



UNIVERSITY OF PETROLEUM & ENERGY STUDIES

SCHOOL OF COMPUTER SCIENCE

Department of Cybernetics

GRAPHICS AND ANIMATIONS TOOLS

LAB FILE

SESSION (2020-21)

Course: B.Tech with specialization in Open Source & Open Standards

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Experiment-8

AIM- Design of CAR using Blender

[GOOGLE DRIVE](#)

Step 1. Open your Blender and create a new file, now delete the default cube.

Modeling the Front

Step 1

Step1. Press 3 on the numpad to get into a side view. Press Z to toggle on wireframe mode (if you are in solid shade mode.) Move the vertices to match with the reference as shown in the image. Right Click on a vertex to select it and press G on the keyboard to move. You may also use the arrow widget to move the points.

Step 2

1. Select the front face by selecting the four vertices.
2. Press E to Extrude and the Esc key, so that the newly extruded face remains in the same position.
3. With the new face selected, press S and Scale it down.
4. Move the vertices to match the front part of the car. Right Click to select and G to move.

Step 3.

1. Select the newly created face by selecting its four vertices. Press and hold Shift to select multiples.
2. Press E to Extrude it once again. Press the Esc key or Right Click to confirm the position of the new extruded face.
3. Press S to Scale and move the mouse closer to scale them down.
4. Move the vertices one by one to match the reference. Right Click to select a vertex and then press G to move.

Step 4. Now tweak the newly formed vertices and face in the Front view as well.

Press 1 (numpad) to get into the Front view. Press Z to toggle between solid shade view and wireframe view to see the reference image behind.

Step 5. Also be sure to check the top view as well. Press 7 (numpad) to get into the Top view.

Step 6. With the mouse over the model, press Control-R to add an edge loop across the center as shown in the image. Left Click to confirm the position.

Step 7. Now select the bottom vertices (one by one) and match them with the reference image. Right Click to select, and then press G on the keyboard to move. Press Z key to toggle wireframe mode.

Check and match the shape from the side view as well. Press 3 (Numpad) to get into the side view.

Step 8. In the side view:

1. Select the four vertices as shown in the image. Hold down Shift and click to select more than one vertex.
2. Press E to Extrude and without moving the mouse, Left Click to confirm.
3. With the new face selected, press S and Scale it down a bit and again, Left Click to confirm.
4. Position the vertices to match the reference image. Right Click to select and G to move any vertex.

Step 9. Press 1 (numpad) to get into the Front view and match the bottom part with the reference image. The front part of the car is now done.

Step 10. As we added another loop in Step 6, we have an opportunity to smooth the curves out a bit. Tweak the vertices to match the reference and to give it a nice round shape and curve.

Check with the reference image also. Press Z to toggle between wireframe mode and solid mode.

Tweaking the Back

Step 1

Let's smooth out the awkward dent at the back. Select the two vertices shown in the image. Hold Shift and then Right Click to select multiple vertices. Press W to bring up our specials menu and then select Subdivide.

Step 2. Now select the two adjoining faces by select all 7 vertices, as shown in the image. Press Control-T to triangulate these faces.

Step 3. Right Click on the center point to select it, and press G to move it upwards. You can also use the arrow widget.

Make sure the contour is smooth and be sure to check it from all angles.

Step 4. Now click on Face select mode, so that we can directly select any face with a Right Click, instead of selecting the vertices to select one face.

Step 5. Select the two triangles/faces as shown the image, and press F to make them one face with four vertices, i.e. a quad.

Select these two faces/triangles and press F to make them one face, or a quad.

Again, select these two upper triangles and press F to make them one face.

Press Control-Tab and select Vertex select mode. Tweak the points to give it a nice contour.

Step 6. Press 3 on the numpad to get into the side view. Tweak the vertices to match the reference as shown in this image. Right Click to select any vertex and use G to move.

Modeling the Hood

Step 1. Select the front three faces of the bonnet/hood. Press E to Extrude and move your mouse a little bit to give it some height, and then Left Click to confirm.

Step 2. Right Click on the top vertex and then hold Shift and Right Click on the bottom vertex to select both in that order. Press Alt-M to bring out the Merge menu and then select At Last, so that the selected vertices will be merged onto the last selected vertex.

Step 3. Do the same with the center vertices. Select the top one first and then the bottom one. Press Alt-M to bring up the Merge menu and again, select merge At Last.

Step 4. Press 7 on the numpad to get into the Top view. Select the extruded part of the bonnet and move the vertices to match the reference.

Step 5. Now select only the top part of the extruded bonnet. Press G to move it towards the left, matching the reference. Move the vertices one by one and remember, Right Click to select and G to move.

We now have the body ready.

SNAPSHOTS:





