



1 The procedure to practise

1. You have been given a set of spoken tutorials and files.
2. You will typically do one tutorial at a time.
3. You may listen to a spoken tutorial and reproduce all the commands shown in the video.
4. If you find it difficult to do the above, you may consider listening to the *whole* tutorial once and then practise during the second hearing.

2 OpenFOAM

1. Click on "Select FOSS Category" drop-down and choose "OpenFOAM".
2. Click on `Select Language` drop-down and choose the languages (English, Hindi, Marathi, ..) in which you wish to learn.
3. Click on "Locate Tutorial" button.
4. You will see a list of tutorials based on your selection.
5. Start with the first tutorial in the displayed list.

3 First tutorial: Installing and Running

1. Locate the topic "Installing and Running"
2. To view the tutorial, click on the video player icon on the right of the selected topic.
3. The `Outline` of the tutorial and the `Pre-requisite` will be visible on the right of the player.
4. The links for `Assignment` and `Code Files` will be available below the player.
5. Click on the player and view the tutorial.
6. Please follow the tutorial and **reproduce** all the activities as shown in the tutorial.
7. This topic teaches how to install `OpenFOAM` and `Paraview`.

3.1 To check if OpenFOAM is installed

- (a) Open the `Terminal` and type `run` then press `Enter`.
- (b) If `OpenFOAM` is installed, this will take you to the run directory of `OpenFOAM`.
- (c) If `OpenFOAM` and `Paraview` are already installed on your machine, then skip the video from 1:19 to 11:50.

3.2 Common instructions for Assignments

- (a) Attempt the `Assignments` as instructed in the tutorial.
- (b) Save your work in a folder of your choice.

3.3 Common instructions to use Code files

- (a) Code files used in the tutorial will be available as a link "Code files" below the video player.
 - (b) Click on the link "Code files" and save it in a folder, where you want to save.
 - (c) Extract the downloaded zip file.
 - (d) You will see all the code/source files used in the particular tutorial.
 - (e) Use these files as per the instructions given in the particular tutorial.
8. Once the tutorial is complete, click on the back button on the browser (top-left corner left-arrow button).

4 Second Tutorial: Creating simple geometry

1. Locate the topic `Creating simple geometry`.
2. To view the tutorial, click on the video player icon on the right of the selected topic.
3. At 08:13, pause the tutorial.
4. After the command `type wall;` type the command `faces;`

5. Resume the tutorial.
6. Once the tutorial is complete, click on the back button on the browser (top-left corner left-arrow button)

5 Third Tutorial: Creating Curved geometry in OpenFOAM

1. Locate the topic `Creating Curved geometry in OpenFOAM`.
2. To view the tutorial, click on the video player icon on the right of the selected topic.
3. Please note that in `blocks`, you have to enter the number of `grid points` in x, y , and z direction in `bracket`. This part is missing in the tutorial.
4. When you try to mesh the geometry using the `blockMesh` command, there may be some error in the `terminal`.
5. This is a small bug, which tells you to change the `allowSystemOperations` in `controlDict` to be changed from 0 to 1.
6. To make these changes, you may need to go through the `root directory` of Linux.
7. In the `terminal`, type `sudo -i` and press `Enter`.
8. In the next line, type the password for your system.
9. Now type `cd ..` and press `Enter`.
10. Then type `cd /opt` to go to the directory where `OpenFOAM` is installed.
11. Go to the `OpenFOAM` folder by typing `cd openfoam211` and press `Enter`.
12. Type `ls` to see the list of contents inside `openfoam211`
13. Type `cd etc` and press `Enter`.
14. Now you can see the `controlDict` file.
15. Open `controlDict` file in `gedit` text editor and scroll down to line number 43.
16. Change `allowSystemOperations` from 0 to 1 and save the file.
17. Exit the root mode by pressing `Ctrl+z` and resume with the Meshing.
18. Play-pause-practise the whole tutorial.
19. Once the tutorial is complete, click on the back button on the browser (top-left corner left-arrow button).
20. Now, choose the next tutorial and follow all the above instructions, till you complete all the tutorials in the series.