Point Cloud Learning Assignment (Day 1 - 3)

1. Open & Explore the .pcd File:

- Open any .pcd file using a text editor like Notepad or VS Code.

  Find and write down:
- Total number of points (POINTS)
- The names of each field listed under FIELDS (like x, y, z, rgb)
- Check if the file contains color or not

2. Visualize Point Cloud in Open3D:

- Open the Open3D Python environment (e.g., Jupyter Notebook or script).
- Use it to **load and view** the point cloud. (Using python)

  Then :
- Can you see the point cloud?
- Is it in color or black & white?
- Is it dense (many points) or sparse?

3. Compare Two .pcd Files:

- Pick two .pcd files and fill in this table:

File Name	FIELDS	POINTS	RGB Present?	Format (ASCII/BINARY)
file_1.pcd				
file_2.pcd				

4. Modify and Reload a .pcd File:

- Edit the .pcd file in a text editor.
- Change one number (like a z-coordinate or color value).
- Save the file.
- Try to open it again in Open3D.
- Answer: Did it load properly? If not, what was the error?

5. Save the Point Cloud with a New Name:

- After visualizing the point cloud in Open3D,
- Save it as a **new file** (example: output_clean.pcd (Using Python))

  Check:
- Is the new file created?
- Can you open the saved file again and visualize it?