

Writing Sequence Files

Talk to a Teacher

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

Snehalatha Kaliappan

IIT Bombay

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Learning Objectives



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- ▶ **Create Sequence Record Objects**



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- ▶ **Write sequence files**



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- ▶ **Convert between file formats**



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



Sequence Record Objects

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



Sequence Record Objects

- ▶ 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

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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

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- ▶ 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>

