EURECOM
Sophia Antipolis

Final report

Lab 2 : VRML

*3*DGraph

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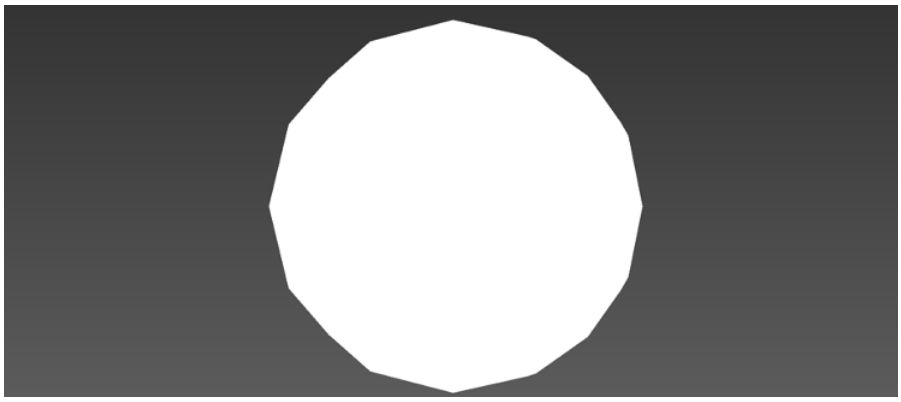
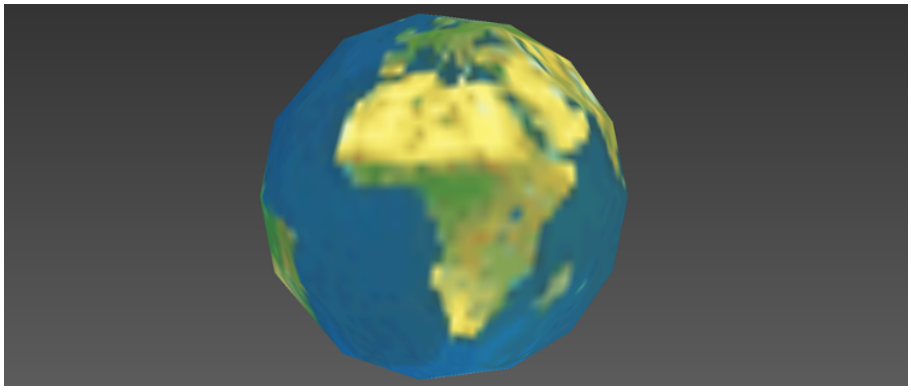
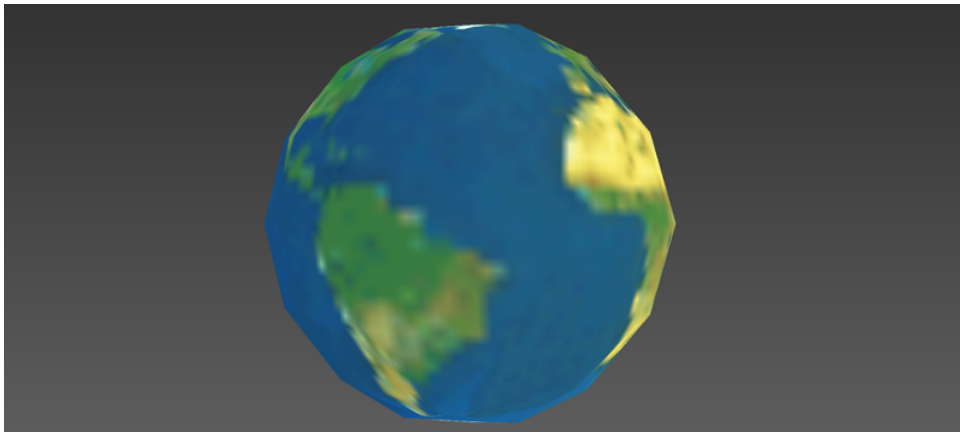
1. Step 1 : Create a sphere



