Python Programming for Biology : Online Resources

The Python code and supporting material, including example data files, are available as a single ZIP compressed archive. This must be uncompressed before use and will extract into a folder (directory) called "`PythonForBiology`", inside which the Python files, ending in "`.py`", and various sub-folders can be found. This arrangement of files and folders will allow the Python code to run directly from inside the uncompressed "`PythonForBiology`", i.e. the locations of any modules or data files mentioned in the code (and book) are specified relative to this location.

The "`examples`" sub-folder contains all of the data files that are used as examples to support the Python code described in the book.

The "`databases`" sub-folder relates to Chapter 20 and contains SQL and Python files sub-divided into sections to support both SQLite and MySQL database implementations.

The "`speedy`" folder relates to Chapter 27 and contains code relevant to the binding of fast functions written in the C or Cython languages, including any files required for compilation.

Many of the book chapters have a corresponding Python file containing the completed scripts and programs for that chapter. These files may be run directly as Python to test the code they contain. Note that several of these files will not work isolation, given that they import functionality from the others, which are assumed to be in the same folder. Chapters 1-4 and 10 do not have a corresponding Python file given that they only discuss the code in terms of short or incomplete fragments.

The chapters relate to the Python files and sub-folders (marked with "/") as follows:

Chapter	File
Chapter 5 "Functions"	`Functions.py`
Chapter 6 "Files"	`Files.py`
Chapter 7 "Object orientation"	`Molecules.py`
Chapter 8 "Object data modelling"	`Modelling.py`
Chapter 9 "Mathematics"	`Maths.py`
Chapter 11 "Biological sequences"	`Sequences.py`
Chapter 12 "Pairwise sequence alignments"	`Alignments.py`
Chapter 13 "Multiple sequence alignments"	`MultipleAlign.py`
Chapter 14 "Sequence variation and evolution"	`SeqVariation.py`
Chapter 15 "Macromolecular structures"	`Structures.py`
Chapter 16 "Array data"	`ArrayData.py`
Chapter 17 "High-throughput sequence analyses"	`HTSequences.py`
Chapter 18 "Images"	`Images.py`
Chapter 19 "Signal processing"	`Signals.py`
Chapter 20 "Databases"	`databases/`
Chapter 21 "Probability": Probability.py	`Probability.py`
Chapter 22 "Statistics": Statistics.py	`Statistics.py`
Chapter 23 "Clustering and discrimination"	`Clustering.py`
Chapter 24 "Machine learning"	`MachineLearning.py`
Chapter 25 "Hard Problems"	`HardProblems.py`

Chapter 26 "Graphical interfaces"	`GraphicalInterfaces.py`
Chapter 27 "Improving speed"	`Speedy.py` and `speedy/`
Appendix 6	`StatisticsR.py`

And conversely from the perspective of the Python files and folders, listed alphabetically:

`Alignments.py`	Chapter 12 "Pairwise sequence alignments"
`ArrayData.py`	Chapter 16 "Array data"
`Clustering.py`	Chapter 23 "Clustering and discrimination"
`databases/`	Chapter 20 "Databases"
`Files.py`	Chapter 6 "Files"
`Functions.py`	Chapter 5 "Functions"
`GraphicalInterfaces.py`	Chapter 26 "Graphical
`HTSequences.py`	Chapter 17 "High-throughput sequence analyses"
`HardProblems.py`	Chapter 25 "Hard Problems"
`Images.py`	Chapter 18 "Images"
`MachineLearning.py`	Chapter 24 "Machine learning"
`Maths.py`	Chapter 9 "Mathematics"
`Modelling.py`	Chapter 8 "Object data modelling"
`Molecules.py`	Chapter 7 "Object orientation"
`MultipleAlign.py`	Chapter 13 "Multiple sequence alignments"
`Probability.py:`	Chapter 21 "Probability"
`SeqVariation.py`	Chapter 14 "Sequence variation and evolution"
`Sequences.py`	Chapter 11 "Biological sequences"
`Signals.py`	Chapter 19 "Signal processing"
`Speedy.py` and `speedy/`	Chapter 27 "Improving speed"
`Statistics.py`	Chapter 22 "Statistics"
`StatisticsR.py`	Appendix 6
`Structures.py`	Chapter 15 "Macromolecular structures"