



1 Online / Offline content

1. The online content of Spoken Tutorials can be accessed from :
<https://spoken-tutorial.org/tutorial-search/>
2. You can also download the Spoken Tutorials for offline learning from :
<https://spoken-tutorial.org/cdcontent/>
3. From this link download the FOSS categories in the language you wish to learn.
4. The Spoken Tutorial content will be downloaded as a zip file on your machine.
5. Extract the contents of the zip file & access them.

2 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 **Side-by-Side Method**.
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.

3 Jmol Application

1. Click on "Select FOSS" or "All FOSS Categories" drop-down and choose "Jmol Application".
2. Click on "Select Language" or "All Languages" drop-down and choose the language (English, Hindi, Marathi ...) in which you wish to learn.
3. Click on "Submit" button.
4. You will see a list of tutorials based on your selection.
5. Start with the first tutorial in the displayed list.

4 General Instructions for Jmol

1. If you are unable to fetch/open the structure of molecules from the database websites in Jmol, please change the proxy settings and check firewall settings.
It generally works under No Proxy settings and without firewall.
2. Sometimes if you type a wrong command or if Jmol is unable to read the command you will see a zapped window and an error message. To refresh the window, open the **Console** by clicking on **File** menu.

Select **Console** from the list. Console window opens with a prompt. At the prompt type **zap** and press **Enter**.

5 First tutorial: Overview of Jmol Application

1. Locate the topic **Overview of Jmol Application** and click on it.
2. To view the tutorial, click on the **Play** icon which is located in the player.
3. For Ubuntu users at 4.19 min, the executable **Jmol.jar** file may not open sometimes because the permissions to execute the file were not given. Do the following to give executable permission:
Right-click on the **Jmol.jar** file and select **Properties** option. In the dialog-box select **Permissions** tab, In the **Execute** field check the check-box for **Allow executing file as program**. Close the dialog-box. Now Double-click on the **Jmol.jar** file to open the **Jmol Application** interface.

6 Second tutorial: Introduction to Jmol Application

1. Please locate the topic **Introduction to Jmol Application** and click on it.
2. To view the tutorial, click on the **Play** icon which is located in the player.
3. The **Pre-requisite** will be visible below the player (only for Online contents).
4. **Outline, Assignments, Code Files and Slides** are available below the player.
5. Adjust the size of the browser in such a way that you are able to practise in parallel.
6. These tutorials are created on Ubuntu Linux - 12.04
7. From 2.13 min to 2.34 min the tutorial shows how to open **Jmol Application**
8. From 1.33 min to 2.12 the tutorial shows information about installation of **Jmol Application**. Please ignore this step if you have already installed **Jmol** on your system.

6.1 Opening Jmol Application on Ubuntu

1. Open the extracted Jmol installer file.
Double-click on the **Jmol.jar** file. This will open the **Jmol** interface.
You can also right click on the **Jmol.jar** file.
From the options select **OpenJDK Java 8 Runtime**

from the list.

2. **Opening Jmol using terminal:** Open the terminal by pressing **Ctrl, Alt and T** keys simultaneously.

Navigate to the Jmol installer file. For example if you have downloaded and extracted the Jmol installer file `jmol-14.31.2` to the Desktop folder:

Navigate to the Jmol installer file by typing the following command at the prompt: `cd Desktop`

Press Enter key on the key board.

To run the jar file, type the following command:

```
java -jar Jmol.jar
```

Press enter on the keyboard. Jmol interface opens.

Please note: Do not close the terminal while you are working on Jmol interface. If you close the terminal, it will kill the process and Jmol interface will close.

6.2 Opening Jmol Application on Windows and Mac

1. Go to the folder where you have extracted the Jmol zip file.
Double-Click on the Jmol.jar file.

7 Eighth tutorial: Structures from Database

1. From 5.40 min to 7.23 min the tutorial describes how 2D drawings created in GChemPaint software can be viewed as 3D structures in Jmol.
2. Please visit the link given here to view tutorials on GChemPaint.
<https://spoken-tutorial.org/>

8 Common Instructions to practise

1. Create a folder on the "Desktop" with your "Name-RollNo-Component". (Eg. "Priya-07-Jmol").
2. Give a unique name to the files you save, so as to recognize it next time. (Eg. "Practice-1-Priya").
3. Remember to save all your work in your folder.
4. This will ensure that your files don't get overwritten by someone else.

5. Save your work from time to time, instead of saving it at the end of the task.
6. Play-pause-practise the whole tutorial.
7. Once the tutorial is complete, choose the next tutorial from the playlist which is located on the right side or below the player.
8. Follow all the above instructions, till you complete all the tutorials in the series.

9 Common instructions for Assignments

1. Attempt the **Assignments** as instructed in the tutorial.
2. Save your work in your folder.

10 Common instructions to use Code files

1. Click on the link "Code files" located below the player and save it in your folder
2. Extract the downloaded zip file.
3. You will see all the code/source files used in the particular tutorial.
4. Use these files as per the instructions given in the particular tutorial.

11 Tutorials that need internet connection

The following tutorials need working internet connection to practise:

1. Overview of Jmol Application
2. Modify Display and View
3. Script Console and Script Commands
4. Surfaces and Orbitals
5. Structures from Database
6. Crystal Structure and Unitcell
7. Proteins and Macromolecules
8. 3D Models of Enzymes
9. Symmetry and Pointgroup
10. Animations using Script Commands