



**UNIVERSITY OF PETROLEUM & ENERGY STUDIES**  
**SCHOOL OF COMPUTER SCIENCE**  
*Department of Cybernetics*

**GRAPHICS AND ANIMATIONS TOOLS**  
PROJECT  
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## - A small cottage during winter using blender

Google Drive :- [https://drive.google.com/drive/u/2/folders/19wJV5ng-wL5nBBEma\\_9IV3fEkh1cwqXM](https://drive.google.com/drive/u/2/folders/19wJV5ng-wL5nBBEma_9IV3fEkh1cwqXM)

### *Steps for creating cottage.*

- We will be using extrude function for creating house.
- **Mode:** Edit Mode
- **Panel:** Toolbar -> Tools -> Mesh Tools -> Add: Extrude Region
- **Menu:** Mesh -> Extrude -> Extrude Region
- **Shortcut key:** E (From keyboard)

#### Step 1:

##### Viewport shading

Enable the **Rendered** mode in Viewport Shading in the upper-right corner.

#### Step 2

- **Edit faces, edges and vertices**
- Next go to **Edit** mode. In this mode you can edit the faces, edges and vertices.

#### Step 3

- **No we need to pull out the face on the side. Go to Face select, next to the Edit mode .Then select the face on the side of the cube.**

#### Step 4

- Now we're going to **Extrude** this face. Press E to extrude and pull out the face with your mouse.

#### Step 5

- **Go to Edge select.**
- **And select the middle part of the house. Pull that part up. And create a house.**

#### Step 6

- Go back to **Object** mode. Give your house a color.

### *Steps for creating building.*

1. Start with the default cube
2. Now enter edit mode(TAB) and loop cut (CTRL + R) it about the center, like so:
3. Select all the faces of the top half and separate them (P->Selection)
4. In object mode move the newly separated top portion up along the Z axis (G + Z + mouse)
5. Select the bottom box, make a copy (SHIFT + D), then move it up along the Z axis.

6. Select the middle piece, switch to edit mode, select the bottom face and delete it (x -> faces), like so:

7. This face is going to represent the various floors of your building. Keep the top and bottom edges the same size as the top/bottom box and start carving it up to match your floor. I generally start by doing a pair of loop cuts along the entire length, like so:

8. This can be accomplished by doing a loop cut (Ctrl + R), then before clicking to commit, scroll button once to perform multiple evenly spaced cuts at once. Next I move them up and down the mesh simultaneously by simply scaling along the Z axis (S, Z, mouse move)

Now lets do several more loop cuts for windows using the same process (Ctrl + R, Mouse wheel multiple times):

9. Next select every other edge created (alt + shift click to select multiple) like so

10. We now want to edge slide the selected edges (G,G)

11. Now select the inner faces. Then hit E to extrude them

12. Repeat the similar process on all 4 sides to define your building. Now that we have our floor defined, it's time to make a lot of them. Switch to object mode then go to the modifiers tab and select Array:

13. Now we need to make sure we set the axis to array along ( set Z to 1 in the relative offset area ) and the number of times to duplicate under the count section.

14. Select all 3 shapes and merge them together (Ctrl + J. Now we just need to weld our objects together. Box select (B) the overlap area between the bottom and middle boxes in edit mode,

15. Now select Remove Doubles in the Tool menu(T), then manipulate the Merge distance. Repeat for the top portion.

## **STEPS FOR CREATING CAR**

1. Clear your default interface of blender which includes deletion of the cube.

2. Go to the mesh and select the image option and set a picture of the car as a background image in blender.

3. Go to mesh and select a cube and cut this cube in half and now you can use a mirror modifier to complete the other half of our car design. With the help of a mirror modifier, you can design one side of the car and another half will follow accordingly. Also do check clipping mode in mirror modifier.

4. Now extrude the cube in the form of a rectangular bar which will act as a body for our car and do follow the background picture you used in step-2.

5. Now give the cube the almost exact shape of the central portion of the image.

6. Now go to face select mode and select the upper portion of the cube and extrude it a little bit to give it the shape of the roof of our car. And extrude from the slide to give it a little slant for a more realistic view.

7. Now to design the wheels of our car, go to shapes and partitions and put them across our car body and give them a good circular shape in form of a wheel. Select all the sides except the area consisting of wheels. Now go to the top view and extrude the whole body sidewise, which will give you a good shape of the body with space for wheels.

8. Now move all the edges a little bit inwards to give a more realistic view to the car. And now move the front view of the car in the middle slightly to give it space for headlights.

9. Now look at your background picture and extrude from all sides where you need to provide a great real view accordingly.

10. Now go to the central portion of the wheel area and go to mesh and select a circle and go to circle setting and change it to 16 vertices and now hit R-90 and select the circle and extrude along x axis to give a real view for the thickness of the tyres.

11. Hit E and scale it down to give the rims of tyre a great real view. Now press s and scale the tyres a little bit outward to give a slight bulge to it. Now select the alternate of 16 vertices and give it a slight extrude and design for a real nice-looking view for tyres.

12. Duplicate the same tyre by pressing, press L and press D to duplicate the tyre and press G

and Y to move the front tyre to the back side and fix it in the centre.

13. Add rearview mirrors by extruding the surface of the car side wise and move it towards the driver and tilt it a bit down.

14. Now for the colouring part, go into the edit mode again, and select the faces you want for one colour, and click the + button in the materials section

15. This will apply the colour to all faces, next click on another face, click the + button, and click Assign, this will give the selected face the new material.

16. Finally export your files as .blend file and also render a few images for the reference purposE

