Tutorial VRML - 2007

Hey, if you clicked on that tutorial link, I guess it means you are motivated to try a little coding! Because VRML is all about coding! But chill out, it's quite easy =)

We are going to create 2 simple shapes, just to give you a flavour. Then, if you are interested in moving on, just follow the links at the bottom of the tutorial.

All right, you're in charge now, have fun !

You need, let's say **3 things** to get started.
- A notepad document open (start/execute/notepad)
- A VRML plugin installed for your browser: http://www.parallelgraphics.com/products/cortona/
- Your browser open

In the notepad document, we are going to start writing some code. In orange are the comments, to explain what we are doing.

A VRML file always starts with the header:
> #VRML V2.0 utf8
> The identifier "utf8" which appears on the header lets you use international characters in your VRML models.
> Comments start with #, all characters until the end of the line being ignored.

The following is the beginning of our VRML file :

```
#VRML V2.0 utf8

Group {                                          # open a group to include elements

        children [                               # include a first element, a group of 'children'

                DEF box Transform {              # define what kind of object

                        translation 0 0 0        # define the coordinates of it : x  y  z

                        children [               # include children

                                Shape {          # define the properties of this object

                                        appearance Appearance {      # Define appearance

                                                material Material { diffuseColor 1 1 1 }   # Colour*

                                                }       # Close the appearance def.

                                        geometry Box { }        # specify the type of object (box)

                                }       # Closing the properties of the included object

                        ]       # Closing the second group of children

                }       # Closing the box properties


        ]       # Closing the first group of children
}       # Closing the group
```

*Colour : we are working in a RGB (red green blue) environment. In a graphic design software, the scale for RGB is from 0 to 255, here it is from 0 to 1, which means you need to divide by 255 every value you want to use in order to get the right colour.
white = 255 255 255 in RGB or 1 1 1 in VRML.

We are now getting somewhere:
Let's have a look at what you have created: save your notepad file under "tutorial_vrml.wrl" in the folder of your choice. Now open a new window in your web browser, and drag your **tutorial_vrml.wrl** file in it. The .wrl extension means it is a VRML file.

If your plugin is correctly installed for your browser, you should see a big black background and a white square. If you click on the "study button", you will be able to rotate your white square and therefore see a white cubic box.
We are now going to change the colour of our cube, and try to apply the same blue that you could see on the website you downloaded this tutorial from.

The values of this blue in RGB are: 30,6   102   150
To get it right for the VRML, it becomes: 0.12   0.4   0.59

We are just going to replace the appearance parameters by these values, save the .wrl file and check it in the browser again (re-drag your file, or hit F5 in the navigator). Your box should be blue now !

We are now going to add a pink cone, on the top of the cube.
In order to associate the cone with the box, we need to add the cone as other children in the same group. With the same procedure, add a new object at the end of the first one (in orange):

```
………………
                              appearance Appearance {
                                       material Material { diffuseColor 0.12 0.4 0.59 }
                                              }
                              geometry Box { }
                              }
                    ]
                    }
          DEF box Transform {

                 translation 0 1.5 0        # The cone will be placed as follow : x:0 y:1.5 z:0

                 children [

                       Shape {

                              appearance Appearance {

                                     material Material { diffuseColor 0.87 0.27 0.59}

                                            }

                              geometry Cone { }        # Define the type of object : Cone
                              }

                       ]

                       }
                 ]
}
```

Should you have any questions, do not hesitate to contact us at 06009954@napier.ac.uk

You notice some changes, such as the type of object, and the color.
This is the other colour of the website, a pink with a VRML value of 0.87 0.27 0.59 which corresponds to 221 69 150 in RGB.
Once this is done, check that all your markers are closed : [ ] and for the parenthesis : { }
Then save you file and have a preview in your web browser.
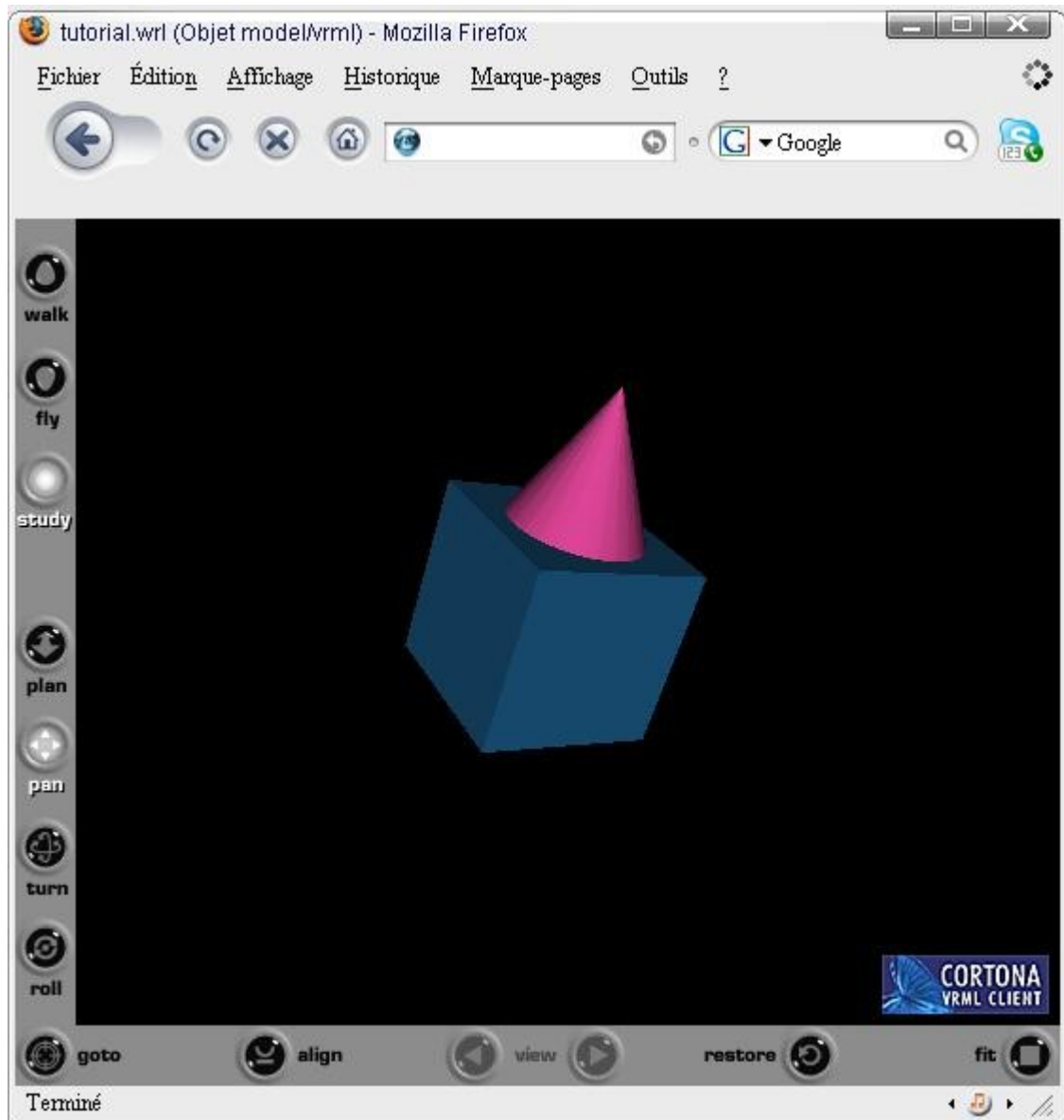
This is the very beginning of VRML ! There a lot of things to do with the light, the shapes, the interaction (grab objects…) so if your creativity was looking for a mean to express itself, you might have found something useful with VRML.

Take a few minutes to read some other tutorials, and learn some new techniques !
Here are a few links to more developed tutorials.
http://www.lighthouse3d.com/vrml/tutorial/
http://www.vruniverse.com/tutorials.html

Should you have any questions, do not hesitate to contact us at 06009954@napier.ac.uk