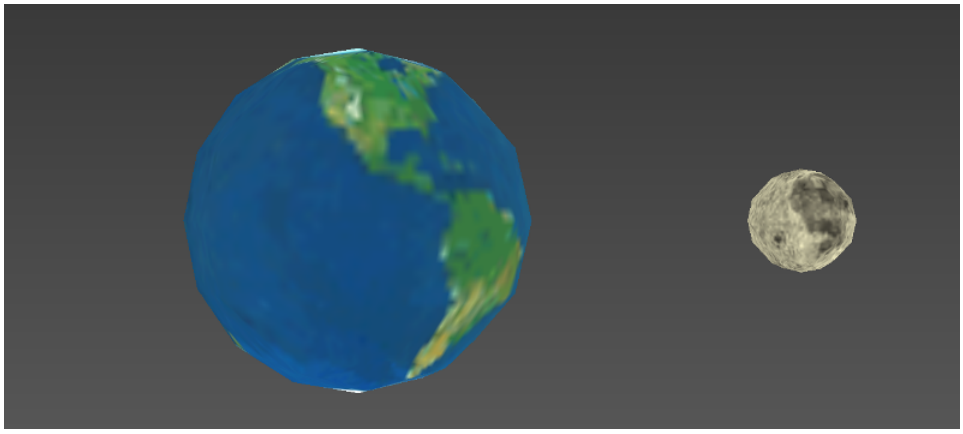
2. Step 2 : Texturize the sphere



3. Step 4 : Make the Earth spin



4. Step 5 : Add a Moon rotating around the Earth



5. Step 6 : Inverse translation and rotation

Why the orbit rotation of the Moon is set before the orbit translation, the Moon does not rotate around the Earth anymore.
Indeed, the software first rotates a point that has not been translated (thus located at 0.0.0) around the center of the Earth. It means that this point will remain at 0.0.0. It then translates it by 20.0.0. All in all the rotation is not effective. The Moon does not move.

6. Step 7 : Create a geometric object

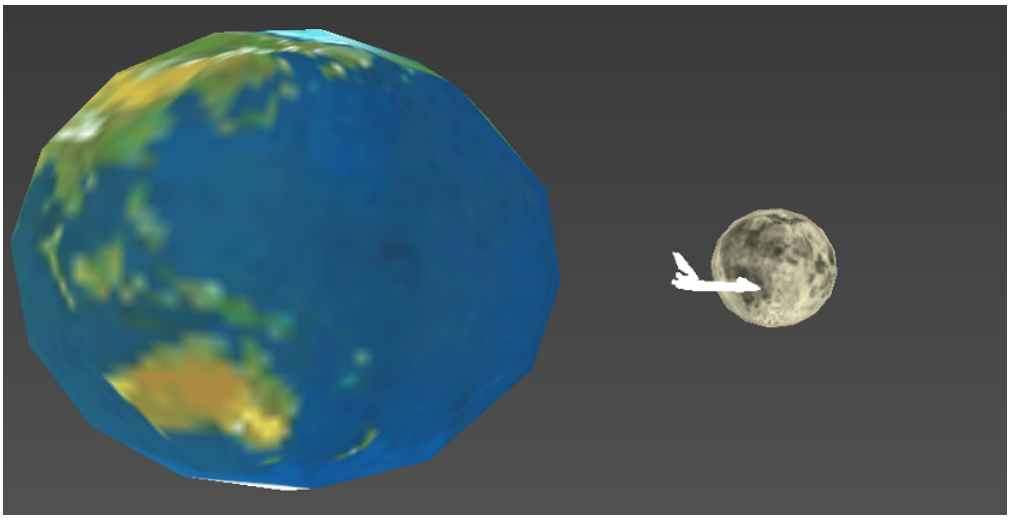


Figure 1: Animate the Space Shuttle with a touch sensor

7. Step 8 : Give a linear trajectory to the space shuttle

The space shuttle follows the spinning movement of the earth after taking off.

Indeed, the shuttle's nodes are still childs of the Spin_transform node of the Earth.

In order to give the shuttle a linear trajectory, we must create a new animation for the space shuttle. This animation is triggered when the Earth is touched, and gives the shuttle a rotation movement opposite to the Earth's spin.

8. Step 9 : 3D navigation

Walk : 2D navigation. Enables to go left, right, front, backward and rotate around oneself. However it stays on the same vertical axis. Useful when navigating in a real life decor, to mimic the human navigation.

Fly : Same as "Walk" navigation. Adds movement along the vertical axis. Mimics the bird navigation.

Examine : Rotates around a chosen point. Useful when observing a motionless point.

Plan : Moves along a line. It can work as an unzooming tool.

Pan : Moves along the two dimensions of the viewing point. It enables to shift the view.

Turn : Moves the entire set around a point. It is useful to move around the set. Yet it can put the set upside down, which could be an inconvenience for a real life decor.

Roll : Like the "Turn" navigation, it moves the entire set around an axis.

Goto : Change the viewing position to the focused point. It is very useful to navigate precisely to a point. It keeps the same viewing angle, which could sometimes be problematic.

Restore : Go back to the original position and viewing angle.

Fit : Moves the viewing position so that the entire set is contained in the view.

9. Step 11 : Build a simplified version of the solar system