COLL #127: The Art of Lazy Programming
Fall 2022

Lecturer & Sponsor Information

Name: Carlos "Karl" Hernandez
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Class Sponsor: Dr. Joseph Young
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Class Information

Time: W 7:00–8:00 PM
Classroom: McMurtry
Office Hours: W 8:00–9:00 PM

Additional individual meetings to discuss course material or any other concerns can be scheduled by contacting me via email, after class, or during office hours. Also Discord @ SeniorMars#2916.

Course Description

In your time at Rice, you will be taught how to approach complex topics within CS and solve them; unfortunately, many universities often miss to teach a critical step towards becoming a great computer scientist: efficiency as a developer. *The Art of Lazy Programming* is a one credit course, where students will be taught information every programmer should know, tips on learning complex but time-saving tools, and most importantly, the answer to **"how does one master their programming environment"?**

The intention of this class is to teach students tools such as awk, sshfs, and grep – that will make their life easier by introducing efficiency. While students may learn some of these tools in classes and spend dozen of hours using them, their core benefits are never explicitly taught. Yet, mastering these tools will allow students to solve large-scale problems that seem impossibly complex. Upon completion of the course, students will also have problem-solving skills that can be used outside Computer Science.

Course Objectives and Learning Outcomes

In this course, students will:

- Gain mastery over the command-line and be able to pick up new *nix tools without effort.
- Learn how to efficiently search information up, read codebases, and understand certain design choices.
- Develop techniques to profile, debug, and write efficient programs in multiple languages.
- Understand in depth how to use common programming websites, tools, and services to their full advantage.
- Create their own opinions about software methodology, programming languages, and open software.

Prerequisites: No previous knowledge is needed, however, this class is designed to cover various different topics every week, so it would be advised to have taken one CS class at the minimum.

Materials & Resources

The class website is located at lazy.rice.edu and the link to our class Github repo is: https://github.com/orgs/RTAOLP/teams/fall2022. All class notes will be posted here along with the homework for that week. Similar classes with their exercises and classnotes can be found at https://missing.csail.mit.edu/ and https://www.cs.cmu.edu/~07131/f21/. You may also find some of my past youtube videos helpful: Open Source Playlist. Don't hesitate to ask any questions if you have any.

Grading

At the end of the course students will either get a "Satisfactory" or an "Unsatisfactory" based on:

Homework Exercises (12x)	*45%*
Final Presentation	*25%*
Homework Readings Notes (12x)	*15%*
Quizzes (2x)	*10%*
Attendance & Participation	*5%*

Homework Assignments

Over the semester, you will be assigned 12 assignments. Each assignment will have a hands-on exercise and a reading component relating to that week's lecture. For the former, you are expected to complete and submit your assignment to that week's repository, and to check your solutions through the tester program. To complete the latter component, you will be asked to submit your notes/summary of that week's reading(s) through the same method mentioned beforehand. I will not read everyone's submission for this component, instead, it will mostly be graded on completion. More information will be provided in the first lecture of the semester. I will try my best to make each week's homework combined take 1-hour max per week. Please contact me if you do not believe I stayed true to my word. Finally, you are more than welcome to use 'man' or duckduckgo to help you solve these assignments.

Participation and Classroom Etiquette

You are expected to complete all assigned homework, come to class on time, and be prepared to participate actively. Civility in the classroom and respect for the opinions of others is very important in an academic environment. It is likely you may not agree with everything that is said or discussed in class; respectful and courteous behavior, as well as responses, are expected at all times.

Attendance, Absences, Late Work, and Extensions

Attendance is expected at each class as lectures will be crucial for understanding and completing homework. Legitimate absences must be communicated to the instructor at least 6 hours before class – with 3 unexcused absences resulting in an "Unsatisfactory" grade for the course. Late work will be accepted but will receive a 10% penalty for each day that it is late. Extensions can be arranged as long as you email me 24 hours beforehand.

Quizzes

During the semester, there will be two take-home quizzes. These short quizzes will have questions based on the lectures and homework of past weeks. The submission for this quiz will also be on that week's repository since they will be under the Rice Honor Code.

Final Presentation

The final two weeks of this class will be dedicated to final presentations. This will be the final for this course, where each student will be asked to present a five-minute presentation about a tool, service, or website relating to our class's topic and explaining how to use it. The rubric for the final will be released near the end of the semester.

Unrelated Lectures

I will give extra presentations about some CS topics I find interesting during the semester. I will give out notices to these lectures, and while these talks may not help your grade, I hope you're able to attend them.

Mental Health Week Pass

If you ever feel that for one reason or another, you can't do the homework for that week or just need a breather, email me and I'll give you 100% for that week. No questions asked. Of course, if you need someone to talk to, I'm more than willing to listen.

Rice Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

Academic Accommodation

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with the Disability Resource Center (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) contact me to discuss your accommodation needs.

Syllabus Change Policy

This syllabus is only a guide for the course and is subject to change with advanced notice. If you send me a picture of a cute platypus, I'll give you extra credit.

Class Schedule

The Schedule is tentative and subject to change.

Lecture	Date (Wednesdays)	Topic(s)
0	August 24th	Class Intro, Unix, and Terminal Usage
1	August 31st	Shell Scripting
2	September 7th	Terminal Text Editors & Better Alternatives
3	September 14th	Data Wrangling & Unix Tools
4	September 21st	SSH, Tmux, and CronJobs
5	September 28th	Version Control
6	October 5th	Github, Other Programming Websites, and Open Source
7	October 12th	Automation Through Programming
8	October 19th	Debugging & Profiling
9	October 26th	Servers, Dockerfiles, and VMs
10	November 2nd	Potpourri
11	November 9th	Final Presentations Part 1
12	November 16th	Final Presentations Part 2 & Q&A
13	November 30th	Discussion about Software Engineering and its impact