Appearance node, which specifies a Material with a diffuse color that depends on the values of the legColor and topColor fields. The legColor and topColor fields are defined as public fields of the prototype, which means that they can be set when the prototype is used to create an instance of the table.

SSGMCE	SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGG.		LABORATORY MANUAL	
	PRACTICAL EXPERIMENT INSTRUCTION SHEET			
	EXPERIMENT TITLE : Write a program in VRML to view prototype of table with variable color for the legs & top.			
EXPERIMENT NO. : SSGMCE/WI/IT/01/8IT06/01		ISSUE NO. : 00	ISSUE DATE : 14.01.2023	
REV. DATE :		REV. NO. :	DEPTT. : INFORMATION TECHNOLOGY	
LABORATORY : Virtual and Augmented Reality (8IT06)			SEMESTER : VIII	PAGE: 2 OF 4

After defining the TwoColorTable prototype, the program creates an instance of the table with red legs and a green top. The instance is created by using the TwoColorTable node and specifying values for the legColor and topColor fields.

Finally, the program specifies that the viewer should use the EXAMINE navigation type, which allows the user to rotate and zoom in on the scene using the mouse.

## Program

### Program for Prototype

**VRML V2.0 utf8**

**PROTO TwoColorTable [ field SFCOLOR legColor .8 .4 .7  
field SFCOLOR topColor .6 .6 .1 ]**

```
{
  Transform {
    children [
      Transform { # table top
        translation 0 0.6 0
        children
          Shape {
            appearance Appearance {
              material Material { diffuseColor IS topColor }
            }
            geometry Box { size 1.2 0.2 1.2 }
          }
    ]
  }
}
```

```
Transform { # first table leg
  translation -.5 0 -.5
  children
    DEF Leg Shape {
      appearance Appearance {
```

SSGMCE	SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGG.		LABORATORY MANUAL	
	PRACTICAL EXPERIMENT INSTRUCTION SHEET			
	EXPERIMENT TITLE : Write a program in VRML to view prototype of table with variable color for the legs & top.			
EXPERIMENT NO. : SSGMCE/WI/IT/01/8IT06/01		ISSUE NO. : 00	ISSUE DATE : 14.01.2023	
REV. DATE :		REV. NO. :	DEPTT. : INFORMATION TECHNOLOGY	
LABORATORY : Virtual and Augmented Reality (8IT06)			SEMESTER : VIII	PAGE: 3 OF 4

```

        material Material { diffuseColor IS legColor }
    }
    geometry Cylinder { height 1 radius .1 }
}
Transform { # another table leg
translation .5 0 -.5
children USE Leg
}
Transform { # another table leg
translation -.5 0 .5
children USE Leg
}
Transform { # another table leg
translation .5 0 .5
children USE Leg
}
] # End of root Transform's children
} # End of root Transform
} # End of prototype

# The prototype is now defined. Although it contains a
# number of nodes, only the legColor and topColor fields
# are public. Instead of using the default legColor and
# topColor, this instance of the table has red legs and
# a green top:

```

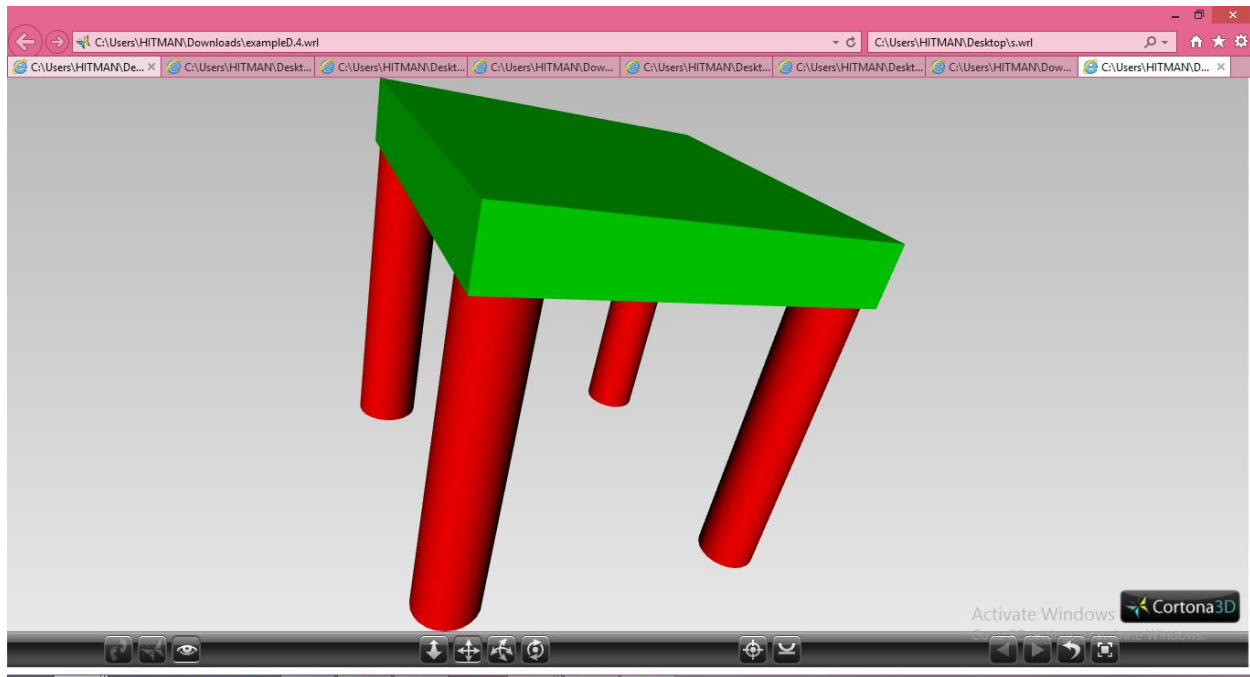
```

TwoColorTable {
    legColor 1 0 0 topColor 0 1 0
}
NavigationInfo { type "EXAMINE" }    # Use the Examine viewer

```

### Output

SSGMCE	SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGG.		LABORATORY MANUAL	
	PRACTICAL EXPERIMENT INSTRUCTION SHEET			
	EXPERIMENT TITLE : Write a program in VRML to view prototype of table with variable color for the legs & top.			
EXPERIMENT NO. : SSGMCE/WI/IT/01/8IT06/01		ISSUE NO. : 00	ISSUE DATE : 14.01.2023	
REV. DATE :		REV. NO. :	DEPTT. : INFORMATION TECHNOLOGY	
LABORATORY : Virtual and Augmented Reality (8IT06)			SEMESTER : VIII	PAGE: 4 OF 4



### 5.0) Conclusion:

The program demonstrates how to create and use a prototype in VRML to define a reusable object with customizable parameters. In this case, the prototype is used to create a two-colored table with specific colors for the legs and top.