



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

**GRAPHICS AND ANIMATIONS TOOLS**  
LAB FILE  
SESSION(2020-21)

Course: BTech with specialization in Open Source & Open Standards

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## Experiment 10- Design of Building using blender

[Google Drive :-](https://drive.google.com/drive/u/1/folders/1lJK9cpjdBo0Ea4UpnZiRvXBRXWlg9Tq3)

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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.

