

CSCI 451/551 Fall 2021 Homework 1
Due: Mon, Sept 13, 11:59pm

Submission instructions:

- Combine your answers into a single PDF and submit that using gradescope (groups: make a group in gradescope and then do a single submission per group).

(Group submissions: please make sure all group members are listed)

Problem 1 (5 pts) Exercise 5 (textbook section 1.9, pg 27)

Problem 2 (10 pts) Implement the *Z-algorithm* in the language of your choice. Also, code up the *Exact Pattern Matching* algorithm that makes use of the Z algorithm. Demonstrate both algorithms on some test strings (use screen shots to show runs). Include your source code at the end of the PDF.

Bonus (1 pt): Modify your program to find all occurrence of a pattern string in a given FASTA file (https://en.wikipedia.org/wiki/FASTA_format). Your program should run like this:

```
myprogram ACTGA test.fasta
```

Demonstrate this works on a test file of your choice.