

Build Structures

Talk to a Teacher

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

Snehalatha Kaliappan

IIT Bombay

5 August 2016



Learning Objectives



Learning Objectives

- ▶ **Create structures of small molecules, peptides and DNA fragments**



Learning Objectives

- ▶ **Create structures of small molecules, peptides and DNA fragments**
- ▶ **Modify structure (add atoms, delete atoms)**



Learning Objectives

- ▶ Create structures of small molecules, peptides and DNA fragments
- ▶ Modify structure (add atoms, delete atoms)
- ▶ Minimize energy



Learning Objectives

- ▶ Create structures of small molecules, peptides and DNA fragments
- ▶ Modify structure (add atoms, delete atoms)
- ▶ Minimize energy
- ▶ Join models



Pre-requisites



Pre-requisites

- **Chimera interface**



Pre-requisites

- ▶ **Chimera interface**
- ▶ <http://spoken-tutorial.org>



System Requirement



System Requirement

- ▶ **Ubuntu OS version 14.04**



System Requirement

- ▶ **Ubuntu OS version 14.04**
- ▶ **Chimera version 1.10.2**



System Requirement

- ▶ **Ubuntu OS version 14.04**
- ▶ **Chimera version 1.10.2**
- ▶ **Mozilla firefox browser 42.0**



System Requirement

- ▶ **Ubuntu OS version 14.04**
- ▶ **Chimera version 1.10.2**
- ▶ **Mozilla firefox browser 42.0**
- ▶ **Working internet connection**



Summary



Summary

- ▶ Create structures of small molecules, peptides and DNA fragments
- ▶ Modify structure (add atoms, delete atoms)
- ▶ Minimize energy
- ▶ Join models



Assignment



Assignment

- ▶ Join two benzene molecules to build a biphenyl molecule
- ▶ Build a peptide fragment with your own choice of amino acid sequence
- ▶ Build a RNA fragment with a random nucleotide sequence



About the Spoken Tutorial Project

- ▶ Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project



About the Spoken Tutorial Project

- ▶ Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project
- ▶ If you do not have good bandwidth, you can download and watch it



Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Acknowledgements

- ▶ Spoken Tutorial Project is a part of the Talk to a Teacher project
- ▶ It is supported by the National Mission on Education through ICT, MHRD, Government of India
- ▶ More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>

