Introduction to Programming: Python for Humanists
Engl.GA.1972.001
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Monday 5-7, 244 Greene St, 105
Lab: Tuesday 10-11am, 244 Greene St, 805

This course introduces humanities students to the fundamentals of computer programming as students design, write, and debug computer programs using the programming language Python. No knowledge of programming is assumed. The approach in this course is to focus on text and textual manipulation while building useful applications in a variety of disciplines.

Overview:

In the first unit of the course, students will study the fundamentals of computer programming using Python. The course would begin by tapping into the familiarity of Humanities students with language – along with its textual forms and linguistic structures – by discussions and an opening assignment that draws analogies between programming and natural languages. Topics in semantics, grammar, and syntax will be discussed to help Humanities students understand the basics of writing computer programs. Topics in Python will include data types; selection statements; iteration; functions and modules; lists and dictionaries; and working with text and data files, among others. These topics will be taught in a traditional classroom/lecture discussion format, followed by weekly programming assignments in hands-on lab sessions. The second unit of the course will be project-based as students hone their programming skills to build useful programming applications to support scholarly research in the Humanities, such as textual analysis tools to examine word frequency and collocation; programs to “scrape” data from the web and prepare data and text files for further research and analysis; and related topics. Case studies of programming projects in the Humanities will be presented in class and evaluated from both scholarly and technical perspectives.

Grading:

Graded work will consist of the following:

- 10 homework assignments at 7% each. (70%)
- Final project (15%)

Each student will design and implement a textual analysis research project using Python to manage the selected corpus and produce original and meaningful research results of interest to the student’s discipline. Students in literature and language, history, and other fields have access to a wide variety of digitized documents and textual resources that are appropriate for analysis using the skills and methods they will have learned in this course. Starting in Week 6, the students will be working with texts that are relevant to their fields of study, so that by Week 11 they will have both a suite of programs and a corpus of texts to use as a foundation for the project. The project will address a significant research question, such as studies in authorship attribution; stylometry; gender studies; genre; and other areas of inquiry that employ textual analysis and are relevant to the student’s content field. The projects will be discussed in class and
class time will be spent working with the students on both the programming and the research aspects during class weeks 11, 12, and 13 (see below). Like many of the weekly assignments, the central pedagogical goal of the final project is to push students to more serious consideration of how the nature of the problem should guide the construction of projects and the writing of the programs that support their research. This approach insures that students focus early and often on designing projects that are not just computationally accurate but are also persuasive and satisfying to the contemporary humanities scholar.

- Final exam. (15%)

Readings:

Weekly readings will be assigned from a central course textbook, Think Python by Allen B. Downey (O’Reilly Media 2012) as well as from scholarly books and articles in the Digital Humanities.