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# Jupman

*A template manager for online books made with Jupyter notebooks and NBSphinx doc generator*

## People That Write a Lot

Feb 16, 2021

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The complete book can be found online for free at:

<https://jupman.softpython.org/en/latest/>



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## GENERAL INFO

The contacts to reach me can be found [at this page](#)<sup>1</sup>.

### 1.1 Timetable and lecture rooms

Lectures will take place on Tuesdays from 15:30 to 17:30 (synchronous online if not otherwise communicated) and on Thursdays from 15:30 to 17:30 (synchronous online if not otherwise communicated). This second part of the Scientific Programming course will tentatively run from 03/11/2020 to 14/12/2020.

### 1.2 Midterm

The midterm of this part of the course will take place on Wednesday, December 16th, online at 11:30-13.30.

### 1.3 Moodle

In the moodle page of the course you can find announcements and videos of the lectures. It can be found [here](#)<sup>2</sup>.

### 1.4 Zoom links

The zoom links for the lectures can be found in the Announcements section of the moodle web page.

### 1.5 Slides

The slides shown during the lectures will gradually appear below:

- Lecture 1-2: [Introduction to algorithms](#)
- Lecture 3: [Algorithms and complexity](#)
- Lecture 4: [Complexity and sorting](#)
- Lecture 5: [Data Structures 1](#)

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<sup>1</sup> <http://www.fmach.it/CRI/info-general/organizzazione/Biologia-computazionale/BIANCO-LUCA>

<sup>2</sup> <https://didatticaonline.unitn.it/dol/course/view.php?id=25445>

- Lecture 6: [Data Structures 2](#)
- Lecture 7-8: [Trees](#)
- Lecture 9-10: [Graphs](#)
- Lecture 11: [Dynamic Programming](#)
- Lecture 12: [Other paradigms](#)

## 1.6 Teaching assistants

[David Leoni](#)<sup>3</sup> (for Data Science)

[Erik Dassi](#)<sup>4</sup> (for QCB)

## 1.7 Course material

Brad Miller and David Ranum. *Problem Solving with Algorithms and Data Structures using Python*. An interactive version is freely available at [this link](#)<sup>5</sup>.

Other material includes the following books:

- Lutz. *Learning Python* (5th edition). O'REILLY (2013)
- Hetland. *Python Algorithms: Mastering Basic Algorithms in the Python Language*. Apress, 2nd ed. (2014)
- Cormen et al. *Introduction to Algorithms* (3rd edition). MIT Press.

and (thanks to Prof. Alberto Montresor)

- Introduction to algorithms | [Link](#)
- Big-Oh Notation | [Link](#)
- Sorting | [Link](#)
- Dynamic Programming | [Link](#)
- Greedy Algorithms | [Link](#)
- String Algorithms | [Link](#)

### 1.7.1 Link to lab material

Material for QCB students can be found [here](#)<sup>6</sup>.

Material for Data Science students can be found [here](#)<sup>7</sup>.

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<sup>3</sup> <https://www5.unitn.it/People/it/Web/Persona/PER0014767#INFO>

<sup>4</sup> <https://www5.unitn.it/People/it/Web/Persona/PER0010586/>

<sup>5</sup> <http://interactivepython.org/runestone/static/pythonds/index.html>

<sup>6</sup> <https://bitbucket.org/erikdassi/sciprog2020>

<sup>7</sup> <https://datasciprolab.readthedocs.io/en/latest/>

## 1.8 Acknowledgements

I would like to thank Prof. Alberto Montresor for kindly allowing me to use his slides and Dr. David Leoni for all his help and for sharing Jupman with me. I would also like to thank Dr. Stefano Teso for allowing us to use some of his material of a previous course.





## PAST EXAMS

Below you can find some past exams. This is to help you getting an idea on how the final exam is likely to look like.

- [Sample Exam 1](#)
- [Sample Exam 2](#)
- [Sample Exam 3](#)
- [Sample Exam 4](#)
- [Exam 10/02/2021](#)

The input files needed follow:

- Exam1:
  - [marker\\_data.tsv](#)
- Exam2:
  - [test\\_genes.tsv](#)
  - [test\\_seqs.fasta](#)
- Exam3:
  - [ctg\\_data.tsv](#)
  - [MyQueue.py](#)
  - [ReversibleQueue.py](#)
- Exam4:
  - [sample.fastq](#)
  - [DiGraphLL.py](#)
- Exam 10/02/2021:
  - [rawcounts.all.txt](#)



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CHAPTER  
**THREE**

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