

# Writing Sequence Files

**Talk to a Teacher**

**<http://spoken-tutorial.org>**

**National Mission on Education through ICT**

**<http://sakshat.ac.in>**

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**15 September 2015**



# Learning Objectives



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- ▶ **Create Sequence Record Objects**
- ▶ **Write sequence files**
- ▶ **Convert between file formats**
- ▶ **Sort records in a file by length**



# Pre-requisites



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- ▶ **Refer to Python Spoken Tutorials at <http://spoken-tutorial.org>**



# System Requirements



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- ▶ **Biopython version 1.64**



# SeqIO Functions



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- ▶ **Read contents of the file: Parse and Read**



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- ▶ Writing sequences to a file: **write**



# SeqIO Functions

- ▶ Read contents of the file: **Parse** and **Read**
- ▶ Writing sequences to a file: **write**
- ▶ Interconversion between various file formats: **convert**



# Sequence Record Objects



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- ▶ It is the basic data type for the sequence input/output interface



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- ▶ It is the basic data type for the sequence input/output interface
- ▶ A sequence is associated with higher level features such as identifiers and descriptions



# Limitations of Convert function

- ▶ Writing some formats requires information which other files formats don't contain
- ▶ For example: Can convert a **GenBank** file to a **FASTA** file, can't do the reverse  
Can convert a **FASTQ** file to a **FASTA** file, can't do the reverse



# Summary

- ▶ Create Sequence Record Objects
- ▶ Write sequence files using **write** function of Sequence Input/Output module
- ▶ Convert between sequence file formats using **convert** function
- ▶ Sort records in a file by length



# Assignment



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- ▶ Extract the gene **HIV1gp3** at positions 4587 to 5165 from the genomic sequence of HIV
- ▶ The file **HIV.gb** is included in code files of this tutorial



# About the Spoken Tutorial Project

- ▶ Watch the video available at [http://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](http://spoken-tutorial.org/What_is_a_Spoken_Tutorial)
- ▶ It summarises the Spoken Tutorial project



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- ▶ 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](mailto: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>

