Modern Software Engineering and Research
A Santa Fe Professional Development Workshop

Saturdays 2020-05-16, 2020-05-23 virtual; 2020-09-12 at Santa Fe Public Library

The Institute for Computing in Research
The Computer Science Alliance
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```
def calculate_path_length(city_list):
    """Calculates the full length of a path through a list of cities,
    including the return home from the last city on the list."""
    total_length = 0
    for i in range(len(city_list)-1):    ## iterate up to the second-last city
        c1 = city_list[i]
        c2 = city_list[i+1]
        length = distance(c1, c2)
```

The Institute for Computing in Research and the Computer Science Alliance will host a professional development workshop, aimed at all teachers in Santa Fe. The course will be taught by Mark Galassi of Los Alamos National Laboratory.

Our goal is to discuss current trends in computer science and software engineering and how they affect curriculum and pedagogy at the middle and high school level.

We will also focus on tools and do hands-on work with the Python, C, and Go languages on the GNU/Linux operating system.

There are no prerequisites except for being a teacher and knowing how to type.

This workshop is free for teachers, but space for part II is limited so please sign up by email soon! Dates are flexible, and individual make-up is possible if you have to miss some of the time slots.

Part I, session 1   2020-05-16:

14:00 Using a programming editor effectively for Python: emacs, vi, eclipse, others, …

14:45 Compiled languages: tour of C/C++, Go, Rust. Memory safety, workflow, and best practices.

16:00 MIT's "missing semester": build systems and version control.

16:45 Social snack and chat by videocon.

Part I, session 2   2020-05-23:

14:00 Software freedom, open-source, proprietary software: what software "runs the world"?

15:00 Internship landscape for students during and after high school.

15:45 Attracting and working with students from underrepresented groups.

16:30 Social snack and chat by videocon.

Part II   2020-09-12:

10:00 GNU/Linux installation and discussion of hardware/software interface. Linux IT.

11:00 Learning to debug compiled programs with the GNU debugger: hands-on, coached tutorial.

12:00 Lunch break

12:45 Using a programming editor part II: hands-on, coached tutorial.

13:45 The landscape of documentation formats: typesetters, word processors, markup, markdown, …

14:30 Open discussion.

15:15 Social "high tea" near the plaza, our treat.