LIN6209 Coding for Linguists

Convenor: Peter McGinty – p.mcginty@qmul.ac.uk
Office hours: Fridays 15:00-16:30. Zoom ID: 860 9761 9262, passcode: LIN6209

Class time and place: Mondays, 10:00-12:00 Queens' Building PC lab QM-212

QMPlus URL: https://qmplus.qmul.ac.uk/course/view.php?id=18362

Module description

This module introduces computer programming and computational modelling for applications in linguistics. There will be a strong focus on developing practical skills.

Students will learn how to write code in Python3 and gain experience in using tools that are suited to solving a range of computational problems in linguistics.

Learning outcomes: On completion of this module students will be ready to:

- Design and write programs in Python 3
- Use the parts of the Python standard Library relevant to analysing text
- Programmatically read, process, and write large text data files
- Analyse text and report on its statistical properties
- Search for patterns in texts
- Present results attractively in graphs and charts
- Understand the statistical techniques used in machine learning

Module approach

The best way to learn any programming language is to do lots of practice. You will therefore do lots of practical exercises. Expect one each week.

The weekly lecture will be recorded on Zoom and QReview and then available on QM+.

Active participation in class and in our Python Forum (on QMPlus) is expected and encouraged (and worth 10% of your final grade).

Readings and other learning resources

There are no set books for this module. All the material we need to learn is available for free on the web. I will post the material for each week's lesson on QM+.

There are many good books and online resources for learning Python 3. A few I can recommend are:

- *Learn Python in One Day and Learn It Well*. 2017 (2nd ed). J. Chan. LCF Publishing.
- *Practical Programming: An Introduction to Computer Science Using Python 3*. 2013 (2nd ed.). P. Gries, J. Campbell, J. Montojo. Dallas and Raleigh: The Pragmatic Bookshelf.
- *Python Basics. A Practical Introduction to Python 3.* 2021 (4th ed.). The RealPython.com Tutorial Team. Real Python. www.realpython.com
- *Think Python: How to Think Like a Computer Scientist*. 2016 (2nd ed.) A. B. Downey. Download free at https://greenteapress.com/wp/think-python-2e/

There are also myriad tutorials on YouTube and the web. A few I can recommend (all free) are:

- snakify.org/en/
- realpython.com
- www.w3schools.com/python/
- www.freecodecamp.org/learn/

Coursework assignments and deadlines

You will be assessed on 5 assignments (totalling 90% of the mark) and on participation in class and on the class Python Forum in QMPlus (10%). See next page and QMPlus for additional detail.

All work must be submitted electronically on QMplus. See the SLLF Student Handbook for information on late penalties and EC claims.

Lecture and Assignment Schedule

Week	Date	Topic	Reading & Practice	Weekly assignment deadlines Upload before 3pm Sunday
1	27 Sept	Introduction to Python	Relevant library modules in www.python.org [see QM+] AND practice worksheet	Wk 1 practice assignment due 3 Oct
2	4 Oct	Functions	… ditto …	Wk 2 assignment due 10 Oct – **assessed**! (10%)
3	11 Oct	Conditional execution	… ditto …	Wk 3 practice assignment due 17 Oct
4	18 Oct	Collections	… ditto …	Wk 4 assignment due 24 Oct – **assessed** (15%)
5	25 Oct	Reading and writing files	… ditto …	Wk 5 practice assignment due 31 Oct
6	1 Nov	Analysing text – part 1	… ditto …	Wk 6 assignment due 11 Nov – **assessed** (15%)
7	8 Nov	READING WEEK	… ditto …	*Nothing assigned/due*
8	15 Nov	Regular expressions	… ditto …	Wk 8 practice assignment due 21 Nov
9	22 Nov	Analysing text – part 2	… ditto …	Wk 9 assignment due 28 Nov – **assessed** (20%)
10	29 Nov	Data visualisation	… ditto … https://pypi.org/	Wk 10 practice assignment due 5 Dec
11	6 Dec	Jupyter notebooks	… ditto … https://jupyter.org/	Wk 11 FINAL assignment due 9 Jan – **assessed** (30%)
12	13Dec	Current trends and advances	Google, Microsoft, Amazon, Boston Dynamics, Deepmind, Baidu Research, and many others	Final contributions to Python Forum due by end of week (17 Dec) – **assessed** (10%)